2021-2022

Literary Cognizance
ISSN- 2395-7522 - Online
An International Refereed / Peer Reviewed
e - Journal of English Language, Literature & Criticism
Vol.- II, Issue- 4, March 2022

07

REFLECTIONS ON NATURE AND CULTURE IN KIRAN DESAI'S *THE INHERITANCE OF LOSS*

Dr. Khan Mahlaqa Afzal
Assistant Professor
Department of English
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park,
Aurangabad, Maharashtra

==========***==========

Abstract:

The present paper attempts to focus on nature and culture in Kiran Desai's The Inheritance of Loss. It deals with the life struggle of the people in the hills after colonialism and also focuses on the relationship between nature and man. The novel takes place in a town called Kalimpong, which is near Darjeeling in the north-western point of India. It includes natural elements like mountains, peaks, hills, valleys, and so on. It also highlights on the dependence of human beings on nature.

Keywords: *Ecocriticism, Mystic, Narrative, Testimony, Nature, Culture, etc.*

The present paper attempts to focus on nature and culture in Kiran Desai's *The Inheritance of Loss*. It deals with the life struggle of the people in the hills after colonialism and also focuses on the relationship between nature and man. The novel takes place in a town called Kalimpong, which is near Darjeeling in the north-western point of India. It includes natural elements like mountains, peaks, hills, valleys, and so on. It also highlights on the dependance of human beings on nature.

Ecocriticism explores the relationship between human and the environment in all areas of cultural production especially literature, the presence of nature in literature from the ages shows the mystic relationship between men and nature. As a men can get happiness by creating harmonious relationship with things around him poets and writers from Wordsworth to Thoreau use nature as source of inspiration in their work. Often, they found solution of their problems in the company of nature. The intimate relationship between natural and social world is being analyzed in all departments of knowledge and development. India is a country which has variety of natural landscape differs from region to region from Himalayas, deserts, coastal area to lush green fields and forests. The natural landscape dominates the themes of Indian writers and writing in Englishfor instance, RajaRao's *Kanthapura*, R.K. Narayan's *The Guide* or the *Malgudi Days*. Anita Desai, *Cry the Peacock* or Kiran Desai's *The Inheritance of Loss*. Kiran Desai gain the literary attention in 1998 after her celebrated debut *Hullabaloo in the Guava Orchard* which own the 'Betty Task Award' a prize given by the society of authors for the best new novel by citizens of the Commonwealth of Nations under the age of thirty-five. Eight years later in 2006 Kiran Desai won The Men Booker Prize for The Inheritance of Loss. The novel demonstrates the influences of post coloniality, globalization, inner and outer conflicts, sensibilities of individuals and environment. The Inheritance of Loss begins with the beautiful description of Mount Kanchenjunga as, "Kanchenjunga was a far peak whittled out of ice, gathering the last of light, a plume of snow blown high by the storms as its summit" (Desai, 01).

In the novel Kanchenjunga is presented as the part of nature which cares for the brutality of humans and whose beauty is destroyed in the war of power. The novel tells of 1980s rebellion of the

HEAD Department of ... Navkhanda, Aurang...

PRINCIPAL Dr. Rafiq Zakaria ... Navkhanda, Jubilee Park, AURANGABAD. (M.S.)

www.literarycognizance.com

Literary Cognizance
ISSN- 2395-7522 - Online
An International Refereed / Peer Reviewed
e - Journal of English Language, Literature & Criticism
Vol.- II, Issue- 4, March 2022

doing anyone any harm. 'We should be dying; the judge almost wept. The world had failed Mutt. It had failed beauty; it had failed grace. But by having forsaken this world, for having held himself apart, Mutt would suffer" (Desai, 92). It was a time when Sai the granddaughter of Jemubhai had also losses connection with Gyan, her love interest. Gyan, a young man of twenty, was also attracted toward her. Their romance flourishes even when the trouble has started in Kalimpong.They are so much engrossed in love that they use nicknames for each other.Even the nick names they selected for each other were taken from the beautiful objects of nature- Sai called Gyan 'Kajau' and he called her 'Kishmish.' Sai goes on excursions with Gyan and visits almost each and every place of Darjeeling and other picnic spots. Gyan's feelings towards Sai are volatile whereas Sai considered her feelings towards Gyan with substantial seriousness. Somehow, the upsurge in Kalimpong takes Gyan in its grip. Gyan sees a procession in the market demanding Gorkhaland. He sees his friends as part of this procession. Out of curiosity, he also joins the procession. The procession ends with the speech of a leader. The speech of the leader affects him so much that he becomes aware of the deficiencies in his life and begins to compare his poverty with the luxuries that Sai enjoys when Naps revolted against the glowing impact of the outsiders; the Bongs with clear animosity, Gyan shifted his loyalties from Sai to the revolution. Naps considered themselves strangers in their own homeland and for this they held Bongs responsible who took away the key posts from them and subsequently they were forced to lead the life of an underdog. Kiran Desai has admirably shuffled with the fluctuating graph of feelings in her novel. This fluctuation has been successful in keeping our curiosity to know the outcome, alive throughout the novel. Sai was unable to show her confusion and unhappiness in public, while searching for Mutt as Desai narrates: "She felt grateful for the greatness of this landscape, walked on trying to recoverthe horizonfor it felt as if the space bequeathed her at the end of a romance that had promised a wide vistawell, it was nonexistent" (Desai, 309).

When judge mercilessly beat up cook for losing Mutt, Sai was shock to see this act, she felt disgusted and humiliated for being what she isa grandchild of cynical judge or so-called dignified creature, it was raining heavily at that point of time BBC was diced by storm, it is the storm within the hearts of Sai, judge and the cook. The savagery of human was matched by that of nature as, "Uncivilized voluptuous green would be unleashed; the town would slide down the hill slowly, painstakingly.Like ants, men would make their paths and civilization and their wars once again only to have it wash away again" (Desai, 323).

In the end of novel Kiran Desai uses the image of nature and its holiness when Biju the son of cook returns to 'Cho Oyu' the old house of judge, he returned to the place he belongs, a place of which he is part of like a human who is part of nature, tress, rivers mountains which permit him to come and submit himself without hesitation or worries o future, with realization of power one has within one own self.

References

- Desai, Kiran. *The Inheritance of Loss*. New Delhi: Penguin Books, 2006. Print.

This is an Open Access e-Journal Published Under A Creative Commons Attribution 4.0 International License

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD.

Department of English
Dr. Rafiq Zakaria College For Women

N - 2395 -7522 (Online)
pact Factor: 5.143 (Cos.)

www.literarycognizance.com



Dr. Rafiq Zakaria College
Aurangabad

Literary Cognizance



An International Refereed / Peer Reviewed e- Journal
of English Language, Literature and Criticism
(Vol.-II, Issue-4, March 2022)

Dr. Sudhir Mathpati
(M.A.,B.Ed.,M.Phil.,NET.,Ph.D)

Dr. Yashwant Handibag
(M.A.,NET.,Ph.D)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women * Aurangabad

Literary Cognizance
ISSN- 2395-7522
An International Refereed / Peer Reviewed
e-Journal of English Language, Literature & Criticism
Vol.- II, Issue- 4, March 2022
(www.literarycognizance.com)

CONTENTS

Sr. No	Title and Author	Page No
I	Cover Page	—
II	Content	—
01	Reading Mahesh Dattani's *Seven Steps Around Fire* As a Transgender Narrative - Dr. Ashoo Toor	03
02	Straddling Multiple Borders: Exploring the Conflicted 'Self-Identity' through Diasporic Cinema - Dr. Prabhleen Toor	09
03	Discerning the Diasporic Dimensions of Meera Syal's Fictional Narratives - Dr. Srikant	14
04	A Comparative Perspective on Elizabethan and Restoration Comedies with Special Reference to *A Midsummer Night's Dream* and *The Way of the World* - Ms. Himangi Narendra Yadav	18
05	Poile Sengupta's *Mangalam*: A Study from Gender Sensitivity to Trauma - Gulab Shaikh	25
06	Rewriting the Narrative of War: An Exploration of Toni Morrison's *Home* - Aman Preet Kaur	30
07	Reflections on Nature and Culture in Kiran Desai's *The Inheritance of Loss* - Dr. Khan Mahhaga Afzal	37
08	Gender Inequality in Khaled Hosseini's *A Thousand Splendid Suns*: A Study - Dr. Suresh D Bhosale	41
09	Natural World and American Identity: An Environmentalist Approach to Jean Toomer's *Cane* and Morrison's *Beloved* - Dr. Vibha Bhoot & Nishi Tak	45
10	The Postmodern Notion of History in Rushdie's Novels: A Study - Dr. Papai Pal	52
11	Morag's Search for Identity in Margaret Laurence's *The Diviners* : A Study- Dr. Todkar Shrishialva Tukaram	57
12	Eco-Killing of Nature: A Study with Special Reference of Gieve Patel's *On Killing A Tree* - J. Priyanka & Dr. R. Rajavelu	63
13	An Introduction to *Poong*: A Tai-Khampti Drama from Arunachal Pradesh - Mikta Mansai	67
14	A Study of Man Women Relationship in Vijay Tendulkar's *Sakharam Binder* - Dr. Milind Mane	71
15	Towards a Non - Spectacular Past: Commodity Memory and the Resistance in *Ullanwada Bayk* and the *Bantu Riot* - Saranya Sen	79

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Literary Cognizance
ISSN- 2395-7522 - Online
An International Refereed / Peer Reviewed
e - Journal of English Language, Literature & Criticism
Vol.- II, Issue- 4, March 2022

07

REFLECTIONS ON NATURE AND CULTURE IN KIRAN DESAI'S *THE INHERITANCE OF LOSS*

Dr. Khan Mahlaqa Afzal
Assistant Professor
Department of English
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park
Aurangabad, Maharashtra

Abstract:

The present paper attempts to focus on nature and culture in Kiran Desai's The Inheritance of Loss. It deals with the life struggle of the people in the hills after colonialism and also focuses on the relationship between nature and man. The novel takes place in a town called Kalimpong, which is near Darjeeling in the north-western point of India. It includes natural elements like mountains, peaks, hills, valleys, and so on. It also highlights on the dependence of human beings on nature.

Keywords: *Ecocriticism, Mystic, Narrative, Testimony, Nature, Culture, etc.*

The present paper attempts to focus on nature and culture in Kiran Desai's *The Inheritance of Loss*. It deals with the life struggle of the people in the hills after colonialism and also focuses on the relationship between nature and man. The novel takes place in a town called Kalimpong, which is near Darjeeling in the north-western point of India. It includes natural elements like mountains, peaks, hills, valleys, and so on. It also highlights on the dependance of human beings on nature.

Ecocriticism explore the relationship between human and the environment in all areas of cultural production especially literature, the presence of nature in literature from the ages shows the mystic relationship between men and nature. As a men can get happiness by creating harmonious relationship with things around him poets and writers from Wordsworth to Thoreau use nature as source of inspiration in their work. Often, they found solution of their problems in the company of nature. The intimate relationship between natural and social world is being analyzed in all departments of knowledge and development. India is a country which has variety of natural landscape differs from region to region from Himalayas, deserts, coastal area to lush green fields and forests. The natural landscape dominates the themes of Indian writers and writing in Englishfor instance, RajaRao's *Kanthapura*, R.K. Narayan's *The Guide* or the *Mulgaah Daya*, Anita Desai, *Cry the Peacock* or Kiran Desai's *The Inheritance of Loss*. Kiran Desai gain the literary attention in 1998 after her celebrated debut *Hullabaloo in the Guava Orchard* which won the 'Betty Task Award' a prize given by the society of authors for the best new novel by citizens of the Commonwealth of Nations under the age of thirty-five. Eight years later in 2006 Kiran Desai won The Men Booker Prize for The Inheritance of Loss. The novel demonstrates the influences of post colonialism, globalization, inner and outer

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Literary Cognizance
ISSN- 2395-7522 - Online
An International Refereed / Peer Reviewed
e - Journal of English Language, Literature & Criticism
Vol.- II, Issue- 4, March 2022

Dr. Rafiq Zakaria College for Women

ethnic Nepalese in the Himalaya town, who were fed up of being treated like the minority in the place where they were majority, the rebellion was bloody and chaotic in the sense that nearly every character not only at some stage degraded and humiliated but they also degrade and humiliate others. The 'loss' is physical, spiritual and environmental. Battle and rebellion are an act of human being to establish supremacy by conquering the beautiful place. Kiran Desai has portrayed the realistic picture of a beautiful landscape stands dignified while corrupted by terrorist and militant activities. It is said in the novel as: India had swallowed the jewel-coloured kingdom, whose blue hills they could see in the distance" (Desai, 92).

The house in which a retired judge with his orphaned granddaughter Sai, a servant and a dog, Mutt lives is situated at a place from where the beautiful treasure of nature can be easily enjoyed. The rooms were spacious in the old manner of wealth, windows placed for snow views. It is an old house that stands in true testimony of contemporary eco-friendly architect where one can receive maximum of nature's blessings. Though it is winter season and the surroundings are very cool, nature proves to be a source of energy to Sai, the judge and even to Mutt. They are involved in their activities and simultaneously enjoying the pleasures of natural beauty. They prefer to sit in veranda because "inside the house, it was still colder, the dark, the freeze, contained by stone walls several feet deep" (Desai, 01). The approaching evening and misty environment could not hamper the spirit of Sai rather she gets motivated by them and begins to walk into the garden. The Inheritance of Loss, set in the mid-1980s in Kalimpang high in the northeastern Himalayas, centers on three people and one dog living together in an ancient house named Cho Oyu. There is the frustrated, reptilian judge, Jemubhai Patel, lost in his chessboard and in his memories of a youth spent at Cambridge decades earlier, of humiliation in a foreign land. Staying with his beloved dog Mutt and his 17-year-old granddaughter Sai, who was orphaned as a child. The judge's cook, who manages the household, and a few neighbours scattered around the area, round off the cast. As the story unfolds, insurgency is growing in the region the Indian Nepalese want their own country or state, a Gorkhaland where they will not be treated as servants; young boys, trying to be men, roam the mountainside looting houses, collecting ammunition. Their predicament is contrasted against that of Indians settled abroad, the cook's son Biju, stumbling from one job to the next in the US in a grimly humorous parallel narrative. The last chapter of The Inheritance of Loss, like most of its earlier chapters, is written in the form of a collage. An attempt to summarize the events of the closing chapter may stand like this: the cook, in a fit of drunkenness, admits to Jemubhai Patel that he had cheated his master in several ways and was responsible for the loss of Mutt; the judge beats the cook frantically, Sai is disgusted of the whole chaos, Lola, Noni, Mrs. Sen and Uncle Potty abide in their crumbling world while Biju, ransacked by the Gorkhaland activists, returns to Cho Oyu and meets his father.

The actions of the judge and the cook need to be decoded in order to comprehend the implications of the closing chapter. A major portion of the narrative is taken up by Jemubhai's past, his journey from a small village in Gujarat to England and his subsequent return as an ICS officer of the Raj. The journey has had the most profound effect and his experiences in England, the humiliations whether real or perceived have seared into his soul, changing him forever. So, as Jemubhai climbs the ladder of material success, his soul plummets to new depths. It may appear surprising that a man who could not love his wife, his daughter and his granddaughter shares an intense relationship with Mutt, his pet dog. His relationship with Mutt is not a common relation of a man with his pet dog, he came to the realization that an animal is better than a man is. Desai though [illegible] the inhumanity of the human world whose actions ruin the other creatures of the [illegible] about the judge's emotion is, he couldn't conceive of punishment great enough [illegible] wasn't equal to an animal, not one particle of him [illegible] was stinking. [illegible], and meanwhile there were beautiful creatures who lived [illegible] earth, without

HEAD
Department of English
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Literary Cognizance
ISSN- 2395-7522 - Online
An International Refereed / Peer Reviewed
e - Journal of English Language, Literature & Criticism
Vol.- II, Issue- 4, March 2022

doing anyone any harm. "We should be dying; the judge almost wept. The world had failed Mutt. It had failed beauty; it had failed grace. But by having forsaken this world, for having held himself apart, Mutt would suffer" (Desai, 92). It was a time when Sai the granddaughter of Jemubhai had also losses connection with Gyan, her love interest. Gyan, a young man of twenty, was also attracted toward her. Their romance flourishes even when the trouble has started in Kalimpong.They are so much engrossed in love that they use nicknames for each other.Even the nick names they selected for each other were taken from the beautiful objects of nature- Sai called Gyan 'Kajau' and he called her 'Kishmish.' Sai goes on excursions with Gyan and visits almost each and every place of Darjeeling and other picnic spots. Gyan's feelings towards Saj are volatile whereas Sai considered her feelings towards Gyan with substantial seriousness. Somehow, the upsurge in Kalimpong takes Gyan in its grip. Gyan sees a procession in the market demanding Gorkhaland. He sees his friends as part of this procession. Out of curiosity, he also joins the procession. The procession ends with the speech of a leader. The speech of the leader affects him so muchthat he becomes aware of the deficiencies in his life and begins to compare his poverty with the luxuries that Sai enjoys when Naps revolted against the glowing impact of the outsiders, the Bongs.With clear animosity, Gyan shifted his loyalties from Sai to the revolution. Naps considered themselves strangers in their own homeland and for this they held Bongs responsible who took away the key posts from them and subsequently they were forced to lead the life of an underdog. Kiran Desai has admirably shuffled with the fluctuating graph of feelings in her novel. This fluctuation has been successful in keeping our curiosity to know the outcome, alive throughout the novel. Sai was unable to show her confusion and unhappiness in public, while searching for Mutt as Desai narrates, "She felt grateful for the greatness of this landscape, walked on trying to recoverthe horizonfor it felt as if the space beqneathed her at the end of a romance that had promised a wide vistawell, it was nonexistent" (Desai, 209).

When judge mercilessly beat up cook for losing Mutt, Sai was shock to see this act, she felt disgusted and humiliated for being what she isa grandchild of cynical judge or so-called dignified creature, it was raining heavily at that point of time BBC was diced by storm, it is the storm within the hearts of Sai, judge and that cook. The savagery of human was matched by that of nature as, "Uncivilized voluptuous green would be unleashed, the town would slide down the hill slowly, painstakingly.Like ants, men would make their paths and civilization and their wars once again only to have it wash away again" (Desai, 323).

In the end of novel Kiran Desai uses the image of nature and its holiness when Biju the son of cook returns to 'Cho Oyu' the old house of judge, he returned to the place he belongs, a place of which he is part of like a human who is part of nature, tress, rivers mountains which permit him to come and submit himself without hesitation or worries o future, with realization of power one has within one own self.

References

- Desai, Kiran. *The Inheritance of Loss.* New Delhi: Penguin Books, 2006. Print.

An Open Access e-Journal Published Under A Creative Commons Attribution International License

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jalbiva Park,
AURANGABAD. (M.S.)

Literary Cognizance
ISSN- 2395-7522 - Online
An International Refereed / Peer Reviewed
e - Journal of English Language, Literature & Criticism
Vol.- II, Issue- 4, March 2022

To Cite the Article: Khan, Mahlaqa "*Reflections on Nature and Culture in Kiran Desai's The Inheritance of Loss*". Literary Cognizance, II-4 (March, 2022): 37-40. Web.

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2021-2022

SP Publications
International Journal Of English and Studies (IJOES)
An International Peer-Reviewed Journal ; Volume-4, Issue-1, 2022
www.ijoes.in ISSN: 2581-8333; Impact Factor: 5.421(SJIF)

Dr. Rafiq Zakaria College

RESEARCH ARTICLE

Locating the self: A study in Sudha Murty's Gently Falls the Bakula

Dr.Nilofer Shakir, Asst. Professor and Head, Dept. Of English, Dr. Rafiq Zakaria College for Women, Aurangabad

Abstract

The present world is dominated by market and corporate culture. The traditional cultures are vanishing and a new global corporate culture is emerging. This new culture has brought drastic changes in people's lives. Apart from changing the social and economic structures of the society, it has brought marked changes in people's perceptions, attitudes and personal life. Many of us have become human machines with little place for sentiments and sympathy for others. In a country like India these global changes and the mushrooming Multi-National Companies have created a conflict between the traditional Indian value system and modernity. Sudha Murty's novel Gently Falls the Bakula depicts this through the relationship between Shrikant and Shrimati. It is based in Hubli in Karnataka and highlights the sweeping tide of global capitalism and its vast tentacles engulf the entire world filling the life of the contemporary man with a growing sense of helplessness and very often causing unhealthy and broken relationships.

Keywords: global, corporate culture, multi-national companies, broken relationships.

The global and cultural changes during the last few decades across the world have brought a change in people's perception and lifestytes. The scientific and technological advancements accompanied with growing corporatisation have led to shifts in attitudes related to relationships and society. In a country like India these global changes and the mushrooming MNC's have created a conflict between the traditional Indian value system and modernity. The novel depicts this through the relationship between Shrikant and Shrimati. Based in Hubli in Karnataka, this novel by Sudha Murty highlights how the changing social and cultural patterns of life affect human relationships. It shows how a simple young man from Karnataka, Shrikant enters the corporate world in Bombay to pursue his passion for success and money and is gradually transformed into a human machine. The writer takes care of all the intricacies and subtleties to show the transformation of Shrikant to highlight this change.

The relationship between Shrikant and Shrimati, their values and perceptions reflect India's transitional phase when it had started its journey towards becoming a global economy. Given India's rich, historical and cultural background one can see the conflict that it gave rise to between India's traditional social pattern and the growing tide of westernization. In the 90's India started emerging as a market and consumer society. The novel is based in the 90's and Sudha Murty explores the Indian transition into a new consumerist culture. The onslaught of westernization and urbanization is shown through the life, dreams and ambitions of Shrikant and his mounting indifference towards his extremely dutiful and loyal wife, Shrimati. Shrikant and Shrimati are neighbours in Hubli, a small village in Northern Karnataka. Their families are rivals owing to a family feud.

Apart from being neighbours, the two are classmates and always compete with each other in school. However it is Shrimati who always surpasses Shrikant and all others in her class in studies. But very soon Shrikant falls in love with Shrimati and they get married despite stiff opposition from their families. Shrikant enters the corporate world of business in Bombay and the couple leaves Hubli and start living in city. It is in Bombay that life changes drastically for the two.

Through the growing rift between the two, the writer highlights the conflict between India's traditional past and the impact of the west. Shrimati's calm and cool temperament, her humility and gentleness, her passion for history, and her reverence for India's rich and glorious past shows that she has imbibed the Indian spirit of virtuosity, peace, sacrifice and love. Her admiration for King Ashoka, for his virtuosity, the brave Vikramaditya, and also for Siddharta for his love, compassion and sacrifice shows her deep roots in India's cultural tradition.

Copyright © 2022 SP Publications

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda College Park,
AURANGABAD. (M.S.)

SP Publications
International Journal Of English and Studies (IJOES)
An International Peer-Reviewed Journal ; Volume-4, Issue-1, 2022
www.ijoes.in ISSN: 2581-8333; Impact Factor: 5.421(SJIF)

Dr. Rafiq Zakaria College for Women * Aurangabad *

RESEARCH ARTICLE

These examples are carefully chosen to highlight the spirit of love, compassion, selflessness woven into the thick fabric of Indian life, a land where Buddhism was born, a country with rich historical monuments, a land of prosperity and ancient dynasties. She says,

"I used to feel happy that my ancestors were a part of battles and a part of the kingdom too. I still feel that I belong to this area. The events might have taken place twelve centuries back, but when I closed my eyes, I could visualize many things." [1].

As they start living in Bombay, both gradually get separated into two different mental zones. Shrikant becomes more and more involved in business and the progress of his company

"happy that he could understand the global market and explore global business." [2]

Shrikant's obsession with his work blinds him to the needs of his wife. He becomes ignorant and indifferent to her. The only thing that he remembers is his work and his company.

Shrimati had always desired to pursue doctorate in history but due to Shrikant's engagements she forgoes the idea and instead becomes his secretary taking care of his appointments and other important things. This decision of Shrimati stifles her, given her love for history and her spirit of devotion to her husband's priorities. To quote Sudha Murty,

"when a woman gives up her right to choose for herself, that is when she crosses over from being an individual to a doormat." [3]

She is happy with the compromise that she has to make for Shrikant. But what pains her is Shrikant's lack of care and concern for her. Like any other woman she desires children of her own but Shrikant is not even bothered about it and refuses to go for a treatment to have a baby. She passes through several stages of rejection, humiliation, isolation, loneliness and boredom with each success that Shrikant achieves. Though she has always been more intelligent than her husband in studies and has the potential of becoming a brilliant history scholar, she sacrifices her desires for her husband. She not only makes compromises but she also bears the humiliation of her mother-in- law who leaves no opportunity to exploit her. To quote,

"Her main characters are women- gritty, educated, principled, middle to lower middle class and burdened with the conflicts that modernity and change have ushered into their lives." [4]

Being extremely humble she takes all the bitterness in her stride and silently supports Shrikant in his journey to climb the ladder of corporate success. Her sacrifices and selflessness are similar to that of Bhamati, a character from one of the Indian legends about a sage named Dharmashastra and his wife Bhamati. Before marriage she had narrated the legend to Shrikant about Bhamati's sacrifices. Dharmashastra married the young Bhamati but never bothered about her and remained buried in books and writing. After finishing a book that he had long been writing he noticed Bhamati who had grown old and he did not recognize her. Bhamati explains to him that she had been living with him since last forty years. He was astounded and as a mark of respect to her, he had given the title "Bhamati" to his book. She tells Shrikant,

"Bhamati signifies all those women who sacrifice their youth for the betterment of their husbands. Nobody remembers that sage's name but Bhamati stands out." [5]

And Shrikant's reply to Shrimati was,
"Oh Shrimati in today's society it is very difficult to find women like Bhamati. They have changed so much." [6]

Unfortunately, Shrikant does not realize that Shrimati's sacrifice and devotion for him are no less than that of Bhamati. This conflict between the two shows the vast difference between the old and the new value system.

Shrikant criticizes Indian history and Shrimati does not like the artificial gestures of friendship and hospitality of Shrikant with his American clients, the lavish parties and his business maneuvers. She represents the ancient Indian culture that values honesty. Shrikant has succumbed to the growing tide of commercialism. The love for money, status and business overpowers him and he fails to realise the worth of human beings, most of his entire wife who has made so many compromises for him,

"For him she had undergone so much opposition, criticism and nastiness from her in- laws. She had even given up her career, only because she really loved him. But Shrikant was not the same person she knew before

ISSN: 2581-8333
Copyright © 2022 SP Publications

HEAD
Department of English
Dr. Rafiq Zakaria College For Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Aurangabad, Jubilee Park,
A. [illegible]BAD. (M.S.)

SP Publications
International Journal Of English and Studies (IJOES)
An International Peer-Reviewed Journal ; Volume-4, Issue-1, 2022
www.ijoes.in ISSN: 2581-8333; Impact Factor: 5.421(SJIF)

Dr. Rafiq Zakaria College for Women * I.D. * Aurangabad

RESEARCH ARTICLE

marriage. This Shrikant Deshpande was only interested in name, fame, position and status. In building up his business, he had forgotten his dear wife. This Shrikant appeared a stranger to her."[3]

He now starts believing more in the American idea of life and progress and expresses his disgust for Indian culture and history, the subject that Shrimati likes most, which had shaped her perceptions and given her the vision of life. She had loved only two things in life- one is Shrikant and the other is history. He tells Shrimati,

"Don't talk about your worthless subject. The world of business is so different form yours. History cannot feed you.... we have a rigid caste system, superstitions abound and to top it all, a highly corrupt society. Look at the West. They are scientific, systematic and progressive."[4]

Thus it becomes clear that Shrikant and Shrimati have drifted apart into two different mental zones. Shrimati into the one that is human while Shrikant into the one that is mechanical, devoid of warmth and compassion,

"Every dinner, every conversation, every relationship was based on profit and loss. What a way to live, she (Shrimati) had thought!"[5]

And Shrimati could not live like this. She found it difficult to be a part of Shrikant's world and his life. Even the friends of Shrikant appreciated her sacrifices for him, but it did not have any effect on Shrikant. He had neither gratitude nor concern for his wife who managed his life and important things related to business so well,

"Shrikant had taken her for granted. He had a rare diamond in his hand but he was searching for a worthless glass of achievement."[6]

She realizes that what she had lost during the years she had been with Shrikant. She had given up an important part of herself to support Shrikant- her love for history. She had rejected the opportunity to go abroad for a doctorate in history. She could have carved a successful career but she viewed Shrikant's career above hers. In return she got nothing but Shrikant's lack of love and concern for her and the never-ending bitterness of her in-laws. Though it is very hard but finally she decides to leave Shrikant and go abroad to pursue doctorate. In the words of Sudha Murty,

"In the end, the protagonist of my novel, the wife rebels. Many people disagreed with the conclusion and suggested that she should have compromised with the situation. But I had this strong feeling that she deserved an identity. At no point does she make any noise about the treatment meted out to her. But there is a silent introspection happening, which ultimately leads to her emergence as a stronger being."[7]

Each moment for Shrimati is an elimination of her pure and benign self but the end of the novel shows the hope of regaining and retrieving the life that would connect her with a purposeful and meaningful existence.

References

[1]Murty Sudha, Gently Falls the Bakula. Penguin, India 14 February 2008. (45)
Ibid (90)
[2]Interview in The Hindu (Andhra Pradesh, National) October 4, 2008. Women must have identity: Sudha Murty.
[3]N.Rao, Ramesh, Culture – A Woman of Grace.
[4]Murty Sudha, Gently Falls the Bakula. Penguin, India 14 February 2008.(83)
Ibid (83).
Ibid(117-118).
Ibid (124-126)
Ibid. (119).
Ibid. (108).
Interview in The Hindu (Andhra Pradesh, National) October 4, 2008. Women must have identity: Murty Sudha

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad.

ISSN: 2581-8333

Copyright © 2022 SP Publications

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

HEAD
Department of English
Dr. Rafiq Zakaria College For Women

2021-2022

Dr. Rafiq Zakaria College for Women

ISSN 2349-5189

www.langlit.org

ISSN 2349-5189

LangLit

An International Peer-Reviewed Open Access Journal

Vol. 8 Issue 1 August 2021



Chief Editor

Dr. Prashant Mofi

PRINCIPAL
Dr. Rafiq Zakaria Coll. for Women
Navkhanda, Juhari Park,
AURANGABAD (M.S.)

ID, Google Scholar, Research Gate, Academia.edu, IBI, IIFC, DRJI

IMPACT FACTOR – 5.61

ISSN 2349-5189

LangLit

An International Peer-Reviewed Open Access Journal

Volume 8 Issue 1

Part 4

Dr. Rafiq Zakaria College for Women ★ Autonomous

SR. NO.	NAME OF THE TOPIC	AUTHOR
1.	COMPASSION, CHARITY, HAPPINESS AND HUMOUR IN OSCAR WILDE'S SHORT-STORY 'THE MODEL MILLIONAIRE'	DR. BHAWNA CHAUHAN
2.	POSTMODERNISM IN GIRISH KARNAD'S 'NAGMANDALA'	DR. BALASAHEB SAGADE & DR. BHUSHAN VITTHAL TAGAD
3.	SOCIO-PSYCHOLOGICAL BARRIERS TO COMMUNICATION: A BIG CHALLENGE IN CLASSROOM TEACHING	DR. TANJEEN ARA KHAN
4.	EMANCIPATION OF WOMAN IN PREETI SHENOY'S NOVEL 'THE RULE BREAKERS'	HIRALAL SHIVRAM WAGHMARE
5.	SHASHI DESHPANDE'S THAT LONG SILENCE: A JOURNEY FROM SILENCE TO SELF-REALIZATION	NEELAM DEBATA
6.	THE IMPACT OF COVID-19 PANDEMIC ON EDUCATION SYSTEM IN INDIA	DR. DASHRATH DNYANDEV KAMBLE
7.	THE IMPORTANCE OF MEDIA IN TEACHING AND LEARNING OF ENGLISH LANGUAGE AND LITERATURE	DR. PRASHANT TANAJI CHAVARE & DR. BHUSHAN VITTHAL TAGAD
8.	OPERATIONAL HEGEMONY IN MANJULA PADMANABHAN'S HARVEST	DR. MAHENDRA JAGANNATH DUTTE
9.	COMPARATIVE STUDY OF INDIAN AND WESTERN PHILOSOPHY WITH SPECIAL REFERENCE TO INDIAN PHILOSOPHICAL PROSE WRITER	DR. S. D. DESHBHRATAR

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

IMPACT FACTOR – 5.61

LangLit

ISSN 2349-5189

An International Peer-Reviewed Open Access Journal

24.	MISERY AND LOSS IN GHASSAN KANAFANI'S ALL THAT'S LEFT TO YOU	DR. KHAN MAHLAQA AFZAL
25.	INDO-ARAB CULTURAL AND LINGUISTIC ASSIMILATION:A THEORETICAL PERSPECTIVE	DR. SHAIKH KALIMODDIN RASHID
26.	NARRATIVE TECHNIQUES IN THE NOVELS OF GRAHAM SWIFT	MANOJ SHIVRAJ BHUJBAL
27.	'SWOC ANALYSIS:INSTRUMENT OF STRATEGIC PLANNING FOR THE GROWTH OF INDIVIDUALS AND ORGANIZATION	DR. KAMALAKAR BABURAO GAIKWAD
28.	MANIFESTATION OF DISCRIMINATION BETWEEN POOR AND RICH IN THE WHITE TIGER	DR. KIRAN W. GUTTE
29.	A REFLECTION OF MARTHA NUSSBAUM'S CONCEPTUALIZATION OF CULTIVATING COMPASSION THROUGH NARRATIVE IMAGINATION IN PATHER PANCHALI OR SONG OF THE ROAD	DR. SUDARSANA SARKAR
30.	'FIVE POINT SOMEONE' A NOVEL WITH MODERN NARRATIVE TECHNIQUES	DR. SAJJAN DNYANDEO GAIKWAD
31.	21ST CENTURY TEACHER	MADHU B. KUCHEKAR
32.	WATER WIVES- THE SCARCITY EFFECT	DR. SHOBHANA SINGH
33.	NEED FOR TEACHING PRONUNCIATION OF ENGLISH IN ESL CLASSROOMS IN INDIA	SHIRISH VASANTRAO KAMBLE
34.	SPACE: A STUDY OF SARAT CHANDRA CHATTOPADHYAY'S MAHESH	SUBHAM HAZRA
35.	EXAMINATION OF THOUGHT IN THE NOVELS OF BHARATI MUKHERJEE	DR. DIVYA VERMA
36.	A SOCIO-PSYCHOLOGICAL STUDY OF THE FEMALE CHILD RAKA IN ANITA DESAI'S NOVEL, FIRE ON THE MOUNTAIN	DR. WANKHEDE PRAKASH TUKARAM

Dr. Rafiq Zakaria College for Women, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Woman
Navkhanda, Juiblee Park,
AURANGABAD. (M.S.)

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad.

IMPACT FACTOR – 5.61

ISSN 2349-5189

LangLit

An International Peer-Reviewed Open Access Journal

MISERY AND LOSS IN GHASSAN KANAFANI'S *ALL THAT'S LEFT TO YOU*

DR. KHAN MAHLAQA AFZAL
Assistant Professor & Research Guide
Department of English
Dr. Rafiq Zakaria College for Women,
Navkhanda, Jubilee Park,
Aurangabad-431001(M.S.)

Dr. Rafiq Zakaria College for Women * U.G. * Aurangabad

ABSTRACT

The present research paper attempts to discussmisery and loss as one of the dominant themes in Ghassan Kanafani's All That's Left to You.It explores the topic through the relationship and representation of Hamid, Maryam and Zakaria. Maryam becomes the reason of Hamid's misery which drives himto leave his country. Losing a beloved sister and land adds misery to the life of Hamid. Whereas, Maryam invites misery and disgrace to herself and family through the affair and marriage with Zakaria whom she stabs later. Loss of brother and husband makes the life of Maryam very pathetic and miserable. Zakaria knows the consequences of his extra marital affair with Maryam but he involves Maryam, his first wife and Hamid in it. Zakaria is the reason of unhappiness, miserable life of both Maryam and Hamid. Throughout the novel he is known for betrayalwhom Hamid refers as 'swine'. Both-external and internal forces in All That's Left to You' effectson the lives of the characters enormously. The loss of lives and disgraced relationship in the novel makes the narration very gloomy and pessimistic. Ghassan Kanafani succeeds in depicting the worst situation and the miserable condition of the people of war-torn Palestine.

Keywords: Misery, Loss, Pessimism, Flashback, Palestinian, and Gaza.

Ghassan Kanafani, Palestinian novelist, writer of short-stories and political activist was killed in the explosion of his booby-trapped car in Beirut in 1972. He is considered a leading novelist in the Arab world. Hamid and his sister Maryam in *All That's Left to You*are the victims whereas, Zakaria contributes to theme immensely. Characters in Kanafani's novel also represent the difficult phases of Palestine and sufferings of its own people.Kanafani uses Time and the Desert as characters alongside Hamid, Maryam and Zakaria. According to him, thefusion involves a series of disconnected lines which occasionally come together in such a way that they seem to be making just two strands and no more. There is no clear distinction between places and times which are far removed from each other, or indeed between places and times at a single moment. Time does indeed play a pivotal role in this novel. The events takeplace over a period of some eighteen hours, many of them at night, and there is a copious use of flashback to provide the reader with details of earlier events in the lives of the principal characters. Time becomes symbolized through the ticking of both the wall clock in the "temporary" Palestinian home in the Gaza Strip where Maryam and her feckless and already married lover, Zakaria, have set up house and also the watch which Maryam's brother

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ISSN 2349-5189

IMPACT FACTOR – 5.61

LangLit

An International Peer-Reviewed Open Access Journal

They'll say: "That's the slut who stole Fathiyya's husband. The poor woman's got five children by him; you can see them all there, running and playing in the sight of God and men." And you, what will you say? You, you, you, what will I mean to you, Zakaria? They'll say: "Her brother almost lost his mind and ran away in shame. She had her first child with him barely five months after marriage- what a scandal!" They can all go to hell, but you, you, what will you say to them? They'll also say: "He married her free of charge. She was fired up with youth and desire, and she's got a house with two rooms, two beds and a frying pan… He managed to chase away her younger brother, who's disappeared no one knows where." Liar! But you, what will you say, Zakaria? How will you stand up for me, now that I'm all alone and everyone's dropped away? What will you say?[4]

The loss of faith and betrayal is narrated through the act of Zakaria when the Israeli soldiers were looking for Salim in a group it was Zakaria who came forward while saying he knows Salim. Palestinians don't want to lose Salim therefore they didn't disclose the identity of Salim but Zakaria helps them in identifying Salim, later who was killed by the Israeli soldiers. The miserable condition of Salim's mother is narrated as,

> *"I went there at night," she said, but I didn't find him. They've buried him in secret. Do you have any idea where? My son, my reason for living, all that was left to me."*[5]

As the story proceeds Hamid wants Maryam to follow his footsteps and abandon Zakaria but Maryam prefers to stay with Zakaria and carries a bastard of Zakaria. Hamid don't want to stop the marriage because for him Maryam and Zakaria have gone ahead with things and against his wishes. Being a concerned brother, he offers some advice to Maryam as,

> *"It doesn't matter what I say, you'll marry him in a few hours. But even if you're prepared to destroy yourself and lose your husband, at least try not to lose the child…"*[6]

Though Maryam stays with Zakaria but the bond of marriage and a tag of happy couple was missing in their relations. She doesn't want to be subjugated and can't share her husband with another woman. Her heated exchange of words turns into a quarrel and in an anger, she stabs Zakaria with a long glowing knife. In fact, Zakaria has to be a proud father of the son who is going to be born but he insists Maryam on to abort the same. He adds more misery to the life of Maryam as,

> *"Do you think I married you to have a son, you rotten whore?" … "If you can't abort him then you're divorced… divorced… divorced. Do you hear? Divorced."*[7]

Hilary Kirkpatrick writes that Kanafani lived and died according to his ideals. Yet, unlike many committed writers, he refused to impose an ideological scheme on his fiction in any but the most general terms. Although his literature served the cause of Palestine, they have a universal appeal, thanks to his literary talents and his tenacity in preserving that freedom without which art is stifled. Ghassan Kanfani's representation of the characters in *All That's Left to You* explores the misery and loss in such way that makes the reader aware about the

Dr. Rafiq Zakaria College for Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park
AURANGABAD. (M.S.)

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad

IMPACT FACTOR – 5.61

ISSN 2349-5189

LangLit

An International Peer-Reviewed Open Access Journal

pathetic condition of the Palestinians and the trauma of war hovering in the land of Palestine. The Palestinian attachment to land and family, and the sorrow over their loss, are symbolized through the characters of Hamid, Maryam and Zakaria.

REFERENCES

1) Kanafani, Ghassan. *All That's Left to You. A Novella and Short Stories*. Trans.May Jayyousi and Jeremy Reed. Northampton, Massachusetts: Interlink Books, 2004. Introduction pp. xii-xiii. Print.
2) ---.P.2. Print.
3) ---. P.5. Print.
4) ---. P.36. Print.
5) ---. P.39. Print.
6) ---. P.41. Print.
7) ---. P.48. Print.

Dr. Rafiq Zakaria College for Women
Principal & Secretary

READ
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Journal of Magnetism and Magnetic Materials 537 (2021) 168229

Contents lists available at ScienceDirect

Journal of Magnetism and Magnetic Materials

journal homepage: www.elsevier.com/locate/jmmm

Research articles

Microstructure, magnetic, and dielectric interplay in NiCuZn ferrite with rare earth doping for magneto-dielectric applications

B.B. Raje Shaikh [a], Bhagwan G. Toksha [b,*], Sagar E. Shirsath [c], Aniruddha Chatterjee [d], Shyam Tonde [e], Syed Qadeeruddin Chishty [f]

[a] Department of Physics, Government College of Arts and Science, Maharashtra, India
[b] Basic Sciences and Humanities Department, Maharashtra Institute of Technology, Maharashtra, India
[c] School of Materials Science and Engineering, University of New South Wales, Sydney, NSW 2052, Australia
[d] Plastic and Polymer Engineering, Maharashtra Institute of Technology, Maharashtra, India
[e] Plastic and Polymer Engineering, Maharashtra Institute of Technology, Maharashtra, India
[f] Department of Physic, Dr. Rafiq Zakaria College for Women Aurangabad, Maharashtra, India

Dr. Rafiq Zakaria College for Women Aurangabad

ARTICLE INFO

Keywords:
Mixed ferrite
Sol-gel auto combustion
Structural properties
Dielectric applications

ABSTRACT

The homogeneous conglomerate of ferrite oxide samples with increasing concentration of Neodymium and Lanthanum in the steps 0.02 with the chemical formula $Ni_{0.4}Cu_{0.2}Zn_{0.2}Fe_{2.4}(Nd_{0.5}La_{0.5})_xO_4$ ($0 \leq x \leq 0.10$) were achieved by novel citric acid-metal nitrate sol-gel auto-ignition method. The nano-regime crystallites products were achieved by using Ni, Cu, Zn, La, Nd and Fe nitrates and keeping the metal nitrate to citrate ratio 1:1. The products of ensured recipe in the form of chemical formula resulted in precursor powders were calcined for removal of desiccated impurities. The ready blends were subjected to an exhaustive examination with distinctive characterizations. The completion of the reaction and phase formation temperature was confirmed by thermal analysis and structural confirmations were received by X-ray diffraction (XRD), Scanning electron microscopy (SEM), and Fourier transform infrared (FTIR) spectra. The analytics regarding the local symmetry in crystalline solids and understandings about the ordering phenomenon were discussed with the support of FTIR spectra. The diffractograms contributed to the corroboration that the powders obtained were bearing single phase and spinel structure. Evaluation of TEM and DLS confirms fine particle nature of the particles. SEM analysis and EDAX indicated that the samples were having dense, homogeneous and expected stoichiometric cation ratios. The neodymium and lanthanum content influenced the measured saturation magnetization negatively and coercivity positively. The heightened values in electrical conductivity, high ε' and low dielectric losses in combination with high saturation magnetization, low coercivity, observed in the present samples make them prospect candidate for microwave and electromagnetic shielding applications.

1. Introduction

The reduced size and weight antenna devices are in demand for the electronic components used in wireless communication [1–4]. The research in the direction of development of antenna miniaturisation requires substrate materials exhibiting peculiar properties [5]. The reduced antenna dimensions are built with the materials with high dielectric responses as substrates which becomes as one of the possible approaches in this situation. The use of such materials in antenna fabrication poses the challenge of concentrated field accumulation around the high permittivity region hampering the antenna efficiency. The issues such matching/mismatching of impedance gets aggravated further in antenna development technologies [6]. The contemporary research dynamics about ferrite formulations have continued to be in research focus and been extensively studied with a point of improving the miniaturized antenna performance by reason of their contrastive better magnetic and dielectric performance [7–9].

Spinel ferrites in their normal and inverse variance continue to summon for substantial attention of researchers. Their diverse technological deeds exhibit splendid semiconducting, magnetic, and optical properties. This magnetic materials cohort exhibit technologically viable magneto/electrical properties. The growing demands are fetching many efforts to exceed level best physical/chemical lineaments. There are multiple approaches to get the best suited combinations from the

* Corresponding author.

https://doi.org/10.1016/j.jmmm.2021.168229
Received 5 April 2021; Received in revised form 15 June 2021; Accepted 19 June 2021
Available online 27 June 2021
0304-8853/© 2021 Elsevier B.V. All rights reserved.

Dr. Chishty HOD Department of Physics Dr. Rafiq Zakaria College for Women Navkhanda, Jubilee Park, AURANGABAD. (M.S.)

PRINCIPAL Dr. Rafiq Zakaria College For Women Navkhanda, Jubilee Park, AURANGABAD. (M.S.)

Intensity And Screening of Fungi Causing Market Diseases of Banana (*Musa paradiscica*)

Baig Mumtaz

Dr. Rafiq Zakaria College for Women,
Aurangabad- 431001, (M.S.)

Dr. Rafiq Zakaria College for Women

Abstract: Post-harvest diseases caused by fungi develops on fruits and other plant products between harvesting and consumption. The threat of post-harvest disease influences the way most horticultural crops are handled. Therefore the accurate identification of the causal pathogen is essential before appropriate treatment can be made to control the pathogens. In the present study a number of fungi viz., *Alternaria alternata, A. citri, Aspergillus niger, A. flavus*, sp., *Cladosporium cladosporioides, Gleosporium masarum Drechslera australeinsis, Fusarium solani, Fusarium* sp., *Penicillium* spp., *Phytophthora capsici* and *Rhizopus stolonifer* responsible for post-harvest deterioration of fresh fruits and vegetables were isolated and identified.

Keywords: Post-harvest, pathogen, *Alternaria alternata, Phytophthora capsici*, Deterioration.

Introduction:

The banana (*Musa paradiscica*)) fruits are the best sources of many vitamins, minerals , carbohydrates, antioxidants like vit-C, vit-E, vit- A & zinc, selenium, lycopene etc. and dietary fibers. Fruits improve overall health of human beings. Strong immune system increases resistance power towards different types of diseases. Fruits provide all types of minerals that are required to our body. The nutrimonists placed fruits and green vegetables on the top because; fruits contain all types of essential ingredients which are required for healthy living beng. Fruits contain 50-90% moisture. There are reports from different parts of world that antioxidants play important role in anti -ageing process. Human body requires different types of essential amino acids all such amino acid are present in fruits.

The loss of fruits after harvest is a major problem of fruit growing countries of the world. In order to make plan for the disease control, it is very essential to have knowledge of pathogenic organism associated with fruits during storage periods. The associated mycoflora responsible for fruit losses. The aim of study of fruit diseases of market is to develop perfect disease management strategies that are economically significant. The diseases causes change in color, shape and biochemical alteration of the fruit due to interaction of the pathogen and the fruit becomes unfit for consumption. The Amino acids prevent infections of pathogens. The fruits are highly sensitive to the exogenous agencies such as fungi, bacteria etc. that affects the quality of fruit and causes loss of fruit. The diseases of fruits which occur after harvest during packing, transportation and storage periods due to fungal or bacterial pathogen are called as post-harvest diseases. Gupta,(1989).

There are different types of fungi associated with market diseases of banana. for Pankaj Sharma and Verma, (2013) studied *Rhizopus* sp. from post-harvest rot of guava caused due to *Rhizopus* sp. from. Sunna, et. al, (2006) reported white rot of papaya by caused by *Sclerotium rolfsii*. Pankaj Sharma and Verma, (2013) studied post harvest rot of apple disease during storage which was due to infection of *Phytophthora colocaceae*. Fusarium rot of Peach (Choudhury, (1950).); Alternaria and Cladosporium rot of grapes fruits (Ali, 2010). Rhizopus on grapes (Oyeleke and Manga, 2008).

In Marathwada region fruit storage system is not well developed. There are no any facility for storage of fruits after harvest from government. The roads are not well. Hence during transportation many of the fruits get injured. The injured fruits immediately get attacked by saprophytic fungi which causes rot diseases during transportation or storage period. Because of such problems about 20-55 percent fruits get deteriorated due to mycoflora. Some of the pathogenic fungi attack fruits at immature stage and some others infect to overripe fruits. Major loss of harvested fruits is caused due to fungi. The diseases caused before harvest of fruits also responsible for degradation of quality and cost of banana in market.

Material and Method: For the study the banana fruits were collected from godowns different fruit store houses of Aurangabad. From the same lot 10 immature healthy fruits were collected in a sterile polyethylene bag A separate polyethylene bag was used for each fruit . One infected fruit in one bag (Linskens and Jackson, 1995). A separate bag was used even for healthy immature fruits (Bagwan, 2010). The mycoflora responsible for storage rot disease of banana fruit was isolated on PDA (Potato Dextrose Agar) medium by food poisoning technique method. Before inoculation the infected fruit was surface sterilized with the help of 0.1% HgCl2 solution and then rinsed with the solution of sterile distilled water for 3-5 times to remove traces of HgCl2 solution. Then a small piece of infected region of fruit was removed with the help of sterile r needle and the infected portion was inoculated on PDA (Potato Dextrose Agar) medium amended petriplate in sterile condition. The inoculated petriplate were incubated at room temperature 24+-^{0}C. The fungus growing from the inoculated infected piece was inoculated on PDA medium. .The pathogenecity was confirmed by following Koch's postulates. The fungi were identified on the basis of morphological features, type of colony growth, colour of colony, size and shape of spores and pigmentation.

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College for Women, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2021 - 2022

Dr. Rafiq Zakaria College for Women * Aurangabad

INDO-PACIFIC REGION, CHINA AND QUAD

Dr.Tanmay Paithankar

Prime Minister Shri Narendra Modi have participated, along with Prime Minister of Australia Scott Morrison and Prime Minister of Japan Yoshihide Suga and President of U.S.A. Joseph R. Biden, in the first Leaders' Summit of the Quadrilateral Framework, held virtually on 12th March 2021.The Leaders have discussed regional and global issues of shared interest, and exchange views on practical areas of cooperation towards maintaining a free, open and inclusive Indo-Pacific region. The Summit will provide an opportunity to exchange views on contemporary challenges such as resilient supply chains, emerging and critical technologies, maritime security, and climate change. The Leaders have also discussed ongoing efforts to combat Covid-19 pandemic and explore opportunities for collaboration in ensuring safe, equitable and affordable vaccines in the Indo-Pacific region.

Introduction

If pluralism is the arch of Indian foreign policy, then New Delhi's adherence to the "Quad" (MEA 2017) needs to be understood within a plural and compound context of India's evolving relationship architecture with major powers while protecting its strategic interests in the Indo-Pacific region. Taking advantage of its geographical centrality in the Indian Ocean Region (IOR), India's approach to the Quad has been an evolutionary experience in the emerging Indo-Pacific construct where India's interdependent but complex relationship with China is a strong factor. Aligning with "likeminded" countries without making a formal alliance or discounting its relationship with countries outside the Quad is the hallmark of India's evolving foreign policy strategy. The Indian Prime Minister Narendra Modi's speech at the Shangri-La dialogue on June 1, 2018 in Singapore explains this narrative. As eloquently stated by Modi, "India's strategic partnership with the United States is a new pillar of our shared vision of an open, stable, secure and prosperous Indo-Pacific region" (MEA 2018). At the same time, Modi expressed that India's relationship with China has "many layers", making it important for global peace and progress (MEA 2018). Likewise, India's relationship with Russia constitutes a crucial part in the shared understanding of a "multipolar world order" (MEA 2018).

As India tailors its approach towards the Quad consultative forum in Indo-Pacific, this article seeks to identify the bearing of any anti-China tendencies. It essentially argues that New Delhi's Quad stance is not an explicit move against China but rather is a calculated strategic move to protect its interests, including maritime ambitions, in view of a "revisionist" China (The White House, NSS 2017; MEA 2018) in the Indo-Pacific. India's rendezvous with the Quad is to strengthen its foreign policy outreach against China's strategic non-equilibrium stance that poses multiple challenges to India's strategic ambitions. The Quad can therefore signify New Delhi's plural foreign policy strategy to engage more intently with a prevailing power structure, otherwise known as the liberal power structure, led by the United States to eventually gain ascendancy over the alternative structure, known as the revisionist power structure, led by China. Concurrently, India has been nurturing its relationship with China, seeking to manage the age-old boundary disputes and engage in better economic relations.

India-China Relations and the Quad:

Often viewed as a "quintessentially political process" to preserve the CPC's legitimacy (Ming Xia 2009), China's rise has been intensely debated across the Asia-Pacific/Indo-Pacific region, both in its domestic and international context. As such, New Delhi's participation in the Quad should be viewed in this light and understood as a phenomenon of the growing strategic inequity that India faces at present with a dominant China as a neighbour. The Indian outlook

Dr. Tanmay A. Paithankar
Professor & Head
Dept. of Pol. Science
Dr. Rafiq Zakaria College For Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

In Association with International Journal of Scientific Research in Science and Technology
Volume 9 | Issue 2 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X (www.ijsrst.com)

IJSRST

2021-2022

Optical Study of Pure and Zn^{2+} Doped Ammonium Dihydrogen Phosphate Crystal for Devise Applications

Raje Shaikh B.B.[1], Syed Qudeeruddin Chishty[2]

[1]Assistant Professor, Department of Physics, Government College of Arts & Science, Aurangabad, 431001, Maharashtra, India

[2]Associate Professor, Department of Physics, Dr.Rafiq Zakaria College for Women Aurangabad, Maharashtra India

Dr. Rafiq Zakaria College for Women Aurangabad

ABSTRACT

The present investigation explores the influence of metallic impurity on optical property of Ammonium dihydrogen phosphate (ADP) crystal to emphasize its utmost liability for futuristic device applications. The most commercially viable slow solvent evaporation method has been employed to grow the undoped and Zn^{2+} doped ADP (ADP-Zn) single crystals. Vickers micro hardness study has been employed to evaluate the role of metal in uplifting the hardness parameters of ADP crystal. The optical study of ADP-Zn crystal has been comparatively investigated.

Keywords: - Crystal growth, Microhardness study

I. INTRODUCTION

Ammonium dihydrogen phosphate (ADP) crystal has excellent property amongst the phosphate family due to its widespread applicability in fabricating the frequency conversion (second, third, fourth), frequency mixing, microscopic lasing, telecommunication, optical parametric, optical switching, optical data storage etc. devices [1, 2]. ADP crystal has appealing characteristics such as ferroelectric, piezoelectric, high optical homogeneity, low cutoff wavelength, high SHG coefficient, strong thermal and physical stability owing to which research community throughout the world are trying to pursue the further advancement in inherent properties of ADP crystal by various methods. The most frequently adopted way to tailor the properties of ADP crystal is using an external additive in the form of dopant. In literature the organic (amino acids and dyes) as well as metallic ions like Fe and Cr and cesium have brought the best improving results in various distinct properties of ADP crystal.[3]. It is

Copyright: © the author(s), publisher and licensee Technoscience Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

Auto-ignition synthesis of rare-earth metal-doped Ni–Zn spinel ferrites for electronic applications

B. B. Raje Shaikh[1,*] and Syed Qudeeruddin Chishty[2]

[1]Department of Physics, Government College of Arts and Science, Aurangabad, Maharashtra, India
[2]Department of Physics, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Received: 07 May 2021
Accepted: 18 August 2021

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2021

ABSTRACT

A series of $Ni_{0.4}Zn_{0.6}Fe_{2-x}La_xO_4$ ($0 \le x \le 0.10$) was synthesized using the sol–gel auto combustion method with metal nitrate to citrate ratio 1:1. The resultant powders were then characterized for their structural, morphological, compositional and electrical properties. The synthesized powders exhibited a single phase with a spinel structure. TEM, SEM, and DLS evaluation confirmed the fine particle nature of the particles. While the EDAX indicated the samples were having the expected stoichiometric cation ratios. An increase in electrical conductivity, high dielectric constant, and low dielectric losses in combination with high saturation magnetization, low coercivity, observed in the present samples make them prospective candidates for high-frequency electronic applications like inductance/transformer-cores, antennas, and microwave absorbers.

1 Introduction

With the rapid development of electronic technology in wireless communication devices, the demand for miniaturized and lightweight antennas has rapidly increased [1–4]. Thus for antenna miniaturization search and development of suitable material has increased [5]. For miniaturized antenna's the materials with high dielectric responses can be ideal, but the use of such materials can lead to concentrated field accumulation around the high permittivity region hampering the antenna efficiency and further leading to difficulties in impedance matching [6]. Recently considerable attention is been derived from the magneto-dielectric ferrite materials for antenna miniaturization and performance enhancement [7–9].

Spinel ferrites in their normal and inverse forms continue to call for considerable attention of researchers owing to their diverse technological applications because of their impressive semiconducting, magnetic, and optical properties. The spinel ferrites exhibit very good magnetic and electric properties and the demand for further improvement in physical and chemical properties has gained much attention. For this, a variety of different approaches have been used among them the material modification via improved synthesis techniques has great potential [10, 11]. Along with this doping, the spinal ferrite with rare-earth elements is expected to achieve the desired properties. The controlled doping would lead to the generation of defects via distortion, and symmetry break [12, 13]. The rare-earth metal cation

Address correspondence to E-mail: rajeshaikhbb@gmail.com

https://doi.org/10.1007/s10854-021-06963-w
Published online: 24 August 2021

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Journal of Magnetism and Magnetic Materials

Microstructure, magnetic, and dielectric interplay in NiCuZn ferrite with rare earth doping for magneto-dielectric applications

S.B. Ajale Shaikh[a], Bhagwan G. Toksha[b,*], Sagar E. Shirsath[c], Anirudha Chatterjee[d], Chetan Tonde[e], Syed Qudeerudin Qadri[f]

[a] Department of Physics, Dr. Rafiq Zakaria College for Arts and Science, Maharashtra, India
[b] Advanced Materials Research Laboratory, Metallurgical Engineering Department, Visvesvaraya National Institute of Technology, Maharashtra, India
[c] School of Materials Science and Engineering, University of New South Wales, Sydney, NSW 2052, Australia
[d] Department of Engineering Physics, Indian Institute of Technology, Maharashtra, India
[e] Department of Physics, Visvesvaraya National Institute of Technology, Maharashtra, India
[f] Department of Physics, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Dr. Rafiq Zakaria College for Women * Aurangabad

ABSTRACT

Our homogeneous complexation of nano scale samples with increasing concentration of lanthanum and Lanthanum in the steps 0.02 with the chemical formula $Ni_{0.5}Cu_{0.5}Zn_{0.5}Fe_{2-x}La_xO_4$ ($0 \le x \le 0.10$) were obtained by solid state and sol-gel auto-combustion method. The nano-ferrite powders products were achieved by using $Fe_{2-x}La_xO_3$ (x = 0, 0.02, 0.04, 0.06, 0.08, and 0.10) nitrates and keeping the metal cation ratio constant. The material of desired purity in the form of nanosized ferrite obtained as precursor powders were subjected for characterizations. The completion of the reaction and phase formation was confirmed by thermal analysis and structural examination was carried by X-ray diffraction (XRD). Scanning electron microscopy (SEM), and Fourier transform infrared (FTIR) spectra. The analysis regarding the bond angle and bond length and dielectric and electromagnetic properties were discussed with the support of FTIR spectra. The dielectric measurements for the composition that the powders obtained were having single phase and good structure. Evaluation of TEM and XRD confirms fine particle nature of the powders. SEM analysis and EDAX confirmed that the samples were being dense, homogeneous and exposing well-defined grain boundaries. The analysis and behaviour of dielectric constant influenced the measured permeability spectrum and found to be consistent with Snoek's limit. The brightness of work in electrical conductivity, high μ' and low dielectric losses in combination with high saturation magnetization, low coercivity observed in the present samples make them prospective candidates for microwave and other magnetic shielding applications.

1. Introduction

The reduced size and weight wireless devices are in demand for the electronic components used in wireless communication [1–4]. The research in the direction of development of wireless interconnection requires substrate materials exhibiting peculiar properties [5]. The reduced wireless dimensions are built with the materials with high dielectric constant and wireless which becomes as one of the possible approaches in this direction. The use of such materials in wireless fabrication poses the challenge of concentrated field accumulation around the high permittivity region hampering the antenna efficiency. The latest such technology/manufacturing of capacitance and approximal factor in wireless development technologies [6]. The current growth in research about ferrite nanoparticles have continued to be in research focus and been extensively studied with a point of improving the substituted antenna performance by the use of their composite better magnetic and dielectric performance [7–9].

Special factors in their internal and external surface structure to surface for substantial attention of researchers. Their diverse technological fields which provided predominating magnetic and optical properties. The magnetic materials cobalt exhibit technologically viable magneto-electrical properties. The growing demands on fracture many efforts to exceed to the best physical/chemical behaviours. These are multiple approaches to get the best added combination from the

* Corresponding author.

https://doi.org/10.1016/j.jmmm.2021.168229
Received 5 April 2021; Received in revised form 15 June 2021; Accepted 19 June 2021.
Available online 27 June 2021
0304-8853/© 2021 Elsevier B.V. All rights reserved.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Asian Journal of Organic & Medicinal Chemistry
Vol. 7 No. 2 (April-June, CRNSS 2022)
ISSN Online: 2456-8937
UGC CARE APPROVED JOURNAL

Dr. Rafiq Zakaria College for Women, Aurangabad

Nanofluids: An Innovative Technology for Heat Transfer Mechanism

F.B. Quadri[1]* Sangeeta Shinde[2]

[1]Department of Physics, Dr. Rafiq Zakaria College for Women, Aurangabad, India
[2]Department of Physics Pratishthan Mahavidyalaya Paithan, Aurangabad, India

ABSTRACT

The present century is witnessing tremendous innovations and discoveries in the field of nanotechnology and nanoscience owing to the unique features and properties possessed by fabricated nanoparticles. Nanofluids is one such material that is finding applications in various industrial and commercial fields because of advanced physiochemical properties as compared to their base fluids. Nanoparticles, in the form of suspensions in traditional working fluids show higher thermal conductivity and heat transfer properties, making them a desirable material in micro-cooling systems that form the main component of many devices of today's comfortable and luxurious life. The present paper reviews the synthesis techniques, classification, properties of nanofluids and various methods and steps adopted by the researchers all over the world to maintain the stability and functionality of the nanofluids. Finally, the paper focusses on the future challenges that has to be tackled for mass production and commercialization of nanofluids.

KEYWORDS: Nanofluids, thermophysical properties, thermal conductivity, specific heat, thermal diffusivity, viscosity, etc.

INTRODUCTION

Nanofluids are yet another innovation of nanotechnology that has gripped the researchers all over the world. These are diluted suspensions of nano particles whose one of the dimension is in the range of nanometers with the convectional basic fluids used in heat transfer mechanism. Nanofluids exhibit advanced thermophysical properties like thermal conductivity, viscosity and high heat transfer coefficients as compared to their base fluids[1-8].

Heat transfer is one of the prime requirement of many industrial and electronic systems. It has been noted that early 50% of electrical energy is utilized in maintaining the desired temperature of the electronic cooling systems[9]. Rapid energy transfer is required in certain equipment using X-rays, lasers and electronic systems[10]. The working efficiency of the machines or systems are elevated or raised by use of coolants like water, engine oil, or certain organic liquids ethylene glycol, etc. Further enhancement in the heat transfer property can be achieved by use of advanced liquids like nanofluids.

The main drawback with the use of milli and micro sized particle in the base fluid is agglomeration and possible erosion of the pathway thereby causing wear and tear of the system. And also no appreciable increase in the heat transfer property was achieved with these particles. In the year 1995, Choi innovated a new technique of suspending metallic nanoparticles in the tradition fluids to obtain nanofluids exhibiting enhanced heat transfer properties[11]. From then, the synthesis and applications of different nanofluids in various cooling system flourished. Today, the literature survey revealed that there are vast number of research papers that study the heat transfer properties of different nanoparticles in the form of nanofluids. Advantage of nanoparticles suspension in the traditional fluid is the smooth passage of the liquid in the channels due to smaller size. Larger surface area, better stability and high mobility of the nanoparticles in the suspended form elevates the heat transfer property of the nanofluids and places them above their basic fluids.

Nanofluids show higher thermal conductivity and this property can be further enhanced by reducing the size of the nanoparticles[12].

Types of nanofluids: Nanofluids in different forms are having wide applications in the fields of automobiles, microelectronics, pharmaceutical industries, etc. They consists of convectional fluids dispersed with nanoparticles in various forms, such a dispersion shows enhanced properties that prove their applicability in diverse area. Nanofluids can be formed from nanoparticles of single element (e.g., Cu, Fe, and Ag), single element oxide (e.g., CuO, Cu_2O, Al_2O_3, and TiO_2), alloys (e.g., Cu-Zn, Fe-Ni, and Ag-Cu), multi element oxides (e.g.,$CuZnFe_2O_4$, $NiFe_2O_4$, and $ZnFe_2O_4$), metal carbides (e.g., SiC, B_4C, and ZrC), metal nitrides (e.g.,

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Rafiq Nagar, Jubilee
AURANGABAD.

rnal of the Maharaja Sayajirao University of Baroda
SSN: 0025-0422

FACILE SYNTHESIS AND CHARACTERIZATION OF COPPER OXIDE (CuO) NANOPARTICLES VIA SOL-GEL METHOD

Sangita Shinde Department of Physics, Pratishthan Mahavidyalaya, Paithan, Aurangabad, M.S. India.

Pallavi Nalle Department of Physics, Shri Shivaji Science and Arts College, Chikhali, Dist. Buldana, M.S. India.

P. Kute Department of Physics, Pratishthan Mahavidyalaya, Paithan, Aurangabad, M.S. India.

Firdos Quadri* Dr.Rafiq Zakaria College for Women, Aurangabad, M.S. India.

N. D. Chaudhari Department of Physics, Pratishthan Mahavidyalaya, Paithan, Aurangabad, M.S. India.

Abstract:
Metal and metal oxide particles are very importance because of their prominence in different fields of applications in Science and Technology. In this present paper work Copper Oxide (CuO) Nanoparticles are synthesized by Sol-Gel technique in ethanol media. Copper Chloride (CuCl2) was used to prepare Copper Oxide Nanoparticles. The synthesized nanoparticles are characterized by using X-ray powder diffractometry (XRD) to find the crystallinity, UV- visible spectra and Scanning Electron Microscope (SEM). The XRD data reveals that the prepared CuO-nanoparticles are pure, crystalline and nano-sized. The SEM image suggested that CuO nanoparticles are like rice grains or needle shape and there is a tendency of agglomerations. UV-visible spectra gives the band gap of nanoparticle CuO which is 3.43 eV after calculation. Nanoparticles shows the interaction between Copper and Oxygen. This method is more economical, convenient, easy and effective in comparison to other known methods of synthesis of nano-materials.
Keywords: Copper Oxide Nanoparticles; Chemical Precipitation; Nanotechnology; Sol-Gel; X-ray Diffraction; SEM.

Introduction:
Over the last decade, transition metals and metal oxide are numerous applications in different fields. Nowadays metal oxide nanomaterials have attracted researchers due to their unique physical and chemical properties that makes them technologically very important in numerous fields [1, 2]. Copper Oxide (CuO) is one of useful metal oxide which has numerous applications in range fields. Copper oxide nanoparticles have a great efficiency as Nanofluids in heat transfer applications. Some Scientist has been reported that by just 4% addition of CuO increases the thermal conductivity of water by 20% [3]. Copper Oxide has a semiconducting compound with a narrow band gap. It has used for photoconductive and photothermal applications.
Copper oxide nanoparticles has various applications such as gas sensors, magnetic storage media, batteries, semiconductors, solar energy transformation and field emission…etc [4,5]. The numerous methods are used to prepare copper oxide nanoparticles, including solid state reaction, sol-gel, sonochemical preparation, microwave irradiation, alkoxidebased synthesis and thermal decomposition [6,7]. In the present work, for the synthesis of nano particles of copper oxide sol-gel method was used as it was more economical, faster and easier.

Experimental
Materials.
Analytical Reagent (AR) grade chemicals such as Copper chloride (II) $CuCl_2$, Sodium hydroxide NaOH, Acetone and Ethanol C_2H_5OH were used as starting material for the synthesis of CuO. These chemical were purchased from Merck with purity 99.9%. These chemicals were used as purchased without further treatment in this study.

Synthesis of CuO
For synthesis of CuO-NPs, at first 6.0 g of copper (II) chloride dehydrate was dissolved in 320 ml of Ethanol and 3.6 g of sodium hydroxide pellet were dissolved in 100 ml ethanol separately. Drop wise addition of sodium hydroxide solution to copper (II) chloride dehydrate solution was carried out with constant stirring at room temperature. The color of the solution was turned from green to bluish green and finally to black as the reaction proceeded. The black precipitate was copper hydroxide. The precipitate was filtered by a centrifuge (Eppendorf Refrigerated Centrifuge Model 5702R, Germany). Then washed with ethanol and deionized water to remove the sodium chloride salt solution. After that, the precipitate was dried at about 50°C in the dryer. The dried sample was annealed at temperature 100°C to obtain crystalline CuO-NPs. Then the annealed sample was grinded to get the powdered nanoparticles. The powder sample was used to characterize CuO-NPs. Schematically the chemical reaction can be represented as:

$$CuCl_2 + 2NaOH \rightarrow CuO + 2NaCl + H_2O$$

Characterization Techniques
The as prepared sample of copper oxide nano particle was characterized by XRD i.e. X-ray diffraction technique The crystalline structure

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

ZERO DIMENSIONAL MATERIALS: PROPERTIES, SYNTHESIS AND APPLICATIONS A REVIEW

[1]Quadri F B

[1]Assistant professor, Department of Physics, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001(MS) India.

Abstract: Reduction in the size and dimensions of the materials brings about a drastic change in their physical and chemical properties making them a powerful tool for advanced research and applications. Increased surface area, quantum confinement effects and good biocompatibility make them applicable in areas of biosensors, solar cells, nanoscale electronic devices, light-emitting nano devices, laser technology and waveguide. The fields are not just limited to the listed one. Research is still going on in the various techniques of synthesis of the nanomaterials that can open the scope further for the wide spread application of nano materials. The present paper deals with the different types of nano materials, their synthesis techniques, unique properties, applications and finally the future challenges in this regard.

Index Terms: Nanomaterials, biocompatibility, quantum confinement effect, semiconductors, sol-gel, hydrothermal.

I. INTRODUCTION

The term "nano" was coined by Norio Taniguchi in 1974 and zero dimensional (0D) nanomaterials are the forerunner of nanotechnology. During last few decades, nano technology has been a rapidly growing field. Researchers all over the world has diverted to this branch owing to the advanced and unique features of nano materials in comparison to the bulk material. Their extremely small size has made them potentially applicable for wide range of industrial, biomedical and electronic use. Because of the smaller size many atoms are at the surface or at the interface making them highly reactive with advanced surface properties, such as energy levels and electronic structure that gives rise to totally different material properties. Nano devices like nanocapsules can open a new dimension in gene therapy, medical diagnosis and drug delivery. Novel properties such as optical stability, wavelength-dependent photoluminescence, chemical inertness, cellular permeability and biocompatibility, 0D nanomaterials offer great adaptability to biomedical applications such as nanomedicine, cosmetics, bioelectronics, biosensor and biochip (Koh I. et al, 2009).

In case of semiconductor materials, reduction in the size increases the surface to volume ratio or quantum size effect resulting in a drastic and, favourable changes in the optical properties and also enhances the conductivity. Such nonmaterial prove vital in the manufacturing of solar cells, sensor technology, display units, biosensors, as catalysts, superabsorbent, parts of automobiles, parts of ammunitions, nanoscale electronic devices like transistors, LEDs, SCRs, diodes. Some of the semiconductor nonmaterial such as Si, Si-Ge, GaAs, AlGaAs, InP, InGaAs, GaN, AlGaN, SiC, ZnS, ZnSe, AlInGaP, CdSe, CdS, and HgCdTe etc., exhibit excellent application in computers, palm pilots, laptops, cell phones, pagers, CD players, TV remotes, mobile terminals, satellite dishes, fiber networks, traffic signals, car taillights, and air bags. (S Iijima,1991) first reported the synthesis of carbon nanotubes with advanced features like strength and stiffness. Carbon nanotubes are thermally stable in vacuum upto a temperature of 2800° C and show conductivity thousand times higher than copper wire. Use of such carbon nanotubes in various components can bring about the revolution in the electronic industry. A nano computer using nanotubes has already developed. Need for the miniaturization of optical devices and electronic sensors have further increased interest of researchers in exploring novel nano semiconductors (Bawendi MG et al, 1990 & Alivisatos A P, 1996). There are practical constraints associated with current technologies; lithographic methods cannot at present be used with a resolution much less than ca. 200 nm. Most semiconducting materials such as the II/VI or III/VI compound semiconductors, show quantum confinement behavior in the 1-20 nm size range, a smaller size than can be achieved, using present lithographic methods. Carbon-based nanomaterials are one of the most widely studied materials in the field of nanotechnology due to their low cost of mass production, low intrinsic toxicity and multifunctional surface fictionalization. (Panwar et al, 2019) . This review paper presents the structures and properties of 0D nanomaterials along with the synthesis techniques.

II. CLASSIFICATION OF NANOMATERIALS

When the relative dimension of the material is comparable to the de Broglie wavelength of an electron, the electrons are confined to the regions of one, two or three dimensions. The nanostructures of the crystals having the z direction below this critical value are defined as 2D nanostructures like thin film, layer structure, quantum well. When the dimension both in the x and

2021-2022

rnal of the Maharaja Sayajirao University of Baroda
SSN: 0025-0422

SYNTHESIS OF Ni-Co-Zn FERRITE NANOPARTICLES BY SOL-GEL METHOD AND THEIR CHARACTERIZATION

R. B. Bhise Department of Physics, Balasaheb Jadhav College, Ale, Tal:Junnar, Dist:Pune, MH, India 412411.

Ravi Bavskar Department of Physics, DadaPatil Rajale College, Adinathnagar, Tal:Pathardi Dist: Ahmednagar, MH, India.

F. B. Quadri Department of Physics, Dr. Rafiq Zakaria College for Womens, Aurangabad, MH, India.

Ashok Datir Department of Physics, Agasti Arts, Commerece and Science College, Akole, Dist: Ahmednagar, MH, India.

Abstract:
Spinel crystalline Ni1-x Cox Zn1+x Fe2O4(x=0.2, 0.4 and 0.6) ferrites were synthesized by Sol-gel Auto Combustion method. The powders were sintering at 400oc and 700oc for 2 h to densify properly. The samples were characterized by X-RD, SEM and FT-IR. The X-RD confirms single phase spinal Structure. The Lattice constant of the prepared powder samples were calculated from X-RD peaks and it increases gradually with increasing in Co and Zn content. The FT-IR spectra confirmed that synthesis material is ferrite. Morphology of ferrite powders were investigated by using SEM.
Keywords: Sol-gel Auto Combustion method, Nano crystalline, X-RD, FT-IR, SEM.

1. Introduction:
Ferrite nano powder have scientific and technological importance in recent years due to their broad range of application such as ferrofluid, magnetic resonance imaging, Bio-Medicine, Catalyst, magnetic recording etc [1]. Metal ferrites are commercially important material because of their excellent magnetic and electrical properties [2]. The spinal Co Zn Ferrite plays an important role in microwave absorbing material because of remarkable properties. Synthesis of ferrite nano crystals are of great interest in the study and tailoring of specific magnetic materials. The method is used to fabricate these materials are ball milling, sonochemical, sol-gel, chemical co-precipitation. The letter techniques allow fabrication of nano crystal differing by their size. In recent years very few studied based on different composition of Co and Zn have been carried out. The size and morphology of nano particles and their properties may be controlled by modifying the composition of the nano composites and by thermal treatment conditions. Due to the small size of the nano crystals, an important part of the atoms are located at the surface this is the reason why the sol-gel synthesis method gone on intensive development [4]. This method allows us to obtain fine Ni Co Zn Ferrite Nano particles (4-10 nm) at relative low temperature (7000C). Up to this stage the research work on Ni CO Zn Ferrite is very limited. The sol-gel method was used for synthesis of this nano ferrite material. This method involves hydrolysis [1,5-7].

In this paper we present a study on the synthesis of Ni0.4CO0.4Zn0.2Fe2O4, Ni0.2CO0.6Zn0.2Fe2O4 and Ni0.2CO0.2Zn0.6Fe2O4 nano composites of different composition the composition, crystal structure, morphology, and size distribution of Ni, Co, Zn-Ferrite nano crystals can be controlled by adjusting the synthesis route and molar ratio of materials in the initial mixtures. The synthesized nano crystals have been characterized by X-RD, SEM, and FT-IR, presented below are the details of investigation.

2. Experimental:
The Ni0.4CO0.4Zn0.2Fe2O4,Ni0.2CO0. 6Zn0.2 Fe2O4 and Ni0.2CO0.2Zn0.6Fe2O4 ferrite powders were prepared by co-precipitation and hydro thermal technique using iron nitrate, zinc nitrate, cobalt nitrate, and nickel nitrate as reaction agent. To obtain Ni0.4CO0.4Zn0.2Fe2O4, Ni0.2CO0.6Zn0.2Fe2O4 and Ni0.2CO0.2Zn0.6Fe2O4 ferrite powders we have mixed AR grade iron nitrate, zinc nitrate, cobalt nitrate, and nickel nitrate with bidistilled water. Citric acid was used as a chelating agent because it plays an important role in homogeneous mixture formation of metal cations. Reaction procedure was carried out in air atmosphere at room temperature. The composition was well shake and pH of solution is maintained as 7 using ammonia solution. The prepared solution was stirred on magnetic stirrer at 800C to form a gel. The prepared ferrite samples were annealed for 4000C and 7000C. The general chemical reaction involves in synthetic process can be written as
(x-0.8)Ni(NO3)2.6H2O+(x)Co(NO3)2.6H2O+ 10.2)Zn (NO3)2.6H2O+2Fe(NO3)3.9H2O+3C6H8O7→Nix-0.8 COxZn0.2 Fe2O4+4N2↑+18CO2↑+36H2O.
The synthesized nano crystalline samples were characterized by X-Ray Diffraction techniques at room temperature by using Philips powder X-Ray Diffractometer (model PW 3710) with Cuka radiations having wavelength 1.5406 Å. The morphological features of the fractured surfaces of investigated samples was determined by using Scanning Electron Microscopy (SEM) techniques (Model [illegible])

Dr. Quadri F.B.
Asst. Prof.
Dept. of Physics
Dr. RZCW, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda
AURANGABAD

2021-2022

nal of the Maharaja Sayajirao University of Baroda
N: 0025-0422

NANOPARTICLES AND THEIR APPLICATIONS IN AGRICULTURE: A REVIEW

Quadri F B Dr. Rafiq Zakaria College for Women, Aurangabad.

Naseem Deshpande Abeda Inamdar Senior College of Arts, Science and Commerce, Pune.

Sangeeta Shinde Pratishthan Mahavidyalaya Paithan, Auragnbad.

ract:
ced ... of ENPs has advanced physical and chemical properties which make them an edge above their counterpart bulk rials. ...ese particles find applicability in every walk of life right from the ancient activity of agriculture to advanced fields IOT (Internet of Things) and space explorations. Present paper summarizes different types of NPs and reviews the various cts of agriculture that uses NPs to combat the challenges to changing environmental conditions while keeping the pace of yield the increasing population. NPs, in a way are also proving helpful in minimizing the concentration of pollutant thereby enting the contamination of the soil and maintaining its fertility. Lastly, on field application has yet to be monitored with NPs, demented by the formulation of guidelines for the assessment of the risk factors for the betterment of mankind and the ronment.

oduction:
ng to the unique features and properties, engineered nanoparticles (ENP) have attracted the research community all over the ld. Innovative and advanced techniques have been developed to make commercial use of them for the benefit, comfort and rious life of the mankind. Rapid development and wide applications of nanotechnology brought about a significant increment he number of engineered nanoparticles (ENs) inevitably entering our living system. Globally, industries are in the production commercialization of ENP so as to develop sophisticated and smart devices that can be encashed. ENPs have been incorporated almost every field of life because of their advanced characteristics as compared to their bulk counterparts. Nanoparticles of erent shapes and sizes can be engineered and fabricated according to the need and make them applicable thereby revolutionizing y aspects of our lives. Even in ancient period nanomaterials were used in sculptures and architecture for their beauty and anced features. This is very much apparent from the architectural work of that era. The study of nanomaterials gained mentum only after the discovery of higher resolving power instruments like atomic force microscope (AFM) and Scanning nneling Microscope (STM).

At nanoscale, quantum effects are apparent and they play a vital role in defining the parameters of the materials. At nanoscale, it becomes easier to control and manipulate the formation and movement of atoms and molecules and mould them as our requirement. With such structures the ENPs exhibit advanced physiochemical properties as compared their bulk interparts. ENPs show greater chemical reactivity, higher tensile strength, more sensitive to light spectrum, quantum nfinement, higher surface to volume ratio, etc. Production techniques vary from very simple to complex materials in the form of ular particles, thin films, nanotubes, etc. Nanoparticles has been used in various commodities in the past decades but, recent ress of various branches of science have revolutionized the production methods and, multiplied their applications in the sectors s drug delivery, space missions, agricultural and food industry, cosmetic, textile, sustainable energy, green environment, etc. to ne a few. The NPs can be used in sensing [1 2], chemical and biological sensing [3], for drug delivery [4], and other various plications [5]. Desalination is yet another field where nanoparticles find their application [6].Thus nanotechnology has a wide pact on the life style of the society and has also contributed a large towards the economy of the nation.
anoparticles of diverse materials like ceramics, polymers, semiconductors, etc in solid, liquid or sol-gel form are synthesized. ese materials exhibit unique structural, physical, chemical and morphological properties that make them applicable in domestics well as commercial fields like electronics, food and preservatives, biomedical, green environment, clean energy production, ...ics, imaging, space missions, etc. Their optical properties are dependent on their size making them useful in different ions. Various physical and chemical assisted methods are adopted for the synthesis of nano materials of different size and ture as shown in fig(1).

Dr. Quadri F.B
Head Dept of Physics
Dr. RZCW A'bad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navipeth, Jubilee Park,
AURANGABAD. (M.S.)

IJARSCT

ISSN (Online) 2581-9429

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 11, Issue 1, November 2021

IJARSCT
Impact Factor: 5.731

Ethnomedicinal Plants Used for Cure of Sexual Dysfunctions in Humans by Traditional Hakeem's of Malegaon Region from Nasik District.

Shaikh Tausif and Baig Mumtaz

Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Abstract: *Hakeem is an Arabic word meaning "Physician" or "Practitioner of herbal medicine". Hakeems are practice Unani medicinal system i.e. the Greco Arabian system of medicine or Islamic medicine. Most of the Hakeems are practice on sexual disorders like Decrease in sperm count, decrease of viscosity of semen, erectile dysfunction, pre mature ejaculation and fluidity of sperms are common sexual dysfunctions of males and Leucorrhoea, Amenorrhea and Lactational amenorrhea (Postpartum infertility) are the common sexual dysfunctions of females of human being. The present study on these diseases is based on the collection of data from Hakeems of Malegaon region who practicing on these diseases from generations about 90 to 150 years.*

Keywords: Hakeem, Unani, Temperament.

I. Introduction

Hakeem never told his formula but in this present work we try to collect some data from Hakeems about some plants used against sexual dysfunctions and we collects 18 plants crude drugs and some details about these plants. These 18 plants belongs to 16 genera of15 Families.

Malegaon city is densely populated with near about twelve lakh people live in a society from this 79 % peoples belongs to Islam religion and from this 75 % people complete their education in Urdu language and these peoples also have great knowledge of Arabic and Persian and the data of Unani medicinal system is written in the language. Hakeems of Malegaon practicing these system traditionally learned from their ancestors. The medicines have great impact factor.

II. Material and Methods

2.1 Survey

We collect data and samples of crude drugs from Hakeems and some BUMS doctors who practicing in Unani system by interview. The Hakeems of Malegaon are practicing in these medicine from 90 to 150 years.

- Doctor and Hakeem Tabish: Their clinic was established in 1928. It is their family profession which is going on since 90 years and this is their fourth generation in the same profession. Their great grandfather (Hakeem FatehMohommed / Fattu Hakeem) was the pioneer of this profession in their family.
- Hakeem Altaf Rehmani: It is their family profession which is going on since 120 years and this is their fourth generation in the same profession. Their great grandfather was the pioneer of this profession in their family.
- Hakeem Momin Hafeez (Lallahakeem): It is their family profession which is going on since 90 years and this is their third generation in the same profession. Their great grandfather was the pioneer of this profession in their family.
- Babu Hakeem: It is their family profession which is going on since 85 years and this is their third generation in the same profession. Their great grandfather was the pioneer of this profession in their family.
- Mohammadia Unani College and Assayer Hospital: I obtained information, photographs and samples of crude drugs from here. Dr. Omair Malik (B.U.M.S.) helped me here for collection of crude drugs.

Copyright to IJARSCT
www.ijarsct.co.in

DOI: 10.48175/IJARSCT-2079

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College for Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Effects of Different Substrates on Total Yield of Oyster Mushrooms (Pleurotus spp.)

[1]Shaikh Saheba Mateen, [2]Baig Mumtaz

Department of Botany,
Dr. Babasaheb Ambedkar Marathwada University Aurangabad (MH) India.

Dr. Rafiq Zakaria College for Women * Aurangabad *

Abstract: **The study was conducted to evaluate the total yield of oyster Mushroom Pleurotus ostreatus spp. Seven substrates Formulas including Maize, Wheat straw (WS), Paddy straw (PS), Soyabean, Black gram (SB), Mixed (M), Sugarcane Bagasse (SB) and Jowar (J) were investigated. The results indicated that different substrate formulas gave a significant difference in total colonization period, characteristics of fruiting bodies, yield, and biological efficiency (BE). Substrates with 100% M and 100% WS were the most suitable substrate formulas for cultivation of oyster mushrooms PO in which they gave the highest values of cap diameter, stripe thickness, mushroom weight, yield, However, substrate formula 100% Jowar gave the slowest time for the first harvest of mushroom PO.**

Keywords: **Oyster mushroom, Substrates, Yield.**

INTRODUCTION

Mushrooms are saprophytic macro fungi which belong to class Basidiomycetes. Edible Mushrooms have been used and consumed by ancient people. Traditional knowledge about mushroom benefits have been transmitted from one generation to another one orally. It has been mentioned in ancient texts like Vedas. Roman and Chinese, think that mushrooms have a power for life and strength and it is the God Osiris gift for them. In ancient days in India, China and Iran, people used mushrooms in their religious activities. Ethno mycology of edible medicinal mushrooms has been reported in many countries like India and China. Mushrooms are described as highly tasty and nutritional foods by many populations around and the world. In comparison to other edible mushrooms, *Pleurotus* species need a short growth time and their fruiting bodies are not often attacked by diseases and pests. Number of mushrooms is approximately 14.000 species and only 14.000 species are described. They are also identified as a source of food and medical treatment purposes. It is used in traditional treatments in many countries such as Mexico, Japan, China, Africa, and Korea and in Central and North American countries.

For large scale production, large steamers, sometimes one-room steamers are used. For the home or cottage industry, an autoclave or pressure cooker or a drum can be used for sterilization of mushroom bags or containers. Mushrooms have been used traditionally by ancient people as a source of food and in their religious activities. Ethno mycology of mushrooms has been reported in many countries including India. Many species of mushrooms provide an excellent source of natural compounds that are useful for the treatment of many diseases.

Pleurotus Ostreatus, the **Pearl Oyster Mushroom** or **Tree Oyster Mushroom**, is a common edible mushroom. It was first cultivated in Germany as a subsistence measure during World War I and is now grown commercially around the world for food. It is related to the similarly cultivated king oyster mushroom. The oyster mushroom is one of the most commonly sought mushrooms, though it can also be cultivated on straw.

Substrates:

Agricultural wastes are rich in various types of nutrients and their disposal is difficult to manage as excess of nutrients in them can cause leaching left in the field, as a compost. Mostly they are disposed of by means of incineration which causes pollution. Hence, there is always a high demand for discovering an agricultural waste management method which is cost effective and contributes less to environmental pollution. Mushroom cultivation on agricultural wastes fulfils these requirements. Agricultural wastes are rich in lignin cellulosic components which are difficult to break down, but can effectively be done mushroom cultivation. Mushrooms are fleshy fungi, spore bearing fruiting bodies which are produced above ground on soil. They often refer to the fruiting body of the gill fungi, which do not contain chlorophyll like green plants and as a result cannot manufacture food by their own. They are very nutritious products that can be generated from lignocellulose waste materials. The bioconversion of agricultural wastes into a value added product is a good means of their use. The property of edible mushroom fungi to convert complex organic compounds into simpler ones is used to transform the useless agricultural waste into valuable products.

MATERIALS AND METHODS

Oyster Mushroom Cultivation Process:

The process for the cultivation of oyster mushrooms is simple because its cultivation does not lend itself to complex scientific procedures. Farmers can cultivate the fungi with less supervision. The cultivation of the fungi relies on the interaction of a particular set of physical, chemical and biological factors (Rangel et al., 2006). The important areas to note in the cultivation of oyster mushrooms in order to balance the three factors include substrate selection, composting, sterilization of substrates, bagging of substrate, spawning / inoculation, incubation, fruiting.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nakhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College
Aurangabad.

EVALUTION OF MYCOFLORA OF FENUGREEK SEED

[1]Khan Farheen Kauser, [2]Baig Mumtaz

Dr. Rafiq Zakaria College for Women, Aurangabad 431001
Maharashtra India

Abstract: **In present investigation study of mycoflora associated with seeds of Fenugreek (*Trigonella foenum graecum L*) six fungal species like *Alternaria alternate, Aspergillus flavus, Aspergillus nigar, Fusarium solani, penicillium italicum, Mucor and Rhizopus stolonifer,* were found using agar plate and standard blotter test. Seed borne fungi are losses the production and affect the seed health.**

Keywords: **Fenugreek, seed borne, mycoflora, seed health**

Introduction:

Fenugreek (*Trigonella foenum graecum L*) is an annual herb plant belongs to family Fabaceae ,fenugreek grows under arid and semi arid region of India during rabi season , its commonly known as " Meethi" its seeds and leaves are common ingredient in dishes of Indian subcontinents ,and have been used as a culinary ingredient since ancient times [Debaggio Thomas et al 2009] fenugreek is believed have been into cultivation in the near east . it is uncertain which wild strains of the genus Trigonella gave rise to domesticated fenugreek .India is a major producer ,with fenugreek production in India derived from numerous states . Rajasthan accounts for over 80% of India's output [V.A Pathasaraty et al] fenugreek seeds are rich source of fibres, protein, vitamin B and dietary minerals In 100gm amount of fenugreek seeds provides 1,350kilojoule (323kcal)of food energy and contain 9%water,58%carbohydrats,23%protein and 6%fat, with calcium 40%of daily value . Fenugreek is used in traditional medicine to promote digestion, induce labour, increase Breast feeding milk supplying nursing mother and reduced blood suger level in diabetes [Bazzano et.al 2016] fenugreek is used for Eritean and Ethiopian cuisine the word of fenugreek in Amharic and the seeds is used in Ethiopia as a natural herbal medicine in the treatment of diabetes [Zenhun shenkute et al.2009]

Seeds play an important role for the production of crops ,which are carries of some important seed born disease which cause losses in yields seed mycoflora affects the germination (Tamuli and Boruah 2001)

In this investigation was carried out to identify seed mycoflora of fenugreek seeds

Material and Methods:

Collection of Seeds:

Seeds of *Trigonella foenum-graecum L* were collected from different local market, retailer shop and godowns of Aurangabad district they were mixed and then preserved in a room temperature during the studies .

Isolation and Identification of Seed Born Fungi:

The mycoflora of fenugreek seeds were isolated by Blotter paper method and Agar plate method as recommended by International Seed Health Testing Association ISTA 1996 .

Agar Plate Method: Presterilized petriplates were taken pour with Glucose Nitrate Agar medium (GNA).After cooling 30 seeds per plate to be studied were equidistantly placed .The plates were incubated at 25+_2°c.After 7 days seeds were examined under microscope by preparing slides.

Standard blotter paper method: A blotter paper of 8.5 cm diameter were soaked with sterile distilled water and placed in petri plates 10-15 seeds were placed equidistantly on moist blotter paper . The plates were incubated at 25+_2°c After 7 days seeds were examined under microscope by preparing slides.

Table: Seed mycoflora of fenugreek seeds by Agar plate (A) and Blotter paper (B)

Sr.no	Associated seed mycoflora	Agar plate method	Standard Blotter paper
1	*Aspergillus flavus*	+	-
2	*Aspergillus nigar*	+	+
3	*Alternaria alternate*	+	-
4	*Fusarium solani*	-	+
5	*Penicillium italicum*	+	+
6	*Rhizopus stolonifer*	-	-
7.	Mucor spp.	+	+

Present - Absent -

Result and Discussion:

The study reveals the isolation of fungi from the seeds of fenugreek collected from Aurangabad district Maharashtra . Six fungal species viz. *Alternaria alternate, Aspergillus flavus, Aspergillus niger , Fusarium solani, penicillium italicum, and Rhizopus*

Dr. Baig Mumtaz
Ass. Prof. Botany
Rafiq Zakaria College
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Naykhanda, Jubilee Park,
AURANGABAD. (M.S.)

Effect of substrates on Biochemicals of *Hipsizygous Ulmaris* Pleurotus ostreatus spp.

Shaikh Saheba Mateen, Baig Mumtaz

Department of Botany,
Dr. Babasaheb Ambedkar Marathwada University Aurangabad. (MH INDIA)

Dr. Rafiq Zakaria College for Women Aurangabad

Abstract: **In this present investigation we have taken Hipsizygous .Hipsizygous species are cultivated around the world because of their short life cycle, rich inmineral content and medicinal compounds. This Mushroom has gained importance only in the last decade. It is being cultivated in Many countries in the subtropical and temperate zones. The earliest record of Pleurotus cultivation in India is of Bano and Srivastava [1962]. The different species of Pleurotus grow within a temperature range 15 to 30°C. Pleurotus spp. Can be grown on agriculture waste materials . The study was conducted to evaluate various biochemical's of mushroom from the dried powder of *Hipsizygous Ulmaris*, which were harvested from different substrates such as Maize, Wheat straw, Paddy straw, Soybeanand Blackgram mix, all Substrates Mixed, Sugarcane Baggasse, Jowar substrates. The maximum amount of protein was observed in paddy straw, whereas, the minimum amount of protein was observed in wheat straw.**

Keywords: **Biochemicals, Oyster Mushroom, Substrates.**

Introduction:

The word mushroom actually refers to the fungi that is seen with the naked eyes and that is pickedby other Organisms and sometimes used as food. In a broad sense, Mushroom is a macro fungus with a distinctive fruiting body, which can be either epigeous or hypogenous and large enough tobe seen with naked eye and to be picked by hand (Chang and Mills, 1992). Mushrooms are not only basidiomycetes, they can also be ascomycetes, grow underground, have a non-fleshy textureand could be inedible. All The poisonous and the non-poisonous fungi that can be seen with the naked eye and can be picked with the hand are described as mushrooms. Nutritional value of mushrooms lies between that of meat and vegetables. The rich source of proteins, vitamins and minerals and low in fat content (2-8%) unique chemicals constitution of mushrooms makes them low calorie food 8 and choice diet for those suffering from hypertension, arthrosclerosis, diabetes,obesity etc. (Subramanian, 1995). Mushrooms normally contain 19-35% protein. Mushroom proteins contain all the essential amino acids and are especially rich in lysine and leucine, which are lacking in most staple cereal food. The low total fat content, and High proportion of polyunsaturated fatty acids (72-85%) relative to total fatty acids, is considered a significant contribution to the health value to mushrooms. The widespread malnutrition coupled with increasing protein requirement in the Country has necessitated the search for new and alternative means to meet the protein requirement of the country and one of the alternative ways is the production of mushroom which is noted for its high protein content.

Substrates:

Agricultural wastes are rich in various types of nutrients and their disposal is difficult to manage as excess of nutrients in them can cause leaching left in the field, as a compost. Mostly they are disposed of by means of incineration which causes pollution. Hence, there is always a high demandfor discovering an agricultural waste management method which is cost effective and contributesless to environmental pollution. Mushroom cultivation on agricultural wastes fulfils these requirements. Agricultural wastes are rich in lignin cellulosic components which are difficult to break down, but can effectively be done mushroom cultivation. Mushrooms are fleshy fungi, sporebearing fruiting bodies which are produced above ground on soil. They often refer to the fruiting body of the gill fungi, which do not contain chlorophyll like green plants and as a result cannot manufacture food by their own. They are very nutritious products that can be generated from lignocellulose waste materials. The bioconversion of agricultural wastes into a value added productis a good means of their use. The property of edible mushroom fungi to convert complex organic compounds into simpler ones is used to transform the useless agricultural waste into valuable products.

Materials and methods:

Oyster Mushroom Cultivation Process:

The process for the cultivation of oyster mushrooms is simple because its cultivation does not lenditself to complex scientific procedures. Farmers can cultivate the fungi with less supervision. Thecultivation of the fungi relies on the interaction of a particular set of physical, chemical and biological factors (Rangel et al., 2006). The important areas to note in the cultivation of oyster mushrooms in order to balance the three factors include substrate selection, composting, sterilization of substrates, bagging of substrate, spawning / inoculation, incubation, fruiting. The agro-climatic conditions in our country especially in the North Indian States are conducive for mushroom cultivation when the Temperature is 15-30° and relative humidity is 70-8-%. The production decreases during peak periods of winter. Cultivation of Oyster Mushroom requires:

- Wooden racks
- Polythene bags (polypropylene bags)
- Plastic bags
- Pleurotus spawn (Hipsizygous Ulmaris)

Dr. Baig Mumtaz
Botany
College

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

IJARSCT

ISSN (Online) 2581-9429

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 9, Issue 1, September 2021

IJARSCT
Impact Factor: 5.731

Rafiq Zakaria College for Women Aurangabad

Traditional Utilities of Plants for Cough, Cold, Fever and Phlegmatic Diseases by Muslims Community of Malegaon Region of Nasik District

Shaikh Tausif[1] and Baig Mumtaz[2]

Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Abstract: *The present study of Traditional Utilities of Plants for cough, Cold, Fever and Phlegmatic disease by Muslim Community of Malegaon region contains 26 species belongs to 26 Genera and 20 families. Seventy five percent(75 %) Peoples of Malegaon city is literate in languages Urdu, Arabic and Persian because knowing of these languages they have great knowledge of the Geeko-Arabic medicine and locally called Unani Medicine. These remedies are effective and currently in practice, root stem, leaves, flowers, fruit, seeds and bark of the stem is used to make syrup, pills and powder form. These medicines are totally natural, herbal and cost effective with no any major side effects.*

Keywords: Unani, Temperament, Traditional Utilities

I. Introduction

Malegaon city is densely populated city with near about twelve lakh people live in society. The seventy nine percent (79 %) peoples of total population is belongs to Islam religion and these peoples have near about fifty eight percent (58 %) literacy rate and from this near about seventy five percent (75 %) people completed their education in Urdu language peoples of Malegaon have great knowledge of Arabian medicine locally called Unani medicine.

One side settlement of single community is limits to introduce and express of knowledge of diffent traditions like some remedies, medicines and culture. Now a days we are facing the challenge to fighting against many diseases, with the help of this research work we tried to collect some data about the traditional utilities of plants for cough, Cold, Fever and Phlegmatic disease by Muslims of Malegaon city for the world fighting with these type of diseases.

II. Material and Methods

Survey: Interviews of Hakeem, old mans and woman's. BUMS doctors were taken for gathering truthful information on traditional utilities of plants for cough, Cold, Fever and Phlegmatic disease. With the course of survey of medicine in Malegaon tehsil the information was collected. The medicinal plants were taxonomically identified using different floras viz. Flora of Lakshminarasimhan and Prasanna (2001), Yadav & Sardesai (2002), photographs of plants crude drugs used were taken. Samples of medicines were collected

III. Observation

3.1 Botanical name: *Artemisia absinthium* L.
Unani name / local name: Afsanteen
Common name: Majri / Karmala
English called Wormwood
Family: Asteraceae (Compositae)
Medicinal Part of the Plant: Whole plant is used
Form of medicine: Plant Extract
Temperament: Hot and dry 2°

Copyright to IJARSCT
www.ijarsct.co.in

DOI: 10.48175/IJARSCT-1934

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College for Women, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-2021

© 2021 IJCRT | Volume 9, Issue 1 January 2021 | ISSN

Dr. Rafiq Zakaria College for Women

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)
An International Open Access, Peer-reviewed, Refereed Journal

Study of Bacteria colony on agar surface as Fractal

S.Q. Chishty[1] Mohd Khizar[2]

1: Dept. of Physics Dr. Rafiq Zakaria college for women Aurangabad. M.S. India

2: Dept. of Physics. Kohinoor college of arts Science and commerce Khultabad M.S. India

Abstract:

In the present study fractals are grown using the bacteria colony. For this purpose cell is designed and the growth processes are studied using this cell. Different colonies are studied at different temperatures. There are large number of parameters which control the growth process. In the on going process images are photographed with the help of video camera. Fractal dimensions of these shapes are calculated using computerized box counting method. The results obtained are compared and discussed. it was seen that the growth satisfy the Laplace equation.

Key words: Bacteria colony, fractals, fractal dimensions

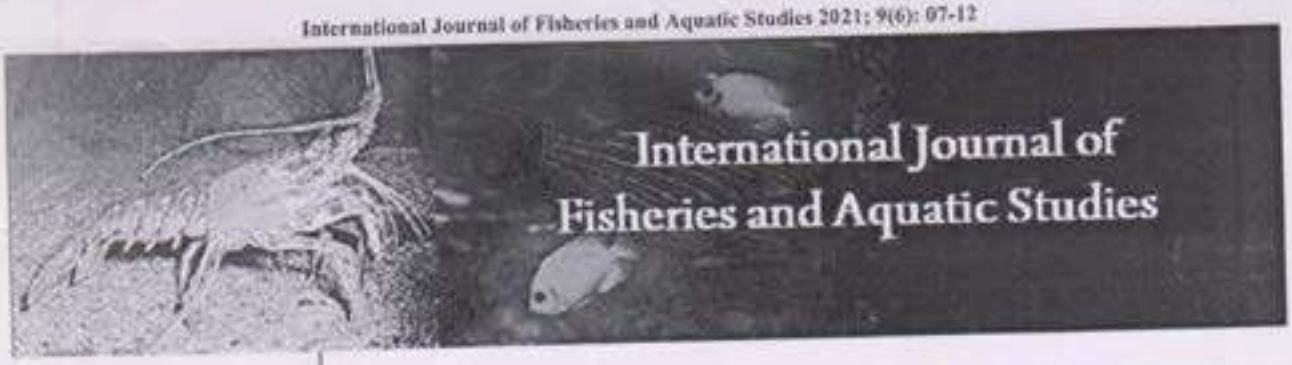
Introduction :

The study of Fractal growth is one of the physical phenomena observed in many growth experiment. For example dielectric breakdown, bacteria colonies, aggregation models etc. All these process are governed by diffusion Limited aggregation (DLA) [1,2] , the structures so developed are branched and self similar dendrites are with increasing and multiple branches. These shapes are interested to study due to their particular nature. Dimensions of these shapes are fractured and known as fractal dimensions.

There exists a great variety of possible patterns which can be classified based upon their growth mechanism and geometrical properties [3]. The patterns which generally appear are divided into two groups depending on the stability . It intended to demonstrate that a tip can be either unstable (a) and go through repeated splitting shown in figure 1 and lead to dendritic growth. Unstable tips results in disordered structures with no apparent symmetry. If tips are stable in the sense that small perturbations around them stationary state decay relatively quickly, the obtained pattern have a symmetry of varying degree[4] Figure 1show most commonly occurring possibilities. In some cases the interface bounds a region which is homogeneous on a length scale comparable to the size of the object [5-6] While under different conditions the

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. S. Q. Chishty
HEAD
Department of Physics
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park
AURANGABAD. (M.S.)



E-ISSN: 2347-5129
P-ISSN: 2394-0506
(ICV-Poland) Impact Value: 5.62
(GIF) Impact Factor: 0.549
IJFAS 2021; 9(6): 07-12
© 2021 IJFAS
www.fisheriesjournal.com
Received: 09-09-2021
Accepted: 20-10-2021

Arati Tidame
Department of Zoology, LVH Panchavati College, Nashik, Maharashtra, India

Vikram Kakulte
Department of Zoology, K.T.H.M. College, Nashik, Maharashtra, India

Shaikh Yasmeen
Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Savita Tidame
Department of Zoology, K.T.H.M. College, Nashik, Maharashtra, India

Jyoti Gangurde
Department of Zoology, K.T.H.M. College, Nashik, Maharashtra, India

Corresponding Author:
Arati Tidame
Department of Zoology, LVH Panchavati College, Nashik, Maharashtra, India

An assessment of the biochemical composition of some fishes

Arati Tidame, Vikram Kakulte, Shaikh Yasmeen, Savita Tidame and Jyoti Gangurde

Abstract
In the present study, Rohu, Mrigala, silver pomfret, pomfret were selected for carrying out estimation of protein and carbohydrate from their body tissue. Authors reported the amount of protein in rohu, Mrigala, silver pomfret, pomfret was 9.406 mg/g, 6.901 mg/g, 8.868 mg/g and in 6.428 mg/g respectively; the carbohydrate content as 0.258 mg/g in Rohu, 3.151mg/g in Mrigala, 0.0097 mg/g in pomfret and 1.69 mg/g in silver pomfret. On the basis of the present study, it can be concluded that, roha is rich in protein followed by silver pomfret whereas; mrigal contains more carbohydrates as compared to remaining fishes under study.

Keywords: Estimation, protein, carbohydrates, fishes

Introduction
Fishes are rich in having good nutritive value, serving as a food for human being which is a most important group of vertebrates (Prakash and Verma, 2018; Kumar *et al.*, 2020) [7, 8]. There are both micro and macro nutrients present in fish. The macro nutrients are proteins, fats, and carbohydrate, whereas, the micro nutrients like vitamins and minerals are crucial components (Mohanty, 2015) [9]. They are having a high nutritional value and also the medicinal, industrial, aesthetics and religious values. In all over the world, fishes providing a great supplement for diversified and nutritious diet. Consumption of fishes as a food has several health and nutritional profits. It provides low calorie meal but is a good source of high quality proteins. Protein of fishes are highly digestible with well balance amino acids, which keeps us away from various diseases and disorders (Howard and Wylie, 2002) [6]. Many tropical countries suffer from nutritional deficiencies due to a lack of sufficient protein, according to Eyo (2001) [5].
According to Chilma (2006) [4], fish is generally a good source of protein, containing 18-20% (Chilma). Protein and fat are the two most important nutrients found in fish, and their levels tell us how well the organism is able to meet its nutritional needs. Fish have varying chemical compositions depending on the age, sex, environment and season with protein levels ranging from 16-21%, lipids 0.1-25%, ash 0.4-1%, moisture 60-81% and even high moisture content of 96% (Muraleedharan *et. al.*, 1996) [10]. Carbohydrate is a large group of organic compound occurring in foods and living tissues and including sugars, starch, glucose and cellulose. They contain hydrogen and oxygen in the ratio as water [2, 11] and typically can be broken down to release energy in the body. Carbohydrate and protein are the chief nutrients of the animals. They have a variety of functions. The carbohydrate supplies energy in the form of ATP molecules, which are formed during TCA cycle. Even though protein is an important source of energy in fish but stress conditions causes rapid depletion of stored carbohydrate (Verma and Prakash, 2019) [13]. In the present study Rohu, Mrigal, Pomfret, Silver Pomfret were analyzed for their carbohydrate and protein content. So as to know the nutritional status of these fishes we analyzed these fishes.

Materials and methods
In the present study Rohu, Mrigal, Pomfret and Silver Pomfret were analyzed for their protein and carbohydrate content. To know the nutritional status of these fishes we analyzed them. For the estimation of protein and carbohydrate fishes were collected from local fish market of Pathardiphata, Nashik (M.S.) and brought them to laboratory one at a time.1g general body tissue was taken and homogenized then homogenized sample was filtered through blotting paper (image 1 and 2). The homogenized filtrate was used for further estimation.

Dr. Rafiq Zakaria College for Women Aurangabad

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nawkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2021-2022

GESA
GLOCAL ENVIRONMENT & SOCIAL ASSOCIATION

International Journal of Biological Innovations
http: //ijbi.org.in | http://www.gesa.org.in/journals.php
Doi: https://doi.org/10.46505/IJBI.2021.3218
IJBI 3(2): 367-372 (2021)
E-ISSN: 2582-1032

EFFECT OF CADMIUM CHLORIDE ON GLYCOGEN LEVEL IN SOME ORGANS OF FRESHWATER BIVALVE, *LAMELLIDENS MARGINALIS*

Shaikh Yasmeen[1]*, T. S. Pathan[2] and R.T. Pawar[3]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India
[2]Department of Zoology, Kalikadevi ACS College, Shirur (Ka)- Dist. Beed (M.S.), India
[3]Department of Zoology, Sunderrao Solanke Mahavidyalaya, Majalgaon Dist. Beed (M.S.), India

*Corresponding author: shaikhyasmeen7862@gmail.com

Dr. Rafiq Zakaria College for Women Aurangabad

Article Info:
Research Article
Received
05.09.2021
Reviewed
25.09.2021
Accepted
03.10.2021

Abstract: The aim of the present study was to assess the glycogen content in different body parts *i.e.* mantle, gill, gonad, hepatopancreas, siphon, foot, anterior adductor muscle and posterior adductor muscle of freshwater bivalve mussel, *Lamellidens marginalis* exposed to lethal concentrations of cadmium chloride after 96 hrs acute toxicity of exposure. The results showed that glycogen content was significantly disturbed in all the body parts of *Lamellidens marginalis* studied after exposure to cadmium chloride (LC0 & LC50). The disturbance in the glycogen level is one of the outstanding biochemical lesions due to the action of cadmium. There is a significant decrease in glycogen profiles in different body parts after exposure to lethal concentration of cadmium under stress conditions. This might be due to increase in glycogenolysis by increase in phosphorylase enzyme activity and elevation of succinate and pyruvate dehydrogenase leading to anaerobic metabolism during anoxic stress conditions caused by toxicant. Hence, glycogen content as biomarker of cadmium stress in bivalve mollusks can be used.

Keywords: Aquatic environment, Cadmium, Glycogen, *Lamellidens marginalis*, Pollutants, Toxicity.

INTRODUCTION

Most information about the effects of environmental pollutants on aquatic animals has been obtained from mortality studies. Often very little is known about damage to different internal organs or about disturbed physiological and biochemical processes within an organism following exposure to environmental poisons. Consequently knowledge about the mode of action of toxicants and causes of death in poisoned aquatic animals is often lacking. A better understanding of these mechanisms is necessary to predict the potential harmfulness of various chemicals to the environment. Since different environment pollutants are likely to affect biological systems in different ways according to their respective chemical properties (Kumar *et al.*, 2019; Prakash and Verma, 2021), the sum of physiological changes created by a particular pollutant is likely to be characteristic of that pollutant. Thus, by observing the effects of pollutants on a set of physiological parameters (Kalal *et al.*, 2021), it might be possible to establish specific responses of that pollutant, and may take it possible to identify a pollutant on the basis of its physiological effect pattern.

Cadmium is a ubiquitous, non essential element which possesses high toxicity to both human and aquatic organisms (Yasmeen, 2019). It is classified

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2021-2022

www.nesa-india.org • E-mail: nesapublications@gmail.com
International Journal on Biological Sciences



International Journal on Biological Sciences 12 (2), July-December 2021, pp 61-64
ISSN No.: 0976-4518
https://doi.org/10.53390/ijbs.v12i2.2

ANTIMICROBIAL ACTIVITY OF HONEY AND GINGER (*ZINGIBER OFFICINALE*) ON *ESCHERICIA COLI*

Komal Jagzap[1]* and Shaikh Yasmeen[2]

[1]Department of Zoology, Loknete Vynkatrao Hiray Arts, Science and Commerce College, Nashik (M.S.)
[2]Department of Zoology, Dr. Rafiq Zakaria College for woman Aurangabad (M.S.)

Dr. Rafiq Zakaria College for Women Aurangabad

Review Paper

Received: **01.10.2021** Revised: **25.10.2021** Accepted: **05.11.2021**

ABSTRACT

The development of new antimicrobial agents against resistant pathogens is increasing interest. This work aims to evaluate the antimicrobial potential of ethanolic and water extracts of Honey and Ginger (*Zingiber officinale*) on *E.coli*. Agar well diffusion method has been used to determine the antimicrobial activities and minimum inhibitory concentrations (MIC) of this two extracts against pathogenic microorganism. The antimicrobial effects of the plant extracts are sufficient in a way to cater the healing effect. Those plants extracts which proved to be potentially effective can be used as natural opportunity preventives to manipulate meals poisoning illness and keep meals stuff averting healthy risk of chemically antimicrobial agent application. The present work shown that *E.coli* were susceptible to crude extract of ginger and honey in vitro which means the honey and ginger has antibacterial property it's far hereby encouraged that similarity studies be completed in the direction of isolating, performing and standardizing the activity antibacterial elements the both additionally more work should be done to determine pharmacokinetics, pharmacodynamics and possible toxicity of the pharmaco active components.

Keywords: Honey, Ginger, Antimicrobial activity, Medicinal property.

INTRODUCTION

Antibiotics are very important for lowering the prevalence of bacterial infections globally, but with the increasing number of resistant pathogens, the effectiveness of the antibiotics has been reduced. Several research groups have focused their efforts on finding alternative antimicrobial agents, which leads to re-evaluation of the therapeutic use of drugs such as ancient plants, products and their extracts. The use of traditional medicine to treat infection has been practiced since the origin of mankind, and honey produced by *Apis mellifera* (*A. mellifera*) is one of the oldest traditional medicines considered to be important in the treatment of several human ailments. Nature has been a source of medicinal agents for thousands of years and a large number of modern drugs have beeo isolated from natural sources. Herbal medicine is the oldest known healthcare system known to mankind. Currently, many researchers have reported the antibacterial activity of honey and found that natural unheated honey has some broad-spectrum antibacterial activity when tested against pathogenic bacteria, oral bacteria as well as food spoilage bacteria in most ancient cultures honey have been used flor both nutritional and medicinal purposes. Food borne disease have always been a major concern in both developing and developed countries.

Campylobacter jejuni, *Staphylococcus aureus*, *Salmonella* (over 1600 types), *Escherichia coli* O157:H7, *Streptococci*, etc. are some of the major bacterial species that causes food borne diseases. *Eshcherichia coli*, *Staphylococcus aureus* and *Pseudomonas* spp. are the true bacteria belong to Kingdom Eubacteria as per classification of six kingdom system (Verma, 2017; Verma and Prakash, 2020). *Staphylococcus aureus* is a Gram-positive, round shaped

*Corresponding author: komaljagzap1oct@gmail.com

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2021-2022

www.nesa-india.org • E-mail: nesapublications@gmail.com
International Journal on Biological Sciences



International Journal on Biological Sciences 12 (1), January-June 2021, pp 52-55
https://doi.org/10.53390/ijbs.v12.i1.6
ISSN No.: 0976-4518

STUDY ON THE LIPID CONTENT OF SELECTED FISHES (M.S.), INDIA

Arati Tidame[1], Shaikh Yasmeen[2], Vikram Kakulte[3], Jyoti Gangurde[3] and Savita Tidame[1]*

[1]Department of Zoology, LVH Panchavati College, Nashik (MS)
[2]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad MS)
[3]Department of Zoology, K.T.H.M. College, Nashik (MS)



Research Paper

Received: **25.05.2021** Revised: **15.06.2021** Accepted: **22.06.2021**

ABSTRACT

An estimation of lipid content in selected fishes namely rohu, mrigala, silver pomfret and pomfret was carried out during year 2018-2019. In the present study, authors found the amount of lipid content in rohu was 0.760 mg/, in mrigala 0.448 mg/g, in pomfret 0.753 mg/g and in silver pomfret 0.619 mg/g. On the basis of result obtained, it can be concluded that, rohu and pomfret contain more amount of lipids as compared to mrigala and silver pomfret.

Keywords: Estimation, Lipid, Fish.

INTRODUCTION

Fishes are exclusively aquatic animals with streamlined body. They have gills for respiration and lateral line sense organs (Verma and Prakash, 2020). They have a very rich nutritive value, providing food and establishing the food security to human beings (Verma, 2007; Kumar *et al.*, 2020). They have large amount of proteins and fats (Sujatha *et al.*, 2013; Syed *et al.*, 2020). They claimed that fishes are highly nutrient-dense food, containing high quality of minerals, vitamins and including vitamin A and D, magnesium and phosphorus. Consuming whole fish can prove beneficial as it has a higher protein-fat ratio than meat from goat, lamb, buffalo, and chicken (Steffen, 2006). A significant percentage of the lipid in fish consists of long chain polyunsaturated fatty acids (PUFA) including eicosapentaenoic acid (EPA) and docosahexanoic acid (DHA). In fishes, PUFAs are found in a form that is liquid and flows freely through the bloodstream. It is different from other fats or oils (Morales *et al.*, 2015). In humans, dietary intake of polyunsaturated fatty acids (PUFA) has been important for human nutritional, health, and disease prevention (Sujita *et al.*, 2019). Omega-3 fatty acids commonly found in seafood have varied health benefits (Prakash and Verma, 2019, 2020). Reduction of myocardial infarction has been suggested by Bucher *et al.* (2002). As living organisms occupy the environment, lipids and their components play an integral role in their biochemical adaptations. Biochemical processes and life development rely heavily on these lipids. There is a range of functions that lipids play in cellular metabolism (Svetlana *et al.*, 2013). Due to its widespread existence in the body, cholesterol is perhaps the well-publicized lipid in nature. Significant losses may occur during periods of high cholesterol levels in seasonal differences (Spinelli and Dassow, 1982; Prakash and Verma, 2018). Even though protein is an important source of energy in fishes but stress conditions causes rapid depletion of stored carbohydrate (Verma and Prakash, 2019; Prakash, 2020).

MATERIALS AND METHODS

In the present study Rohu, Mrigal, Pomfret and Silver pomfret were analyzed for their lipid content (Photo plate 2). For the estimation of lipid fishes were collected from local fish market of Pathardi phata, Nashik (M.S.) and brought them to laboratory one at a time. 1 g lateral body

*Corresponding author: savita.tidame@gmail.com

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2021-2022

International Journal of Entomology Research
www.entomologyjournals.com
ISSN: 2455-4758
Received: 05-03-2022, Accepted: 22-03-2022, Published: 06-04-2022
Volume 7, Issue 4, 2022, Page No. 39-44

Effective role of aloe Vera as a feed additive and controlling diseases in broiler chicken diets

Keshamma E[1], Sumia Fatima[2]

[1] Department of Biochemistry, Maharani Cluster University, Bangalore, Karnataka, India
[2] Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Dr. Rafiq Zakaria College for Women Aurangabad

Abstract
There has been a paradigm shift in the use of plant-derived feed additives in the diets of poultry, specifically broiler chicken, replacing the traditional use of antibiotic growth promoters (AGPs). The use of natural alternatives such as photogenic products has gained value in recent years. They also have beneficial effects as growth promoters, immunity boosters, and therapeutic agents for various diseases. Aloe vera is a renowned medicinal plant known for its industrial and therapeutic use owing to its properties such as antimicrobial, anti-inflammatory, anti-tumor, anti-oxidant, immuno-modulator, wound healing, and antiprotozoal agent. Aloe vera has been increasingly used as a natural component of broiler diets as of the last few decades. According to recent studies, Aloe vera was found to enhance the immune system and growth performance in broilers, and also serves as a good alternative to anticoccidials and AGPs. Various formulations are available for use in broiler diets, including powder, gel, aqueous and ethanolic extracts. This review provides deep insight into the effective role of Aloe vera as a feed additive and its impact on growth improvement, immunity enhancement, maintenance of microflora, and control of diseases like coccidiosis.

Keywords: aloe Vera, feed additive, controlling diseases, chicken diets

Introduction

Broiler farming aims to achieve faster growth, the higher conversion efficiency of feed, and a more livable product. A lot of broiler production depends on economics, as feed is one of the most important factors affecting productivity and profitability. Feed additives and feed supplements have been introduced to attain a higher net return and to minimize high feed expenditure [1].

To enhance feed conversion efficiency and increase the body size in poultry, growth promoters are added to the diet and can be divided into non-antibiotic growth promoters (NAGP) or antibiotic growth promoters (AGP). In the past, antibiotics played a significant role in growth promotion. Poultry growth and feed conversion ratio have been improved using antibiotic growth promoters. Treatment of poultry with antibiotics, on the other hand, leaves residues in poultry products and causes bacteria to develop resistance to the treatment [2]. Antibiotics are prohibited in many countries because they pose such a threat to human health. The use of NAGP in poultry production, on the other hand, is generally considered to be a better alternative to AGP. NAGP has a number of advantages over AGP, including the fact that they do not carry any potential risk of harmful traces in the meat or the development of bacterial resistance. A number of benefits may be derived from NAGP addition to poultry feeds, including increased gut health, improved digestion, and feed efficiency. Organic acids, prebiotics, probiotics, phytogenics, enzymes, nutrition, and immune stimulators are the most common forms of NAGPs. However, phytogenics are gaining more popularity [3].

The phytogenic products come from plants or herbs and may exhibit antioxidant, antimicrobial, antiviral, antifungal, or sedative effects. Compounds present in them are known to increase palatability and stimulate the digestion of feeds since they act as bioactive agents. In addition, phytogenics impact gut bacteria in a profound way. It has been shown that adding herbs to poultry products, as alternatives to antibiotics, affects the microbiome either directly or indirectly [4]. It has been demonstrated that herbal extracts have antimicrobial properties that can enhance the population of intestinal microflora and increase the digestive health of birds by reducing the number of pathogenic bacteria. Modified microbe populations in the intestine will also alter the morphology of the intestine. It is of great importance that poultry has a healthy digestive system to ensure that they are performing at their best and consuming a lower proportion of feed. Herbs also possess other properties such as antioxidants, antivirals, and immunomodulators that play an eminent role in body function and digestion [5]. Aloe vera features a great therapeutic potential. There are more than 70 biologically active compounds in Aloe vera, widely cultivated in China, Egypt, and India. Aloe vera has been found to possess antibacterial properties, antiseptic properties, anti-inflammatory properties, and immune-modulating abilities. Several studies have demonstrated Aloe vera's antioxidant and anti-cancer properties as well. Researchers have also reported that Aloe vera has antimutagenic and anti-hypersensitivity effects [6, 7].

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

International Journal of Botany Studies
www.botanyjournals.com
ISSN: 2455-541X
Received: 12-05-2021, Accepted: 27-05-2021, Published: 11-06-2021
Volume 6, Issue 3, 2021, Page No. 611-615

Effect of different solid media on the growth of *Colletotrichum gloeosporioides* (PENZ.) PENZ. & SACC. Causing anthracnose disease of mango (*Mangifera indica* L.)

Priya Lokare, Sumia Fatima
Pesticides and Plant Protection Research Laboratory, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Abstract
Mango anthracnose disease is one of the major fungal diseases of mango.
In the present study, the rate of growth of Anthracnose (*C. gloeosporioides*) has been compared in various solid culture media types *viz.*, PDA (Potato Dextrose Agar), (WA) Water agar, (MLE) Mango leaf extract agar, (CDA) Czapek's Dox agar, (MEA) Malt Extract Agar etc. Among all the solid media tested, maximum mycelial growth was observed in Potato Dextrose Agar Medium (89mm) and in Czapek's Dox Agar Medium (89 mm), which was remarkably greater than the other culture media. It was followed by Sabouraud's Agar Medium (83mm), Mango Leaf Extract Agar Medium (83mm) and Asthana & Hawker's Media (85mm). All growth was recorded at room temperature (24°C). Czapek's Dox Agar Medium and Potato Dextrose Agar Medium were found to be most suitable medium for growth. Rest of the culture media recorded colony diameter in the range of 83mm (Sabouraud's Agar Medium), 83mm (Mango Leaf Extract Medium), 75mm (Malt Extract Agar), 85mm (Asthana and Hawker's Medium), 78mm (Corn Meal Agar), 82mm (V8 Juice Agar Medium), and lowest growth 84mm on (Water Agar Medium).

Keywords: *colletotrichum gloeosporioides*, anthracnose disease of mango, colony diameter, *mangifera indica* L., solid media

Introduction
Mango (*Mangifera indica* L.) Commonly called as king of fruits, is the most important tropical and subtropical fruit crop (Suyiprathap, Ekabote, Narayanaswami, Ravindra & Adivappar Nagarajappa, 2018) [8]. It belongs to the flowering plant family Anacardiaceae. It is indigenous to India hence called as *Mangifera indica* L. which shows its Indian origin. Anthracnose caused by *Colletotrichum gloeosporioides* is one of the most threatened disease causing huge losses in nursery condition. The symptoms of anthracnose will persist till flowering and fruiting period and results in the huge economic losses. In the recent years the disease becomes severe in nursery plants, on young leaves, symptoms appear as irregular black necrotic spots on both sides. Pathogen present on the infected leaves, twig and fallen leaves serves as the major source of infection and spreads by rain splashed conidia. Sunken, dark coloured, necrotic lesions were found. As disease progresses, small, sunken lesions coalesced to form large, necrotic patches (Islam et. al., 2015) [4]. The fungus derive food and energy from the substrate upon which they grow in nature, in order to culture the fungus in the laboratory, there is no universal substrate or artificial medium upon which all the fungi can grow and reproduce (Shivakumar, Palaiah, Raja & Mallesh, 2016) [9].
Therefore studies were conducted in different suitable media to identify surface medium for the growth of *C. gloeosporioides*.

Material and Methods
Collection of the infected leaves- Infected mango leaves were collected from the Abhijeet Jagtap Nursery, Vilad Ghat, located in 'an Ahmednagar district, Maharashtra. Infected leaves collected in air-tight plastic bags and brought into the Pesticides and Plant Protection Research Laboratory, Dr. Rafiq Zakaria College for Women, Aurangabad-431001, Maharashtra, India and kept in the refrigerator at 5°C for further study.

Isolation of *Colletotrichum gloeosporioides*-*C. gloeosporioides* isolate (AJN10), isolated from the mango leaves collected from the Abhijeet Jagtap Nursery, Vilad Ghat, Ahmednagar district, Maharashtra was used in this study. This isolate was isolated from the infected mango leaves showing particularly anthracnose symptoms by tissue segment method on Czapek's Dox Agar Medium (CDA). Small portion of leaves were cut into the small pieces, in such a way that it contained both diseased and healthy portions and these pieces were surface sterilized in 0.1 per cent Mercuric Chloride ($HgCl_2$) for 20 seconds followed by 4 times washing in sterilized distilled water. The small pieces of leaves were further transferred to sterile blotting paper. The dried pieces thereafter transferred to Czapek's Dox Agar medium (CDA) under aseptic conditions. The petri plates were incubated at 24 °C for 5 days for the growth of the fungus. The developed fungal colonies were purified by single spore isolation method. The pathogen was identified as *Colletotrichum gloeosporioides* (Penz.) Penz. & Sacc. Based on its mycelial and conidial characteristics according to (Darshan, Praveena, Ankegowda, & Biju, 2014; Sampath Kumar, Eswara Reddy, N. P. & Hariprasad Reddy, 2008) [3, 7]. The stock culture was maintained on CDA medium at 5°C and subcultured after every 20 days. Pathogenicity of these isolates was also confirmed suggested by (Jayasinghe and Fernando, 2009) [6].

Preparation of different media and inoculation
The fungal pathogen (*C. gloeosporioides*) was inoculated on various types of solid media to identify the most suitable media for its growth and Maintainance. In this experiment 9 media *viz.*, Potato Dextrose Agar (PDA), Czapek's Dox Agar (CDA), Malt Extract Agar (MEA), Water Agar (WA),

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Aurangabad (M.S.)

International Journal of Botany Studies
www.botanyjournals.com
ISSN: 2455-541X
Received: 03-11-2021, Accepted: 19-11-2021, Published: 04-12-2021
Volume 6, Issue 6, 2021, Page No. 741-744

Bio efficacy of plants extract against the growth of *Colletotrichum gloeosporioides* (Penz.) Penz. and sacc. one of the major plant pathogens causing anthracnose disease of plants

Keshamma E[1], Anil Kumar[2], Priya Lokare[3], Sumia Fatima[3], Laxmi Kirana Pallathadka[4], Manoharmayum Dolpriya Devi[5]

[1] Assistant Professor, Department of Biochemistry, Maharani Cluster University, Bangalore, Karnataka, India
[2] Department of Botany, DDU Gorakhpur University, Gorakhpur, Uttar Pradesh, India
[3] Pesticides and Plant Protection Research Laboratory, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India
[4] Manipur International University, Imphal, Manipur, India
[5] Assistant Professor, Department of Agriculture, Koneru Lakshmaiah Education Foundation (KL deemed University), Guntur, Andhra Pradesh, India

Abstract
Anthracnose is widely found fungal infection in plants resulted from *C. gloeosporioides* which results in the germination of spores on plant leaves and twigs. The disease has resulted in huge damage to crops and fruit by presenting lesser yield or greater damage to plants. In the past few years certain fungicides and insecticides are used for fixing out the devastation caused by disease but these chemical-based fungicides also have certain drawbacks and after a certain time these plants also become resistant to them. So, there is a need to provide better alternative to all of these problems. The study mainly aims to review on the fact that how natural extracts of plants obtained from leaves, bubs and buds are helpful in the management of Anthracnose and also which compounds in plants extract are effective in this activity. The life cycle of the disease has been reviewed that it starts its propagation in summer and by which mechanism the anti-fungal compounds combat out disease.

Keywords: *Colletotrichum gloeosporioides*, pathogens, anthracnose disease

Introduction

Colletotrichum gloeosporioides is the most commonly occurring fungal pathogen and causes anthracnose diseases of most of the commercial fruit plants. Mostly it can cause the rust in the crops of tropical areas or forests. These plants include avocado, eggplant, cocoa, tomato, potato and papaya, most of citrus plants are hosts of this pathogen. In these plants, these pathogens have resulted in the crop lost in both pre and pro harvest conditions. It usually serves the role ass secondary invaders of plant tissues and thus serve as saprophyte (Deressa, Lemessa, & Wakjira, 2015) [9]. The most common symptoms in these plants involve black or grey lesions. In the case of appearance of this infection on inflorescence appears in form of blight, necrosis factors and certain streaks. The infectious plants will depict dark areas with the regular or irregular areas having narcotic factors. The discoloration of the stem also occurs in the infected plant. Cankers are also observed in the areas near infected areas. Acervuli are also observed in the fruits having sporulation of fungal specie. Which usually appears in the form of pink spot during periods of much higher humidity (Yanos, Hernandez, & Sabularse, 2021) [23]. A concentric pattern or sequence is observed in the spores of fungi and around the area of necrosis. The fungus most primarily colonize the area which covers the damaged tissues or tissues which are about to undergo senescence or death. The spread of these fungal spores occur via air current, rains, splash, irrigation and dew drops. The colonization of fungal specie occurs after deposition and their accumulation over various parts of younger leaves. Although the sexual spores are produced in lesser amount, but they are produced in the higher number and are susceptible to larger distant spore spread (Chaudhari & Gohel, 2016) [5].

Spores can result in the formation of dominant spore structure until they can cause a serious damage in the host cells. They are harvested at a very early level in fruits where ethylene further stimulates the colonization (Burgute, Magar, Patil, Navale, & Bajad, 2019) [3].

Further persistence of pathogens can be gained via infested weed crops, insects and latent loss of weeds which in turn are also helpful in prevention of loss of weed plants and pathogenic strain. Relative level of humidity is required by pathogens when moisture content is high, these alveolar structures produce spores. But this pattern or figure is not active during dry season (Sudha & Narendrappa, 2015) [24].

This can be diagnosed by:

- The appearance of black flecks in any area of plant usually fruit or stem.
- In addition to black spot a pink spot is also observed in the persisting area.
- Certain candida specie or spot also occur which are found to be 15um long and 7-8 um wide and are also in the form of hyaline, curved and avoid in shape.
- Certain Acervuli are also formed containing spores having epidermal candidas.
- In addition, certain type of molecular diagnostic techniques is available for proper diagnosis of disease.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2021-2022 161

IJARSCT

ISSN (Online) 2581-9429

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 11, Issue 1, November 2021

Impact Factor: 5.731

Assessment of Heavy Metal Pollution of Brahmaputra River in India: A Review

Aarati Bobade[1], Santosh Rankhamb[2] and Ayesha Durrani[3]

Department of Chemistry, Late Rikesh Warpudkar College, Sonpeth, Parbhani, MS, India[1]
Department of Zoology, Late Ramesh Warpudkar ACS College, Sonpeth, Parbhani, MS, India[2]
Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, MS, India[3]
santosh.rankhamb@gmail.com

Rafiq Zakaria College for Women Aurangabad

Abstract: *Heavy metals are toxic and carcinogenic. These metals are non-biodegradable and hazardous in nature. The present review focuses on investigating the toxicity of heavy metals in Brahmaputra river in Assam state. The concentration level of metals like a Fe, Cr, Pb, Cu and Cd observed in different season. This study revealed that different water station with respect to heavy metals concentration found beyond the recommended limit prescribed by BIS and WHO acceptable drinking water limit. For Iorn – (Tejpur 19.872 g/ L. Lead- (pandu) 21.480 µg/ L. Copper- (Tejpur) 54. 400 µg/ L. Chromium – (Tejpur) 53.100 µg/ L.*

Keyword: Brahmaputra, River, Heavy Metal, Water Quality, Assam

I. INTRODUCTION

Water is life and rivers are lifeline. Water is one of the fundamental necessities of individuals without water no life is possible to sustain on this planet earth hence it is termed as 'Natural liquid gold'.

Rivers are one of the humankind's most valuable resources. River has great potential of economic change (Patil et.al. 2013). Rivers have provided water for population and industries as a navigation route for material and commerce (Neal et.al. 2006).Population growth, urbanization (Muhammed et.al.2018), industrialization (Isai et.al. 2015), mining and economic activities put immense pressure on River system (Bora and Goswami 2017). Water quality get deteriorated (Zhaoshi et.al. 2017) because of human activities related to economic development (Unde and Turkunde 2018). Heavy metal contamination in rivet is one of the major quality issue now a days.

Water pollution caused by the heavy metal is the major environmental as well as socio-economic problem. In fast growing cities maintenance of water quality infrastructure did not increased along with urbanization and population growth(Karbassi et.al 2007; Akoto et.al. 2008; Ahmad et.al. 2010). Brahmaputra river is the largest tropical river in India. River lies between 88°11' to 96°57 East longitudes and 24°44' to 30°3' North latitude and extend over an area of of 1, 93,252 sq. km which is nearly 5.9 % of the total geographical area of the country. The river originates in the north from Kailash ranges of Himalaya. In India river flow for 916 km (Ministry of Jalshakti 2019) . The aim of this study is to assess the quality of water with respect to heavy metalsFe, Cu, Cr, Cd and Pb contaminant level in Brahmaputra river.

II. SOURCES

Heavy metal enter into river water by variety of sources, it can be either natural or anthropogenic (Wong et. al. 2003; Adaikpoh et.al.2005). Mineralogy and the weathering are also sources of heavy metal contamination at low concentration. Main anthropogenic sources of heavy metal contamination are untreated industrial effluents, indiscriminate use of heavy metal containing fertilizers and pesticides in agricultural fields (Ammann et.al. 2002; Nouri et.al.2006, 2008). In urban area river contaminated by heavy metal due to the practice of discharge of untreated domestic and small-scale Industrial effluents discharge into water body (Rim - Rukeh et. al. 2006; Khadse et. al. 2008,

Copyright to IJARSCT
www.ijarsct.co.in

DOI: 10.48175/568

Dr. Ayesha Durrani
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2021-2022 161

IJARSCT

ISSN (Online) 2581-9429

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 11, Issue 1, November 2021

Impact Factor: 5.731

Assessment of Heavy Metal Pollution of Brahmaputra River in India: A Review

Aarati Bobade[1], Santosh Rankhamb[2] and Ayesha Durrani[3]

Department of Chemistry, Late Ramesh Warpudkar College, Sonpeth, Parbhani, MS, India[1]

Department of Zoology, Late Ramesh Warpudkar ACS College, Sonpeth, Parbhani, MS, India[2]

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, MS, India[3]

santosh.rankhamb@gmail.com

Dr. Rafiq Zakaria College for Women * Aurangabad

Abstract: *Heavy metals are toxic and carcinogenic. These metals are non-biodegradable and hazardous in nature. The present review focuses on investigating the toxicity of heavy metals in Brahmaputra river in Assam state. The concentration level of metals like a Fe, Cr, Pb, Cu and Cd observed in different season. This study revealed that different water station with respect to heavy metals concentration found beyond the recommended limit prescribed by BIS and WHO acceptable drinking water limit. For Iorn - (Tejpur 19.872 g/ L. Lead- (pandu) 21.480 µg/ L. Copper- (Tejpur) 54. 400 µg/ L. Chromium – (Tejpur) 53.100 µg/ L.*

Keyword: Brahmaputra, River, Heavy Metal, Water Quality, Assam

I. Introduction

Water is life and rivers are lifeline. Water is one of the fundamental necessities of individuals without water no life is possible to sustain on this planet earth hence it is termed as 'Natural liquid gold'.

Rivers are one of the humankind's most valuable resources. River has great potential of economic change (Patil et.al. 2013). Rivers have provided water for population and industries as a navigation route for material and commerce (Neal et.al. 2006).Population growth, urbanization (Muhammed et.al.2018), industrialization (Isa; et.al. 2015), mining and economic activities put immense pressure on River system (Bora and Goswami 2017). Water quality get deteriorated (Zhaoshi et.al. 2017) because of human activities related to economic development (Unde and Turkunde 2018). Heavy metal contamination in river is one of the major quality issue now a days.

Water pollution caused by the heavy metal is the major environmental as well as socio-economic problem. In fast growing cities maintenance of water quality infrastructure did not increased along with urbanization and population growth(Karbassi et.al 2007; Akoto et.al. 2008; Ahmad et.al. 2010). Brahmaputra river is the largest tropical river in India. River lies between 88°11' to 96°57 East longitudes and 24°44' to 30°3' North latitude and extend over an area of of 1, 93,252 sq. km which is nearly 5.9 % of the total geographical area of the country. The river originates in the north from Kailash ranges of Himalaya. In India river flow for 916 km (Ministry of Jalshakti 2019) . The aim of this study is to assess the quality of water with respect to heavy metalsFe, Cu, Cr, Cd and Pb contaminant level in Brahmaputra river.

II. Sources

Heavy metal enter into river water by variety of sources, it can be either natural or anthropogenic (Wong et. al. 2003; Adaikpoh et.al.2005). Mineralogy and the weathering are also sources of heavy metal contamination at low concentration. Main anthropogenic sources of heavy metal contamination are untreated industrial effluents, indiscriminate use of heavy metal containing fertilizers and pesticides in agricultural fields (Ammann et.al. 2002; Nouri et.al.2006, 2008). In urban area river contaminated by heavy metal due to the practice of discharge of untreated domestic and small-scale Industrial effluents discharge into water body (Rim - Rukeh et. al. 2006; Khadse et. al. 2008,

Copyright to IJARSCT
www.ijarsct.co.in

DOI: 10.48175/568

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2021-2022

Heterocyclic Letters
Vol. 11| No.4|667-673|August-October|2021
ISSN : (print) 2231–3087 / (online) 2230-9632
CODEN: HLEEAI
http://heteroletters.org

SYNTHESIS OF SOME PYRAZOLO (3,4-b) PYRIDINE DERIVATIVES PROVEN EFFECTIVE AS ANTIBACTERIAL AND ANTIFUNGAL ACTIVITY

Archana D. Jadhav[a]*, Pankaj Barhate[a], Ayesha Durrani[b]

a. *Department of Chemistry, Loknete Ramdas Patil Dhumal Arts, Science & Commerce College Rahuri, Ahmednagar, Maharashtra, India*
b. *Department of Chemistry, Dr. Rafiq Zakaria College of Womens, Naukhanda, Aurangabad, Maharashtra, India*
***Email:** archu1990jadhava@gmail.com*

ABSTRACT
In recent years heterocyclic compounds have more importance because of their pharmacological activities. 5-aminopyrazole derivatives have a particular value due to their broad spectrum of biological activity and their wide ranging utility as synthetic tools in the design of various bioactive molecules. The synthesis of pyrazolo (3,4-b) pyridines can be achieved by condensation of 1,3-diketone such as acetyl acetone with 5-amino pyrazole by conventional and microwave irradiation method. The structure of newly synthesized compounds was characterized on the basis of IR and NMR, analysis. The newly synthesized compounds were screened for antibacterial and antifungal activity.

KEY WORDS
Antibacterial, irradiation, NMR, acetonitrile, antifungal, etc.

INTRODUCTION
Pyrazoles are five member ring heterocyclic compounds, have some structural features with two nitrogen atoms in adjacent position and also called as azoles [1]. Recently pyrazole derivatives have been found in nature as β-(1-pyrazolyl) alanine was isolated from the seeds of water melons [1]. Pyrazole derivatives are the subject of many research studies due to their widespread potential biological activities such as antimicrobial [2], antiviral [3], antitumor [4-5], antidepressant [6], insecticides and fungicides [7]. Several pyrazole derivatives have been found to possess significant activities such as antiproliferative [8], antiparasitic [9], herbicides [10]. A number of pyrazole have also been reported to have interesting biological activities like anti-inflammatory [11] and antiprotozoal [12-13] which render them valuable active ingredients of medicine and plant protecting agents.

Present work deals with the preparation of some pyrazolo (3,4-b) pyridine derivative which was prepared by using 3-(aryl)-1-phenyl-1H-pyrazol-5-amine and 1,3-diketone via

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Naukhanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Naukhanda, Jubilee Park,
AURANGABAD. (M.S.)

2021-2022

177
193

Dr. Rafiq Zakaria College for Women Aurangabad

Letters in Applied NanoBioScience
Publish Open Access Journal ISSN: 2284-6808

Article
Volume 11, Issue 4, 2022, 4080 - 4088
https://doi.org/10.33263/LIANBS114.4080

Ultrasound-Assisted, $ZnCr_2O_4$ Nanocatalyzed Synthesis of Substituted Tetrahydroquinolines via Povarov Reaction

Pravin Chavan [1], Amol Ghoti [2], Shivaji Jadhav [3], Megha Rai [3], Dhanraj Kamble [4], Rohini Shelke [5], Dattatraya N. Pansare [6,*]

[1] Department of Chemistry, Doshi Vakil College, Goregaon-Raigad, (MS), India
[2] Department of Chemistry, Tarai College of Arts and Science, Paithan-Aurangabad, (MS), India
[3] Department of Chemistry, Dr. Rafiq Zakariya College for Woman, Aurangabad (MS), India
[4] Department of Chemistry, SBES College, Aurangabad, (MS), India
[5] Department of Chemistry, Sahgurs Godage Mahaviq College Karad, 415124, MS, India
[6] Department of Chemistry, Deogiri College, Aurangabad, (MS), India
* Correspondence: dattatraya.pansare7@gmail.com (D.P.);

Scopus Author ID 55921428500

Received: 1.07.2021; Revised: 15.08.2021; Accepted: 19.08.2021; Published: 30.10.2021

Abstract: Eco-friendly, reusable $ZnCr_2O_4$ Nano catalyzed tetrahydroquinoline derivatives are prepared via Povarov reaction route from aromatic aldehydes, aromatic naphthalene, and 2,3-dihydrofuran under either ultrasonic irradiation methods. This several affords several benefits like good to excellent yields, a higher percentage of atom economy. Substituted tetrahydroquinolines have been shown great biological potential.

Keywords: Povarov reaction; tetrahydroquinoline; $ZnCr_2O_4$; multi-component reaction.

© 2021 by the author. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (http://creativecommons.org/licenses/by/4.0/).

1. Introduction

Recently, three-component reactions allow the construction of several new bonds in single pot reactions (MCRs) have uplifting importance in synthetic heterogenic chemistry, and their routes provide excellent benefits over conventional synthetic techniques [1] like saved reaction time, low energy consumption, high degree-atom economy, improved percentage of yield, easier progress of the reaction, less handling of hazardous substances are most importance [2]. Tetrahydroquinoline derivatives are one of the important classes of natural products, and they cover a broad area of biological fields such as cytotropic, psychotropic, anti-allergic, antipyretic, anti-inflammatory, antimicrobial, antibacterial, estrogenic, antimalarial, antitumoral, antiplatelet, and anticancer [3]. Povarov (Aza Diels-Alder) reaction is one of the powerful and efficient tools for the synthesis of substituted tetrahydroquinolines [4]. The imines formed from aldehydes and aromatic amines act as heterodienes, and they cyclize with various dienophiles in the presence of various Lewis's acid catalysts. The Lewis acid like $AlCl_3$ [5], $ZnCl_2$ [6], $BF_3.OEt_2$ [7], $TiCl_4$ [8], $InCl_3$ [9], $ZrCl_4$ [10], trifluoroacetic acid [11], *p*-TsOH [12], and $LiClO_4$ [13]. Lanthanide triflates [14], CAN [15], L-proline [16], picric acids [17], montmorillonite clay [18] and polymer-supported benzotriazole [19] has been used to catalysed in Povarov reactions. Besides, the Povarov (Aza-Diels-Alder) reactions have been reported to be carried under microwave irradiations and photochemical conditions as well as water media and ionic liquids [20]. Ultra-sonochemistry is the biggest application of ultrasound to chemical synthesis and its processes. Luche and Co-workers have described a number of schemes that

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad (M.S.)

21-22
176
192

Dr. Rafiq Zakaria College for Women, Aurangabad

Letters in Applied NanoBioScience
Article
Volume 11, Issue 4, 2022, 3989 - 4006
https://doi.org/10.33263/LIANBS114.3989

Design and Development of Complexation of Ce^{+3} Metal Ions with Synthesized INZ Incorporated Bio-active Schiff Bases

Zamzam Taher Omer (Al-Abdal) [1], Megha Kal [1,*], Pravin Chavan [2,*], Rashmi Pathrikar [3], Shivaji Jadhav [4,*]

[1] Department of Chemistry, Dr. Rafiq Zakaria College for Woman, Aurangabad, 431001, (MS), India
[2] Department of Chemistry, Doshi Vakil College, Goregaon Raigad, 402103, (MS), India
[3] Department of Chemistry, Rajashri Shahu College, Parbhi-Aurangabad, 431111, (MS), India
[4] Department of Chemistry, Tarna College of Arts and Science, Paithan-Aurangabad, 431107, (MS), India
* Correspondence: drabdvaji1985@gmail.com (S.J.); chemistrypd412869@gmail.com (P.C.); drmegha08@gmail.com (M.K.);

Scopus Author ID 26653966600
Received: 24.08.2021; Revised: 20.10.2021; Accepted: 24.10.2021; Published: 30.10.2021

Abstract: In the present research, a series of Ce^{+3} metal ions complexation with INZ incorporating Schiff bases have been reported. INZ incorporated Schiff Bases (Sa-e) were developed by condensing INZ with substituted aromatic aldehyde and confirmed with various spectral Techniques such as Elemental analysis, UV, IR, ^{1}H-NMR, ^{13}C-NMR. All the synthesized organic ligands were evaluated against antibacterial and antifungal strains and found moderate to significant results. The Ce^{+3} metal ion solution mixed with newly prepared bio-active INZ Schiff bases (Sa-e) to afford the Ce-INZ Schiff base complexes (Ca-e). The stability constants of prepared complexes were determined and found in order of (Ca > Cb > Cd > Cc > Ce).

Keywords: Ce^{+3} metal Complexes; INZ Schiff Base; stability constant; INZ; biological evaluation.

© 2021 by the authors. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

1. Introduction

Nowadays, the complexation of pharmacologically active Schiff bases plays a vital role in various areas of the medicinal field [1-14]. Schiff bases showed various applications, such as maintaining the carbonyl group oxidation state, which they used as heterocyclic organic components, stimulating several enzymes, easily manufacturing, and Cheapest. Complexes of transition metal ion with Nitrogen containing Schiff bases show several pharmaceuticals applications like antibacterial, antifungal, antituberculosis, anti-inflammatory, anticancer, antimalarial antiviral, and antioxidant activities [15-17]. Also, it's applicable in the field of agriculture, biochemistry, oxygenation, electron reduction, and catalytic synthesis [18, 19]. Inner transition metal lanthanide ions also have a great capacity to perform coordination with heterocyclic compounds due to their vacant *f*-orbital. Lanthanides such as Sm (III) significantly form complexes with piperidin-4-ones [20]. Several biological applications (to stimulate metabolism in a living organism) of Silvery-white Sm metal we attracted more researchers for its complexation study with heterocycles. Lanthanide complexation of coumarin-3-carboxylic acid (HCCA) shows significant antiproliferative activity [21]; it also has the appreciable capability to form stable complexes with Schiff bases which have various applications in

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Rauzabaug, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Rauzabaug, Aurangabad (M.S.)

02

ICT: An Important Tool to Analyze Effectiveness of Teaching, Learning and Evaluation

Shalini T. Dengle
Assistant Professor, Dept. of Chemistry, Vivekanand Arts, Sardar Dalip Singh Commerce & Science College, Aurangabad, M.S., India.

Siddharth K.Undirwade
Professor, Department of Mechanical Engineering, P.E.S.College of Engineering Aurangabad, M.S., India,

Ayesha N.Durrani,
Associate Professor, Dept. of Chemistry, Dr.Rafik Zakeria collegefor women, Navkhanda, Aurangabad, M.S., India

Milind N. Gaikwad
Assistant Professor,Dept. of Chemistry, Arts, Commerce & Science College, KilleDharur, Dist. Beed, M.S., India.

Abstract:

This paper presents the study of the role of ICT in education and its effective parameters. It highlights the need, importance and effectiveness of the ICT in the educational parameters like teaching, learning and evaluation. The basic

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women

10 PP Economics 2020-2021

Int. Journal of Management and Development Studies 9 (1): 24-31 (2020)
ISSN (Online): 2320-0685. ISSN (Print): 2321-1423

Dr. Rafiq Zakaria College for Women * Aurangabad

The impact of non-oil exports on economic growth in Saudi Arabia

Mohammed Ameen Alfakih[1] and Syeda R. Tabassum[2]

Abstract: *This research aims to measure non-oil exports' impact on economic growth in Saudi Arabia (1970-2018). The data published in the annual reports of the Saudi Arabian Monetary Authority (SAMA) was used. They were using the standard approach through the ARDL model to determine the impact of each of the non-oil exports, consumer spending, and government spending on economic growth represented by the GDP. The results showed there is a Co-integration relationship between the variables, and this means the existence of a long-run equilibrium relationship. The results also revealed a positive and significant impact of non-oil exports on economic growth in Saudi Arabia. The time series is not static at the level. At the same time, it is static and does not contain the root of the unit when taking the first difference for it at the level of significance (5%) except for consumer spending, which is static when taking the second difference.*

Keywords: Non-Oil exports, economic growth, GDP, ARDL, Co-integration.

Introduction

Foreign trade is an important factor in economic growth, and exports play a major role in this factor due to the gains made by exporting countries such as creating job opportunities, reforming the trade balance deficit, and improving the balance of payments structure, and others (Shatnawi, 2013). The disparity in the natural and acquired advantages of each country has led to its specialization in producing certain types of commodities, which created a surplus in its production and then exported the surplus to other countries of the world to import goods that are not available to them in turn. Carrying out new investments that create an increase in national income and thus raise the standard of living for individuals and contribute to solving social problems, the most important of which is unemployment (Hussein and Ali, 2018). Many developing countries have adopted a strategy to boost exports according to the principle of the comparative advantage available to each country. For example, we find that the Kingdom of Saudi Arabia, Algeria, Tunisia, and Egypt followed this strategy, even partially, with Saudi Arabia and Algeria specializing in exporting petroleum and some mineral resources, while Tunisia specialized in Exporting phosphates, agricultural materials, and petroleum to a lesser extent. Egypt has specialized in exporting petroleum and cotton recently (Saeed, 2017). The relative importance of each group of Saudi manufacturing industries varies greatly, chemical industries and petroleum products are one of the dense industries that need huge funding to establish them (Al-Ghamdi and Al-Andijani, 2020).

[1] Research Scholar, Department of Economics, Dr. Rafiq Zakaria Collage for Women Aurangabad.
[2] Professor & Head Department of Economics Dr. Rafiq Zakaria Collage for Women Aurangabad.
E-mail: rukhsana.dr1@gmail.com
Corresponding author: Mohammed Ameen Alfakih can be contacted at: schmalfakih83@gmail.com
Any remaining errors or omissions rest solely with the author(s) of this paper.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

P.P

2020-2021

EXCEL JOURNAL OF ENGINEERING TECHNOLOGY AND MANAGEMENT SCIENCE
(An Peer Reviewed International Multidisciplinary Journal)
Vol. 1 No. 18 - June-July 2020

ISSN 2249-9032 (Print)
ISSN 2277-3339 (Online)
Impact Factor 2.119 (IIFS)

Dr. Rafiq Zakaria College for Women * Aurangabad *

Role of oil and natural gas in the achievement of sustainable development in the Arab countries

* Dr. Syeda Rukhsana Tabassom ** Dr. Zaid Ali Zaid Al-Atawi

Introduction

The importance of sustainable development is increasing from country to another, particularly in developing countries which suffer from economic, social and environmental crises such as reduction of their national and individual incomes, low productivity in various fields, economic dependence on the outside, high indebtedness, spread of poverty and unemployment, low health care and low level of education, lack of a healthy environment, and the most important is inefficiency or misuse of the available resources. Oil and gas have been playing an important role in the determination of the course and type of development since the early seventies until now whether in the producing Arab countries, through directing these revenues towards a number of infrastructure projects, creating jobs and improving human development or in other Arab countries (non-productive) through providing Arab development aid, the flow of inter-Arab investments and remittances to non-producing countries. Additionally, these two commodities also

* Prof & Head of Dept of Economics, Dr. Rafiq Zakaria College for Women, Aurangabad
** Dept. of Financial, Yemen Petroleum Company Aden

PRINCIPAL
Dr. Rafiq Zakaria College For Women,
Navkhanda, Jubilee Park,
AURANGABAD

2020-2021

OPEN ACCESS Freely available online

Biochemistry & Pharmacology: Open Access

Research Article

The Effect of Extracts of Citrus Sinensis Peel on Protoscolices in Echinococcus Granulosus.

Fadel Y S Al-Arabi[1*], Gozif Mohammed N Omer[2], Mansour Abdulnabi H Mahdi[1], Nahad MS Fartwt[3], Mazahar Farooqui[4], Vidya Pradhan[1]

[1]Rafiq Zakaria College for Women, Aurangabad, India; [2]Department of Bochemstry, Babasaheb Ambedkar Marathwada University, Aurangabad, India; [3]Department of Biology, Aden University Yemen; [4]Maulana Azad College of Arts Science and Commerce, India

Dr. Rafiq Zakaria College for Women Aurangabad

ABSTRACT

The present study aims to evaluate the scolicidals effects of Citrus sinensis peel extract on the protoscolices of hydatid cysts on an in vitro and in vivo. Protoscolices were aseptically aspirated from the livers of naturally infected sheep. Various concentrations of extract were used for 1-24h. Eosin exclusion test was used to determine the viability of protoscolices. Findings showed that extract at the concentrations of 100, mg/ml. killed 100% protoscolices after 6 hour , but the concentration 75 and 50 mg/ml. killed the protoscolices after 12 hours and 24 exposure, respectively. Obtained results in this investigation for demonstrated that sweet orange might be a natural source for the production of new scolicidals agents.

Keywords: Hydatidosis; Echinococcus; granulosus; protoscolices; Citrus; Sinensis.

INTRODUCTION

Hydatidosis is a very serious health problem and epidemic in most countries of the world. The larval stage of granulosus parasite is the cause of the disease, which belongs to the Platyhelminthes phylum of the Cestoda species infect the small intestine of the carnivorous [1]. Human beings are accidental intermediate hosts and get infected due to food or water contaminated with feces of dog containing eggs of parasite or with direct contact with dogs [2].

Thetefore, the studies in recent years have been directed to investigate many diseases using the folk medicine known as a herbal medicine for being effective, safe and economical factors [3]. The significance of this study is to show the effect of the extracts of the plant Citrus sinensis in the vitality of the protoscolices of Echinococcus granulosus of sheep origins in vitro and their growth in vivo.

Citrus sinensis (Sweet orange) plant belonging to the family Rutaceae. It is one of the most popular world fruit crops, contains active phytochemicals that can protect health [4]. (sinensis) refers to its Chinese origin [5]. Economically, oranges are important fruit crops, with an estimated 60 million metric tonnes produced worldwide as at 2005 for a total value of 9 billion dollars. Of this total, half came from Brazil and the United States of America [6,7].

Oranges as an excellent source of vitamin C, consist of powerful natural antioxidant, folate, dietary fibre and other bioactive components, such as carotenoids and flavonoids that prevent cancer and degenerative diseases [8]. Orange peel and juice play an anti-diabetic role by inhibiting the alpha-amalase enzyme responsible for converting complex carbohydrates into glucose, stimulating insulin secretion, and repairing defects of beta-pancreatic beta secretions [9,10]. It is also used against obesity, because it contains low calories and is rich in dietary fiber [11]. Orange fruit also works against typhoid fever [12]. Orange peel contains anticoxidants and plays an important role against inflammation as well as the use of orange odors as an anti-anxiety agent [13]. Lemonin, linoleic and mersin in orange are effective against fungi [14].

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Rafiq Zakaria Campus, Jubilee Park,
AURANGABAD. (M.S.)

Corresponding author: Fadel Y S Al-arabi, Rafiq Zakaria College for Women, Aurangabad, India. E-mail: alarabyf1@hotmail.com

Received date: April 02, 2021; Accepted date: April 16, 2021; Published date: April 23, 2021

Citation: Al-Arabi FYS, Omer GMN, Maldi MAH, Farwt NM, Farooqi M, Pradhan V, et al. (2021) Rafiq Zakaria College for Women, Aurangabad, India. Biochem Pharmacol. 10:272.

Copyright: © 2021 Al-Arabi FYS, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Aurangabad (M.S.)

ISSN 0975-2366
DOI: https://doi.org/10.31838/ijpr/2021.13.01.175

Research Article

The Effect of Extracts of *Annona squamosa* on Protoscolices in *Echinococcus granulosus in Vitro* and *in Vivo*.

FADEL Y. S. AL-ARABI[1]*, MANSOUR ABDULNABI H. MEHDI[1], GOZIF MOHAMMED N. OMER[2], AIDAH M. ALI[3], MAZAHAR FAROOQUI[4] AND VIDYA PRADHAN[1]
[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad 431001, India.
[2]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India.
[3]Department of Microbiology, Dr. Babasaheb Ambedkar Marathwada University, Osmanabad, Campus, India.
[4]Maulana Azad College of Arts Science & Commerce Aurangabad 431001, India.
*Corresponding Author
Email ID: alaraby1100@gmail.com
Received: 22.09.20, Revised: 21.10.20, Accepted: 18.11.20

ABSTRACT
The present paper aimed at determining the effect of aqueous and alcohol extracts of the leaves of the *Annona squamosa* plant on the vitality of the protoscolices of sheep *in vitro* and *in vivo*.
The results of the study showed that alcohol and aqueous extract solutions had an inhibitory effect on protoscolices compared with control group over all concentration range. The percentage of homicide was measured by using the eosin stain test, which depends on changing the green color of the alive protoscolices to red after killing it. The study revealed that the concentration of 100 mg/ ml was the best concentration for killing the protoscolices after 48 hours of exposure. It was observed that when laboratory animals were injected with the protoscolices treated with the extracts, the protoscolices failed in the formation of secondary hydatid cysts.

Keywords: Hydatidosis, *Echinococcus granulosus*, protoscolices , *Annona squamosa*.

INTRODUCTION

Hydatidosis was and is still a real challenge to doctors and veterinarians and those who interested in parasitology, and by threatening human health and life, and beyond harm to poultry, It represents the economy of the site of large economic losses, which obliged to think side by side at the level of the individual society and the state in finding different means that can reduce of spread the disease and control it.
The importance of this study is to show the effect of the extract of alcoholic and aqueous of the leaves of the plant *A. squamosa* in the vitality of the protoscolices of *Echinococcus granulosus* of sheep origins *in vitro* and their growth *in vivo*.
Annona squamosa L.is commonly known as (custard apple). It is a member of Annonaceae family, comprising approximately135 genera and 2300 species [1,2]. *A.squamosa* is a medicinal plant used in alternative medicine for ancient times.
Various parts of *A.squamosa* have been used such as fruits, seeds, and leaves to treat many diseases [3]. The plant extract is a good tonic and it has the ability to increase blood, increase muscle strength, relieve the heart and relieve vomiting [4].It is good for washing hair and eliminating lice [5]. Plant extracts are used to heal wounds and treat Guinea worms [6,7,8].The aqueous extract of plant leaves also has an anti-diabetic activity [9,10] . Leaf extracts also showed activity against bacteria and fungi [11,4]. Seed extracts play an active role against cancer cells, especially skin and colon cancers [12,13,14].

MATERIALS AND METHODS

Plant source: Leaves of the plant under study were obtained from the campus of Dr Rafiq Zakaria College for women and they were authenticated. The leaves are dried under shadow and grinded to powder.
Preparation of plant extracts:
Preparation of aqueous extracts: The plant extracts were prepared according to the method adopted by Mehdi et al., [15], put (400ml) of distilled water in a clean glass beaker and (40gm) of plant powder was added, then it was placed the magnetic stirrer solution for (24 hours) at room temperature, then solution was filtered by using stirred four layers of gauze medical and then placed in a centrifuge for (10 min) at a speed of (3000 rpm). Then it was placed in an electric oven at (40-60) degrees Celsius for evaporating water and then obtaining a dry powder which was scraped and stored in refrigerator in sealed bottles until use [16].
Preparation of Alcoholic extract: The plant leaves powder (40gm) was taken in Soxhlet apparatus. Then (400 ml) ethyl alcohol (70%) was added. The plant materials are extracted till the color extract disappears it was left undisturbed. The solvent was evaporated by rotary evaporation. The mixture was finally placed in clean Petri dishes. Then the dry

2020-2021

FINAL

Send Orders for Reprints to reprints@benthamscience.net

Anti-Infective Agents, 2021, *19*, 1-10 1

RESEARCH ARTICLE

Bioactive Chemical Compounds Identified in Extracts of *Reseda sphenocleoides* Leaves and Evaluation of Antiamoebic Activity *In Vitro*

Mansour Abdulnabi H. Mehdi[1,2,*], Mohammad Mohsin[3], Fadel Y. S. Alarabi[1,2], Gozif Mohammed N. Omar[1,4], Mazahar Farooqui[5] and Vidya Pradhan[3]

[1]*Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen;* [2]*Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001India;* [3]*Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001India;* [4]*Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001, India;* [5]*Maulana Azad College of Art, Science, and Commerce, Aurangabad, India*

Rafiq Zakaria College for Women Aurangabad

Abstract: ***Background:*** *Entamoeba histolytica* is a causative agent of amoebiasis, estimated to cause more than 100,000 deaths per year. Metronidazole is used to treatment of *E. histolytica* infection. However, this drug has several untoward side effects, the current study was designed to analysis of the bioactive chemical products in extracts of *Reseda sphenocleoides* leaves and evaluation of anti-amoebic activity *in vitro*.

Methods: Bioactive chemical compounds were tested by GC-MS and FT-IR. *Entamoeba histolytica* was cultured under xenic conditions in Locke's egg (LE) medium and different concentrations of extracts of *R. sphenocleoides* were added to cultivated parasites.

Results: 11 and 18 bioactive phytochemical compounds were shown in the ethanolic and aqueous extracts of *R. sphenocleoides* leaves, respectively, by GC-MS analysis. FT-IR analysis of extracts of *R. sphenocleoides* leaves proved the presence of many functional groups for various phytocompounds. The ethanolic extract of *R. sphenocleoides* leaves was inhibited the growth of *E. histolytica in vitro* at concentrations 5 and 10 mg/ml after 96 hrs of incubation. At the same time, the highest concentration 20 mg/ml used in this study, inhibited the *E. histolytica* at all times of incubation. The aqueous extract showed that there was no growth of *E. histolytica* at the concentrations of 5 and 10 mg/ml after 72 and 48 hrs, respectively. However, the higher concentrations (15 and 20 mg/ml) of the aqueous extract were on the growth of *E. histolytica* parasite during the period of incubation. It was found that the minimum inhibitory concentration (MIC) for ethanolic and aqueous extracts of *R. sphenocleoides* leaves was <15 mg/ml and <10 mg/ml, respectively.

Conclusion: The results specify that the extracts of *R. sphenocleoides* has a higher capacity of reducing*E. histolytica* number *in vitro*. Moreover, these results showed that the extracts of *R. sphenocleoides* contain various bioactive compounds and therefore have various medicinal properties that can be used for the treatment of various diseases.

ARTICLE HISTORY

Received: August 31, 2020
Revised: August 31, 2020
Accepted: October 30, 2020

DOI:
10.2174/2211352519999201012175206

Keywords: *Reseda sphenocleoides*, *Entamoeba histolytica*, *In vitro*, FT-IR, GC-MS.

1. INTRODUCTION

Amoebiasis is a human disease that spreads worldwide, especially among children and it is an infection caused by protozoan parasite *E. histolytica* [1]. *E. histolytica* is an intestinal parasite that inhabits the large intestine of man but can also be found in the liver, lungs, and brain, causing serious consequences [2], about 50 million cases of dysentery and about 40,000 to 110,000 deaths per year [3]. Amoebiasis disease is ranked third on the list of parasitic protozoan infections leading to death after malaria and schistosomiasis [4]. The most effective and most used drug for the treatment of *E. histolytica* infection is metronidazole. However, it has been reported that this drug has very unpleasant side effects such as metallic taste in the mouth, dry mouth, vomiting, headaches as well as neurotoxicity and to a lesser extent nausea, pruritus, and dark colored urine [5, 6]. In addition, carcinogenic effects in embryos have been documented [7]. Due to the side effects of metronidazole, there is a necessity to search for an alternative for the treatment of amoebiasis with high activity, low toxicity, cheaper, and more effective and safer antiprotozoal agents is still a necessary goal.

Reseda sphenocleoides Deflers belonging to the family Resedaceae is endemic to southwest Arabia, Hadramaut, and Aden -Yemen [8, 9]. Yemeni people in the countryside treat

* Address correspondence to these authors at the Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen; Tel: +917709623233; E-mail: mansourabdulnabi@gmail.com

2211-3525/21 $65.00+.00

© 2021 Bentham Science Publishers

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Rafiq Zakaria Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Rafiq Zakaria College For Women
Aurangabad (M.S.)

2020-21

Original Article

Determination of Haematological Effects of Extracts of *Reseda sphenocleoides* Leaves in Albino Rats Infected with *Entamoeba histolytica*

Mansour Abdulnabi Hadi Mehdi[1,*], Vidya Pradhan[1], Mazahar Farooqui[2], Fadel Yousif Salah Alarabi[1], Gozif Mohammed Nasr Omar[3]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, INDIA. [2]Department of Chemistry, Maulana Azad College of Art, Science and Commerce, Aurangabad, Maharashtra, INDIA. [3]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra, INDIA.

Dr. Rafiq Zakaria College for Women Aurangabad

ABSTRACT

Objectives: This research was designed to examine improvements in some heamatological parameters of *Entamoeba histolytica*-infected rats treated with extracts of *Reseda sphenocleoides* leaves. **Methods:** Twenty rats weighing between 200-220 g were divided into 4 groups (Each per group containing 5 rats). Fifteen rats were infected by oral administration (17×10^3 cell/ml) of *E. histolytica* obtained from the stool. Infected rats were classified in differentiated three groups A, B, C. In addition, the negative control group E. The groups (A and B) were administered with the ethanolic and aqueous extracts at the dose of 500 mg/kg body weight/day, the group C was administered with metronidazole, in a dose 500 mg/kg body weight (Positive control group). The negative control group E was uninfected and untreated. The hematological parameters in the different groups were monitored throughout the period of study which was 10 days on three stages. **Results:** The results show a significant increase at $P \leq 0.05$ in Red Blood Cell Count (RBC), Haemoglobin (Hb), Hematocrit (HCT), Mean Cell Volume (MCV), Red Cell Distribution Width (RDW), Procalcitonin Test (PCT) and Lymphocyte (LY) in groups which treated with *R. sphenocleoides* extracts compare with metronidazole drug and the negative control group during treatment stages. While the results show a decrease of significant at $P \leq 0.05$ in Platelet (PLT), Mean Platelet Volume (MPV), Platelet Distribution Width (PDW), Total White Blood Cell (WBC), Monocyte (MO) and Granulocytes (GR) in groups which treated with *R. sphenocleoides* extracts in comparison with the control groups of rats. The results also indicate no changes of significance at $P > 0.05$ in Mean Corpuscular Hemoglobin (MCH) and Mean Corpuscular Hemoglobin Concentration (MCHC) during treatment stages. **Conclusion:** The findings of this study, the efficiency of *R. sphenocleoides* extracts in improving blood standards in rats infected with *E. histolytica*.

Key words: *Reseda sphenocleoides*, Extract, *Entamoeba histolytica*, Haematological, Albino rats.

Submission Date: 17-04-2020;
Revision Date: 17-07-2020;
Accepted Date: 15-01-2021

DOI: 10.5530/ijper.55.2.81

Correspondence:
Mr. Mansour Abdulnabi Hadi Mehdi
Department of Zoology, Dr. Rafiq Zakaria College for Women, Navkhanda, Aurangabad, Maharashtra, INDIA.
Phone no: +91 7709625233
Email id: mansourabdulnabi@gmail.com

INTRODUCTION

Amoebiasis infection represents a large and serious medical and public health problem in developing countries due to its nutritional consequences.[1] It is a dangerous disease that is transmitted to humans by infection with this parasite occurred by water and food contaminated with cysts of *Entamoeba histolytica*.[2] The trophozoites active invades of the intestines muscular and penetrates the intestinal muscle wall and feeds on the erythrocyte.[3] The trophozoites continue to corrode the intestinal epithelium, leading to ulcers in the intestinal muscular.[4] Most of the infection is asymptomatic; however, in symptomatic patients, it is associated with malabsorptive diarrhea.[5] Also, the incidence infection of these parasites can lead to low birth weight, reduced productivity in adulthood, stunted growth, reduced

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Aurangabad (M.S.)

2020-2021

ISSN 0975-2366
DOI: https://doi.org/10.31838/ijpr/2020.12.04.076

Research Article

Evaluation of antiamoebic activity of *Ziziphus mauritiana* leaf extracts in rats experimentally infected with *Entamoeba histolytica*

MANSOUR ABDULNABI H. MEHDI[1,2*], MAZAHAR FAROOQUI[3], VIDYA PRADHAN[2]
[1]Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen
[2]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India
[3]Maulana Azad College of Art, Science and Commerce, Aurangabad, India.
*Corresponding Author
Email ID: mansourabdulnabi@gmail.com
Received: 24.04.20, Revised: 25.05.20, Accepted: 26.06.20

Dr. Rafiq Zakaria College for Women Aurangabad

ABSTRACT
The present study aimed to evaluate the activity of extracts of *Ziziphus mauritiana* leaves against *Entamoeba histolytica* in experimentally infected rats.
In vivo anti-amoebic activity was assayed where twenty-one (*Rattus norvegicus*) rats were infected with *E. histolytica* and divided into seven groups. Groups (1,2 and 3) were treated with ethanolic *Z. mauritiana* extracts at doses 125, 250, and 500 mg/kg respectively for ten days. Groups (4,5 and 6) were treated with aqueous extract of *Z. mauritiana* at doses 125, 250, and 500 mg/kg respectively for ten days. Group (7) was left untreated as a positive control group.
The results showed a significant decrease at $p \leq 0.05$ in the numbers of parasite cells from the second day of treatment in all the groups treated with aqueous as well as ethanolic extract. This decrease gradually continued during the days of treatment until it reached zero on the 9th and 10th days of treatment for the dose of 500 mg/kg for both ethanol and aqueous extract respectively. Histopathological study showed that the ethanolic and aqueous extracts of *Z. mauritiana* at dose 500 mg/kg repairs the parasite damage in comparison with a range of positive and negative control groups.
The results strongly support the traditional use of *Z. mauritiana* leaves for the treatment of diarrhea.
Keywords: *Ziziphus mauritiana*, *Entamoeba histolytica*, *Rattus norvegicus*, antiamoebic, Histopathology.

INTRODUCTION

Amoebiasis is an intestinal infection caused by the protozoan *Entamoeba histolytica* with worldwide, high prevalence, and significant morbidity this parasite is one of the most widespread parasites with a broad geographic range and it is the second most common cause of death due to parasitic infection after malaria [1]. Data from the World Health Organization report about 50 million new cases of *E. histolytica* infection per year in the world, and over 100,000 deaths cases because of it worldwide per year [2, 3].

Clinical symptoms of amoebiasis vary, however it's most predominant symptom, abdominal pain, painful sudden bowel evacuation (tenesmus), and bloody diarrhea [4].

The typical treatment for amoebiasis is chemotherapy using one or more drugs. metronidazole, tinidazole, furoate, dehydroemetine emetine, diloxanide chloroquine, iodoquinol, and paromomycin are the used drugs currently in the treatment of *E. histolytica* infection in the world [5]. Predominantly the metronidazole drug a first-line drug in the treatment amoebiasis. However, chemotherapeutic agents cause adverse reactions such as nausea, headache, metallic taste in the mouth and vomiting as well as neurotoxicity [6]. Moreover, mutagenic and carcinogenic effects have been observed in laboratory animals [7].

In our search for therapeutical alternatives for antiamoebic chemotherapy from Indian medicinal plants used in the treatment of diarrhoea, we investigated *Ziziphus mauritiana* (Indian jujube) an endemic species used in Indian traditional medicine it has been used in many diseases treatment such as in pulmonary ailments, gastrointestinal disorders, abdominal pains, halt nausea, vomiting, halt diarrhoea and dysentery [8, 9]. This study was performed to evaluate the efficacy of *Z. mauritiana* extracts

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-2021

Research J. Pharm. and Tech. 13(9): September 2020

ISSN 0974-3618 (Print)
0974-360X (Online)

www.rjptonline.org

RJPT

RESEARCH ARTICLE

Evaluation of haematological changes in *Entamoeba histolytica*-infected rats administered with extracts of *Ziziphus mauritiana* leaves

Mansour Abdulnabi H. Mehdi[1*], Fadel Y. S. Alarabi[1], Gozif Mohammed N. Omar[2], Khaled Nasher Q. Salem[3], Vidya Pradhan[1]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.
[2]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001, India.
[3]Department of Biology, Faculty of Science, Aden University-Yemen.
*Corresponding Author E-mail: **mansourabdulnabi@gmail.com**

Dr. Rafiq Zakaria College for Women Autonomous

ABSTRACT:
This study was designed to evaluate the changes in some heamatological parameters of *Entamoeba histolytica*-infected rats treated with ethanolic and aqueous extracts of *Ziziphus mauritiana* leaves. The ethanolic and aqueous extracts of the leave at 500mg/kg-1 body weight/day, while a standard antiamoebic drug, metronidazole, at a dose of 500mg/kg-1 body weight was administered on the positive control group for 10 days. The negative control group was uninfected and untreated. The haematological parametrats in the different groups were monitored throughout the period of study which was 10 days on three stages. The results show a significant increase at P≤0.05 in red blood cell count (RBC), haemoglobin (Hb), hematocrit (HCT), mean cell volume (MCV), red cell distribution width (RDW), procalcitonin test (PCT) and total white blood cell (WBC) in groups which treated with *Z. mauritiana* extracts compare with metronidazole drug and the control group during treatment stages. While the results show a significant decrease at P≤0.05 in platelet (PLT), mean platelet volume (MPV), platelet distribution width (PDW), monocyte (MO) and granulocytes (GR) when compared to the control groups of rats. The results also indicate no significant changes at P>0.05 in mean corpuscular haemoglobin (MCH), mean corpuscular haemoglobin concentration (MCHC) and count lymphocyte (LY) during treatment stages. Conclusion: The findings of this study, that the efficiency of *Z. mauritiana* extracts in improving blood standards through variations occurring in blood proportion and not adversely affect the haematological parameters.

KEYWORDS: *Entamoeba histolytica, Ziziphus mauritiana,* Haematological parameters.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Jubilee Park,
Aurangabad (M.S.)

INTRODUCTION:

Entamoeba histolytica affects millions around the world. It is the second leading cause of death in humans after malaria[1,2]. Despite decades of research, amoebiasis infection remains a major global health problem with high mortality and morbidity than any other infectious disease where the World Health Organization (WHO) estimates that the *E. histolytica* parasite causes approximately 50 million cases of dysentery and 100,000 deaths per year[3].

Despite decades of research, metronidazole remains a therapeutic drug of choice for the treatment of amoebiasis[4], but is experiencing drug resistance by *E. histolytica*, so that resulting in the need for increased doses to overcome the infection. In addition, this drug has several untoward side effects such as headaches, metallic taste in the mouth and vomiting as well as neurotoxicity[5,6]. The resistance of amoebiasis to drugs such as metronidazole has become a serious problem in developing countries[7]. Medicinal plants are popular for use especially in developing countries because their products are safe and widely available at low cost. There is also a need to provide reliable scientific data to determine whether the plants currently used to treat amoebiasis are actually effective and have no adverse effects on the system. This plant is found in most the countries including drought prone regions and has been

Received on 09.10.2019 Modified on 10.12.2019
Accepted on 23.01.2020 © RJPT All right reserved
Research J. Pharm. and Tech 2020; 13(9):4105-4110
DOI: 10.5958/0974-360X.2020.00725.8

2020-2021



Asian Journal of Research in Biochemistry

8(1): 22-34, 2020; Article no.AJRB.63989
ISSN: 2582-0516

Analysis of Bioactive Chemical Compounds of Leaves Extracts from *Tamarindus indica* Using FT-IR and GC-MS Spectroscopy

Mansour Abdulnabi H. Mehdi[1,2*], Abdul-hakim M. A. Al-Alawi[2], Ahmed Zain A. Thabet[3], Fadel Y. S. Alarabi[1,2], Gozif Mohammed N. Omar[2,4] and Vidya Pradhan[1]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001, India.
[2]Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen.
[3]Department of Chemistry, Maulana Azad College of Art, Science and Commerce, Aurangabad, India.
[4]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001, India.

Authors' contributions

This work was carried out in collaboration among all authors. Author MAHM designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors MAHM, GMNO, AZAT and FYSA managed the analyses of the study. Author VP managed the literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJRB/2021/v8i130171
Editor(s):
(1) Dr. Fabio Alberi, Sapienza University, Rome, Italy.
Reviewers:
(1) Edith Alba Luz Segovia Corrales, National University of Asuncion (Universidad Nacional de Asunción), Paraguay.
(2) Carmen Alejandrina Virgen, Universidad de Guadalajara, México.
(3) Nandkishore Thombare, ICAR- Indian Institute of Natural Resins and Gums, India.
Complete Peer review History: http://www.sdiarticle4.com/review-history/63989

Original Research Article

Received 14 October 2020
Accepted 21 December 2020
Published 14 January 2021

ABSTRACT

Tamarindus indica is one of the medicinal plants used in the treatment of various diseases traditionally.
Aims: This study was conducted to identify the phytochemical constituents of *T. indica* leaf extracts.
Methods: Using Fourier-transform infrared spectroscopy (FT-IR) and gas chromatography-mass spectrometry (GC-MS) to identification of bioactive compounds in extracts of *T. indica*.
Results: The FT-IR spectrum confirmed the presence of alcohol group, alkene group, amine group, carbonates, ethers, carboxylic acid and disulfides in both extracts.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Jubilee Park,
Aurangabad. (M.S.)

**Corresponding author: E-mail: mansourabdulnabi@gmail.com;*

EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 7
Issue: 12
317-322
Year: 2020

EFFECT OF ETHANOL EXTRACT OF *PANCRATIUM MAXIMUM* BULBS ON *ENTAMOEBA HISTOLYTICA IN VIVO*

Mansour Abdulnabi H. Mehdi[1,2]*, Vidya Pradhan[1], Khaled Nasher Q. Salem[3], Gozif Mohammed N. Omar[2,4] and Fadel Y. S. Alarabi[1,2]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.
[2]Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen.
[3]Department of Biology, Faculty of Science, Aden University-Yemen.
[4]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001, India.

***Corresponding Author: Mansour Abdulnabi H. Mehdi**
Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.

Dr. Rafiq Zakaria College for Women * Aurangabad *

Article Received on 20/10/2020 **Article Revised on 10/11/2020** **Article Accepted on 30/11/2020**

ABSTRACT

Knowledge of traditional medicine is still transmitted from generation to another in Yemen orally, *Pancratium maximum* has been used as a medicinal plant in traditional medical systems in southern Yemen. The study determined if administration of ethanolic extract *P. maximum* bulbs effects against *Entamoeba histolytica in vivo*. In this study, the antiamoebic activity of *P. maximum* was tested using experimental infections of *Entamoeba histolytica*, the most common cause of protozoa diarrhoea worldwide, in rats (*Rattus norvegicus*). Plants were extracted in ethanol. Rats were treated for ten days orally once a day, with the doses of 125, 250, and 500mg/kg of body weight. Rats' faeces were taken every day and examined by microscopy, the number of shed *E. histolytica* were counted using a haemocytometer. After rats' sacrifice and dissection, their colon were then processed for examination using histological sectioning and scanning microscopy. The results showed a significant ($P<0.05$) reduction in the numbers of parasite cells from the second day of treatment in all the groups treated with the ethanolic extract. This decrease gradually continued during the days of treatment until it reached zero on the 10th day of treatment for the dose of 500 mg/kg. The infected treated group (positive control) showed significant ($P<0.05$) increases in the *E. histolytica* numbers in the feces of rats during 10 days of infection. Histological studies of the infected rats indicate and no showed improvement after using ethanolic extract of *P. maximum* compared with the negative group (non-infected without treatment).

KEYWORDS: *Pancratium maximum, Entamoeba histolytica, Rattus norvegicus*, antiamoebic, Histopathology.

INTRODUCTION

Entamoeba histolytica is a protozoan parasite that causes a parasitic disease known as amoebiasis.[1] Which infected mammalian species, including humans, spread occurs via by the stool of infected people or animals in everywhere such as soil, water, food or surfaces, as well as by oral-anal sexual habits.[2,3] symptoms of amoebiasis include fever, stomach pain, bloody stools, and diarrhea.[4,5] In rare cases, *E. histolytica* can invade the liver causing hepatic amoebiasis and abscess. it may move to other parts of the body, such as the brain or lungs.[3] Fifty million people suffer from amoebic colitis and liver abscess caused by *E. histolytica* and it is responsible for an estimated 50,000 to 100,000 deaths yearly.[6,7] Infection with *E. histolytica* leads to excystation releases the trophozoites phase that invades the mucous layer of the large intestine which causes amoebic colitis, colonic ulceration, this deep ulcer maybe leads to peritonitis, which in turn leads to death.[8,9]

The most frequent treatment against amoebiasis are nitro-imidazoles such as metronidazole or tinidazole, or benzimidazole compounds. These treatments are effective but can produce significant undesirable side-effects such as headaches, metallic taste in the mouth, and vomiting as well as neurotoxicity.[9,10] Moreover, resistance to these treatments has been described by *E. histolytica*. Due to the side effects, the search for new, safe, and effective therapeutic alternatives to the treatment of amoebiasis has become necessary.

Pancratium maximum elongs to the family Amaryllidaceae, bulbous herb up to 40 cm long, 0.5-2 cm wide with 4-5 linear leaves, arising from a bulb. The bulb is globose, 4-6 cm in diameter, narrowed above into a cylindrical neck, covered with several layers of dark reddish-brown papery tunics. The flowers solitary, resembling a white daffodil, consisting of 6 narrowly lanceolate lobes containing a similar to the cup, the

PRINCIPAL Dr. Rafiq Zakaria College For Women Ibiblee Park, AURANGABAD. (M.S.)

THE ANTIAMOEBIC POTENTIAL OF AQUEOUS EXTRACT OF *PANCRATIUM MAXIMUM* BULBS IN RATS INFECTED WITH *ENTAMOEBA HISTOLYTICA*

Mansour Abdulnabi H. Mehdi*, Vidya Pradhan

Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.

Dr. Rafiq Zakaria College for Women Aurangabad

ABSTRACT

The study determined if administration of aqueous extract *Pancratium maximum* bulbs effects against *Entamoeba histolytica* in experimentally infected rats.

Eighteen rats (200-250 g) were divided into 6 groups of 3 rats each. Groups 1–5 were inoculated with *E. histolytica* (17×10^3cell/ml), followed by daily administration of 125, 250 and 500 mg/kg aqueous extract after the establishment of infection for groups 1-3. Group 4 was administered with doses of 500 mg/kg of metronidazole, while group 5 which oral with the parasite and untreated with plant extract and considered control positive while group 6 the negative control group which non-infected with the parasite and untreated with plant extract.

The results showed significant ($P<0.05$) reduction in the numbers of parasite cells from the second day of treatment in all the groups treated with aqueous extract. This decrease gradually continued during the days of treatment until it reached the lowest level on the 9th and 10th days of treatment for the dose of 500 mg/kg. Infected treated group showed significant ($P<0.05$) increases in the numbers of *E. histolytica* in the feces of rats during 10 days of infected. Histological studies of the infected rats indicate and no showed improvement after using aqueous extract of P. maximum compared with the metronidazole group.

Keywords: *Pancratium maximum, Entamoeba histolytica, Rattus norvegicus,* antiamoebic, Histopathology.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

1. INTRODUCTION

Entomoeba histolytica is an infection of the intestinal tract that causes the human disease known as amoebiasis, the infection with *E. histolytica* is increased in tropic and subtropic regions, particularly in suffer from poor health and living conditions sanitation areas (Shaker *et al.*, 2018). Amoebiasis comes third in terms of mortality parasitic diseases after Malaria and schistosomiasis (Samie *et al.*, 2012). It is responsible for estimated 100,000 deaths per year and at least 50 million

2020-21

http://www.klibjlis.com

eISSN No. 2394-2479

Dr. Rafiq Zakaria College for Women * Aurangabad *

TECHNIQUES OF TEACHING FOR LIS EDUCATION

Dr. Siddiqui Eraj Azeeza*

* **Librarian**
Dr. Rafiq Zakaria College for Women,
Aurangabad, Maharashtra, India

QR Code

Introduction

There is a tremendous semantic confusion in the use of such words as methods, strategies and techniques because they are used interchangeably in the educational literature. According to Dhand Marry basically, there are three methods of teaching: Transmission, inquiry and a combination of two (or electric method). A method is an overall procedure or process to achieve certain goals. A teacher follows certain approaches approximating one of three methods given above. Techniques of teaching are the day-to-day activities which the teacher may design for a particular lesson. They may include group discussions, projects, and the use of books or field tripping. A strategy is the organization and co-ordination of the above techniques to practice the method, which would achieve the desired goals.

A teaching technique can be thought of as an activity which affects the learners encoding process that is, how the learner will learn the desired information, concept, generalization and/ or skills. The technique can be either student centered such as student made reports or teacher center such as lecture. They can be active or passive depending on how they are used. There can be many factors which can be determine the success or failure of any technique. The teacher must be alert to the appropriateness of the technique to the topic. For instance, the technique should be such that it makes best use of the students time. To a large extent, everything that happens in the learning situation (sometime that is

Dr. (Mrs.) SIDDIQUI ERAJ
B.Sc. B.Ed. M.Lib.Sc. PhD.
LIBRARIAN
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

180

2020-21

"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
Volume: 07, Issue: 06, Nov. - Dec. 2020 eISSN NO. 2394-5362
Impact Factor (SJIF) - 5.266

Dr. Rafiq Zakaria College for Women Aurangabad

AN OVERVIEW OF ONLINE PUBLIC ACCESS CATALOGUE (OPAC)

Dr. Siddiqui Eraj Azeeza
Librarian
Dr. Rafiq Zakaria College for Women
Aurangabad, Maharashtra, India

Introduction:

One of IT's greatest accomplishments is transformation of the card catalogue to the OPAC to facilitate libraries. An OPAC is a library catalogue accessed via a computer terminal for the benefit of library users. It is a computerised catalogue of documents and reading materials available in a library. It provides online access to library's catalogue for users and allows the searching and retrieval of bibliographic records. The OPAC works on several databases, but primarily on the library catalogue database. A catalogue database is the machine-readable form of the card catalogue and is made up of a number of bibliographic records which comprise a collection of data elements (author, title, publisher, subject heading, etc.) organised in a systematic manner which represents bibliographic items.

Harrod's Librarian's Glossary and reference book defines it as 'An OPAC is the catalogue of a library or information centre made available to users online and generally providing a variety of additional facilities such as loan information, online reservation, and library news. With the demise of the card catalogue, the need for stressing the 'online public access' part has disappeared and they are now frequently just 'catalogue'.

The Online Dictionary for Library and Information Science defines, 'OPAC as an acronym for Online Public Access catalog, a database composed of bibliographic records describing the books and other materials owned by a library or library system, accessible via public terminals or workstations usually concentrated near the reference desk to make it easy for users to request the assistance of a trained reference librarian. Most online

Dr. (Mrs.) SIDDIQUI ERAJ
B.Sc. B.Ed. M.L.I.Sc. Ph.D.
LIBRARIAN
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)
191

2020-21

http:// www.klibjlis.com

eISSN No. 2394-2479

Dr. Rafiq Zakaria College for Women Aurangabad

NEED FOR LIBRARY WEBSITES: AN OVERVIEW

Dr. Siddiqui Eraj Azeeza *

*** Librarian**
Dr. Rafiq Zakaria College for Women,
Aurangabad, Maharashtra, India.

QR Code

INTRODUCTION

The academic libraries in India, in particular the University Libraries of today, are improving their service base especially with application of Information technology for access and delivery of e-content to their clients. In this process they are also adapting to the change, altering their image, by executing new functions and providing varieties of services in an evolving continuum. The rapid developments in information technologies have already laid a solid foundation for a new innovative evolution of university in the on going digital era. Impacted by new advances in emerging and cutting -edge technologies, however, "academic libraries have already transformed their specific functions in today's changing world as; information center, learning center, training center, publication center" (Lilili, 2009). The World Wide Web (WWW), the invention of Tim Barnes Lee, has also created tremendous influence in the transformation of libraries as knowledge resource centres, rather than store house of print media.

The impact of this change is all pervasive and affecting all the aspects of library operations, information resources and services, staff skills requirements and users expectations. The accelerating pace of technological developments has tremendously increased the ability to access, store, process, communicate and deliver

Dr. (Mrs.) Siddiqui ERAJ
M.Lib.I.Sc. PhD.
Dr. Rafiq Z. Women
Navkhanda, Jubilee Park, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

200

2020-21

"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
Volume: 07, Issue: 02, Mar. – Apr. 2020 eISSN NO. 2394-5362
Impact Factor (SJIF) – 5.266

Dr. Rafiq Zakaria College for Women Aurangabad

TEACHING AIDS USEFUL FOR LIS EDUCATION

Dr. Siddiqui Eraj Azeeza
Librarian
Dr. Rafiq Zakaria College for Women
Aurangabad, Maharashtra,, India

Introduction

Teaching aids are devices, which present units of knowledge through auditory or visual stimuli or both with a view to help learning. They concretize the knowledge to be presented and thus help in making a learning experience appear real, living and vital. They supplement the work of the teacher and help in the study of books. According to UGC CDC (2001) use of teaching aids has its own significant importance for effective teaching. The use of OHP's (Overhead Projector) and Slide Projectors, TV & VCR have entered the classrooms to aid the teaching and also to make it effective.

It is well known fact that IT has created greatest impact on Library & Information Science Curriculum and in recent years the teaching of fundamentals to advanced courses in Library & Information Science department has become sine-qua-non.

Use of new educational technology of Library & Information Science in India is very much needed to make teaching more effective.

Teaching in each and every area of Library & Information Science Education can be made more stimulating by bringing this canned learning to the classroom.

As cited by Patel, U.S. & Pancholi, S.H. W.B. Yeats said, "*Education is not filling the pail, but the lighting of fire. It should inculcate creativity in us.*"

Importance and need of Teaching Aids:

As stated by Yadav, M.S. is as under

i. Teaching aids help the teacher in getting the attention of his students.
ii. Teaching aids help in creating the interest of the student in the topic and activate the mental process of the students.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

DR. (MRS.) SIDDIQUI ERAJ
M.Lib.I.Sc. Ph.D.
LIBRARIAN
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

131

2020-21

http://www.klibjlis.com

eISSN No. 2394-2479

Dr. Rafiq Zakaria College for Women * Aurangabad *

WEB 2.0 TECHNOLOGY IN LIBRARIES

Dr. Siddiqui Eraj Azeeza *

* **Librarian,**
Dr. Rafiq Zakaria College for Women,
Aurangabad, Maharashtra, India

QR Code

Abstract: - *This Article defines that the Web 2.0 is a new version of the World Wide Web that emphasize user generated content, usability, and interoperability. Web 2.0 the second phase in the Web's evolution, is attracting the attention of IT professionals, businesses, and Web user. This term was Web 2.0 is a term introduced in 2004 by Tim by Tim O'Reilly and Dale Dougherty at the O' Reilly .The popularity of the term Web 2.0, along with the increasing use of blogs, wikis, and social networking technologies, has led many in academia and business to append a flurry of 2.0's to existing concepts and fields of study.*

Keywords: Web 2.0, Library 2.0, World Wide Web, Blog, RSS, and Social Networks.

Introduction

"Web 2.0" does not have a precise definition. To many people, the phrase refers to special web application technologies and websites, such as weblogs and wikis, which use the Internet in collaborative way to provide services to users. Web 2.0 relies in large part on the user- as publisher model of interaction and allows for user-created content to be developed an implemented by large groups of individuals. These technologies are increasingly being used by companies for better staff collaboration and communication. O'Reilly outlined seven principles that can help distinguish the core features of Web 2.0 applications. A number of Web 2.0services and sites have appeared in the recent years. Some popular services are YouTube, Face book, MySpace, etc. The term 'Web 2.0' was coined to define an emerging pattern of new uses of the Web and approaches to the Web development, rather than a formal upgrade of Web technologies as the 2.0 version number may appear to signify. The key Web 2.0 concepts include:

Web 2.0

Web 2.0 is a term that describes the changing trends in the use of World Wide web technology and Web design that aim to enhance creativity, secure information sharing, increase collaboration, and improve the functionality of the Web as we know it (Web 1.0). These have led to the development and evolution of Web-based communities and hosted services, such as social

Dr. (Mrs.) SIDDIQUI ERAJ
M.L.I.Sc. Ph.D.
LIBRARIAN
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-20

http:// www.klibjlis.com

eISSN No. 2394-2479

CHANGING ROLE OF LIBRARY & INFORMATION PROFESSIONALS

Dr. Siddiqui Eraj Azeeza *

* **Librarian,**
Dr. Rafiq Zakaria College for Women,
Aurangabad, Maharashtra, India

Dr. Rafiq Zakaria College for Women * Aurangabad *

Introduction

Today the word "Library" itself is being replaced by the term "information center" and the world 'Librarian' is replaced by different terms.

UNESCO guidelines identifies these professionals as[20]

- Information Educator
- Information Researcher
- Information Manager
- Information Analyst
- Information Distributor
- Information Scientist

It's interesting to observe how these phrases all refer to "Information" when referring to librarians. This is to emphasise that in the future, people will not be interested in digging through published volumes or papers to get knowledge; instead, they will want it to be readily available, ready, or in electronic form. A type of professional education known as library and information science provides students with both theoretical and practical instruction in methods of library organisation, management, and information retrieval.

It is vital to properly evaluate the quality, dependability, and effectiveness of the trained staff as well as the career prospects in the field

Dr. (Mrs.) SIDDIQUI ERAJ
M.Lib. Ph.D.
LIBRARIAN
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-21

"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
Volume: 07, Issue: 05, Sept. - Oct. 2020 eISSN NO. 2394-5362
Impact Factor (SJIF) - 5.266

Dr. Rafiq Zakaria College for Women * Aurangabad *

१८५७ च्या उठावात उलेमांची भूमिका

प्रा.डॉ. अब्दुल्ला बासीत चाऊस
सहाय्यक प्राध्यापक व इतिहास विभाग प्रमुख,
डॉ. रफिक झकेरिया कॉलेज फॉर वुमेन्स,
औरंगाबाद (महाराष्ट्र)

प्रस्तावना :

भारतात इंग्रजांनी ज्या दिवशी आपला जुल्मी साम्राज्य स्थापन केले. त्या दिवसापासूनच उलेमांनी इंग्रजांच्या प्रखर विरोधाला सुरुवात केली. भविष्य काळात हा विरोध एका चळवळीच्या रुपात रुपांतरित झाला. भारताच्या ह्या स्वातंत्र्य चळवळीत उलेमांचाही सिहाचा वाटा आहे. प्लासीची लढाई पासून ते १९४७ ला देश स्वतंत्र होईपर्यंत, ह्या चळवळीत उलेमांचा बहुमोल, सक्रिय योगदान त्यांनी आपल्या बलिदानाने, संपत्तीने, लेखनाने, भाषणाने व तन, मन, धनाने दिला. उलेमांची ही चळवळ फक्त भारतासाठीच नव्हे तर ती पाश्चिमात्य देश, इस्लामीक देश व पूर्ण आशियासाठी होती.

१८५७ चे 'गदर' या पंजाबी अर्थ 'इन्किलाब' (उठाव) आहे. ह्या स्वातंत्र्य लढ्याला आधुनिक भारताच्या इतिहासात अत्यंत महत्त्वाचे स्थान आहे. उलेमांनी या लढ्याला आधुनिक भारताच्या इतिहासात अत्यंत महत्त्वाचे स्थान आहे. उलेमांनी या लढ्याला चांगली दिशा प्रदान केली. स्वातंत्र्याचा खरा अर्थ सांगितला, देशासाठी व स्वधर्म रक्षणासाठी जिहाद का आवश्यक आहे, त्याचे विश्लेषण केले, जागृती, देशभक्ती, देशरक्षण इत्यादींची निर्मितीसाठी फतवे काढले. या कार्यात करीत असतांना उलेमांनी बलिदान दिले, फासीवर चढले, तुरुंगात गेले, अनेक कष्ट, यातना सहन केल्या परंतु या पवित्र कार्यापासुन मागे फिरले नाही. उलेमांच्या कार्यांच्या संदर्भात सावरकर म्हणतात, "प्रभावी मौलवी, उलेमा जिहादचा प्रचार करण्यासाठी पुढेच आले. त्यांनी प्रत्येक गावात व खेड्यापाड्यात दौरे करुन जागृत निर्माण केली." १८५७ मध्ये हेनी हॅमिल्टन यांनी आपले पुस्तक "Late Rebellion in India and Policy" मध्ये

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

DR. ABDULLAH CHAOUSH
HEAD
Department of History
Zakaria College For Women

JOURNAL OF HIGHER EDUCATION AND RESEARCH SOCIETY: A REFEREED INTERNATIONAL
VOL-8 / ISSUE-2 ISSN- 2349 8293

Dr. Rafiq Zakaria College for Women ★ Aurangabad

PREDOMINANCE OF NATURE IN ROMANTIC POETRY

Dr. Nilofer Shakir
Asst. Professor and Head,
Dr. Rafiq Zakaria College for Women, Aurangabad

Recently the veteran writer Ruskin Bond was asked whether Coronavirus epidemic should make people across the globe rethink and contemplate about their relationship with Nature, he replied, "I think all this has been possibly caused by too much interference and over exploitation of Nature, fueled by our over-consumerism, materialism and soaring population. See what has happened with Amazon forests in Brazil. Lockdown has given people enough time to be in solitude and reflect on their lives and their relation with Nature" (Santosh).

This statement throws light upon the journey we have made from the past to the present times, a journey that began in the 18 century or even a little before that, when man started the destruction of nature to achieve progress. The felling of trees, construction of factories and industries and huge sky-scrapers has resulted in natural imbalance. We have destroyed the natural landscape and its rich resources. This perilous violation of nature has been unprecedented. Unfortunately, the natural imbalances endangered the lives of all living organisms on the planet.

The desynchronisation of our relationship with nature and the growing desire for material success has left us with little peace and satisfaction. It has filled our lives with emptiness, boredom and monotony. The present paper aims to understand the relationship of man with nature through an exploration of romanticism in English literature. It tries to highlight the romantic urge that reminds man of his bond with nature and the great spiritual wealth it withholds.

The romantic poets paint the picture of the beautiful English countryside uncorrupted by materialism. But the melancholic tone which they adopt in their poetry was born out of the sense of emptiness, misery and poverty that became the part of lives of people of England in the eighteenth century.

The sight of the daffodil flowers or the song of a skylark never failed to bring delight to the ailing heart of the romanticists. The rich melody of the skylark or the company of nightingale

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women * Aurangabad *

ISSN: 2320-5407 Int. J. Adv. Res. 8(10), 254-25



RESEARCH ARTICLE

LESSONS FROM THE PAST IN MOHSIN HAMID'S MOTH SMOKE

Dr. Nilofer Shakir
Asst. Professor and Head, Dept. Of English, Dr. RafiqZakaria College for Women, Aurangabad.

Manuscript Info

Manuscript History
Received: 10 August 2020
Final Accepted: 12 September 2020
Published: October 2020

Key words:-
Turbulent, Corruption, Disintegration Intrigues, Conspiracies

Abstract

The events in the novel Moth smoke, by Mohsin Hamid are based in Lahore, Pakistan. The writer takes us back in time to the Lahore of the Mughal era. He highlights a turbulent period in Mughal history when the ageing Monarch, Shah Jahan was distressed over the question of succession to the throne. A Sufi saint had predicted that his younger son Aurangzeb would become the king. The writer discusses the political tension of the times. The drive for succession involved a series of diplomatic moves and strategies which the four Mughal Princes adopted to survive the political storm that was generated by the conflicts related to the war of succession. The novel focuses on the late 90's in Lahore. Mohsin Hamid draws a parallel between the political disturbance in the 16th century and the Lahore of present times. The Lahore of the late 90's is in the grip of serious political and social crises. The hostility gripping the two countries of the subcontinent, India and Pakistan is portrayed through the nuclear tests conducted first by India and immediately afterwards by Pakistan in 1998. He focuses on the disintegration of the country and highlights the rampant corruption, drugs, and class wars. The intrigues and conspiracies hatched in the court and harems of Emperor Shah Jahan bordered on the lust for power or supremacy. The novel highlights the impulses, dreams and ambitions which motivate the actions of the characters in the two different time zones and how they finally lead to defeat and death.

Copy Right, IJAR, 2020. All rights reserved.

Introduction:-

The events in the novel Moth smoke are based in Lahore, Pakistan. Mohsin Hamid in his unusually lucid style and Non-linear narrative takes us back in time to the Lahore of the Mughal era. He highlights a turbulent period in Mughal history when the ageing Monarch, Shah Jahan was distressed over the question of succession to the throne. A Sufi saint had predicted that his younger son Aurangzeb would become the king. The writer discusses the political tension of the times. The great Mughal emperor, Shah Jahan was blessed with four sons who entered into war for the throne. The eldest was Darashikoh, the second Shuja, then Aurangzeb and the youngest MuradBakish. The war of succession finally led to the defeat and death of Darashikoh at the hands of Aurangzeb who succeeded his father to the throne. It also involved a series of diplomatic moves and strategies which the four princes adopted to survive the political storm that was generated by the conflicts related to the war of succession.

Corresponding Author:- Dr. Nilofer Shakir
Address:- Asst. Professor and Head, Dept. Of English, Dr. RafiqZakaria College for Women, Aurangabad.

HEAD
Department of English
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

'RESEARCH JOURNEY' International E- Research Journal
Impact Factor - (SJIF) - 6.625 (2019),
Special Issue - 262 : Translation Studies
Peer Reviewed Journal
E-ISSN : 2348-7143
March-2021

Translating History through 'Baburnama'

Dr. Nilofer Shakir
Asst. Professor and Head,
Dr. Rafiq Zakaria College for Women,
Aurangabad.

The present paper is a humble attempt to review certain important events of Indian history through an interpretation of Baburnama, the classic autobiography of the great Mughal emperor, Zahiruddin Mohammad Babur (1483- 1530). Originally written in Turkish language by Babur, the autobiography was translated in English by eminent scholars. Amitav Ghosh , the great Indian contemporary writer studied the latest translation of the Baburnama written by Wheeler M. Thackston. His essay, Empire and Soul: A Review of The Baburnama, one from his collection of essays, entitled Imam and the Indian is based on the translation of the Baburnama by Thackston. The text assumes great significance as it gives us an insight into the personality of the first Mughal king, Babur. The study of the Baburnama and his keen interest in history helped Ghosh to highlight some important facts of Indian history- the facts which are never mentioned anywhere in historical records.

Through history, we know about the frequent invasions of Indian nation in the past. Foreign rulers came and established their political rule over India. The Aryans, the Mongols, the Muglals, the British etc. established their political rule and departed, leaving behind the imprints of their culture, art and political systems over this huge Indian nation – a nation populated by people of varied religious, linguistic, and racial backgrounds and spread across its vast geographical boundaries. If we look back upon the past, we have examples of people fighting with each other to establish their religious supremacy- especially the two major Indian communities of Hindus and the Muslims. But the hatred and bitterness between the two was never as strong as it is in contemporary times. There are many factors responsible for this. This rivalry between them intensified with India's independence and the end of British rule. The post-Partition India saw an eruption of a series of riots between the two communities. However many important events of historical significance do not find a mention in historical records. Individual tales of heroism and the mass suffering of certain religious and ethnic groups are often skipped by historians. Hence the history we study is only partially true as it based upon manipulated historical records.

These gaps in history have been of serious concern to contemporary creative writers like Amitav Ghosh, Salman Rushdie, Rohinton Mistry and many others who question official history and highlight its missing parts in their writings. They create a parallel history through fiction and lend justification to those historical events which are deliberately excluded from mainstream history by vested interests.

Our perceptions of historical personages are based on received history. So our views on the Mughal rulers are often coloured with scorn because the available historical records paint the Mughal kings and their dynasty in a negative light. However Ghosh's study of this classic text distorts our views and perceptions of Mughal rulers. The history preserved in the Baburnama contradicts received records. Ghosh points out that if the Indians knew the real historical facts which adorn the Baburnama, a great tragedy and massacre of thousands of innocent Indians could have been averted. The tragic event referred to is the demolition of the Babri Masjid in

Dr. Rafiq Zakaria College for Women Aurangabad
HEAD Department of Eng... Dr. Rafiq Zakaria College For W... Navkhanda, Aurangabad
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Exit West: A study of refugee crisis and search for Identity

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

Dr Nilofer Shakir
Asst. professor and head, department of English,
Dr. Rafiq Zakaria College for Women, Aurangabad.

The novel Exit West by Mohsin Hamid is a wonderful encapsulation of the insecurity and uncertainty of our times and the impending global crises of large -scale migration which the novel forecasts might become a regular norm in near future. The novel begins in an unnamed city, which could be Pakistan or any other country. The writer depicts the city, caught in the grip of violence, killings and militancy. People are fleeing to distant countries through the multiple doors that open up illegally into strange, far off countries. The writer introduces us to Saeed and Nadia, a young man and a woman, who meet, fall in love and flee together to distant countries of the West, slipping through the secret doors that are open for migrants. The writer discusses about how violence often leads to dislocation and what it can do to an individual as he witnesses his city, his family and the society falling apart. The book hints at the present-day escalation of violence in the world, especially in South Asian countries like Pakistan, the Middle East, Afghanistan, Syria etc. and the growing terror that has engulfed the world, post 9/11. The writer offers us the vision of the global crises of mass migration which in all respects will become more intense in future.

No place is free from migrants or refugees. The unnamed city which Hamid describes, has refugees pouring in.

"Refugees had occupied many of the open places in the city, pitching tents in the green belts between roads, erecting lean- tos next to the boundary walls of houses, sleeping rough on pavements and in the margins of streets."[1]

Saeed worked for an agency that specialized in outdoor advertising. An independent minded young man, whose father was a university professor and mother, a school teacher, both retired from jobs, Saeed lived with them in a small flat while Nadia worked for an insurance company. She is a bold woman, who rides the city on her motorcycle, donning a helmet and a black robe.

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

IMPACT FACTOR – 5.61

LangLit

ISSN 2349-5189

An International Peer-Reviewed Open Access Journal

Langlit Latur (MS) India AIPROAJ

Hamid, carries with him in his journey across the desert to join his mother. The wall clock's beats echo the movements of the unborn child within Maryam's womb which has signalled disaster for this scattered family; and those same pulsations mingle with the footsteps of Hamid as he moves ever further away and closer to their mother. When Hamid discards his watch in the desert, he discovers another pulse, that of the earth itself, a favorite image of Kanafani and, one might add, of the vast majority of Palestinian writers for whom earth not implies alienation form what is most beloved.[1]

In the novel, *All That's Left to You*Hamid wants to leave his sister Maryam with Zakaria who is going to marryher. Maryam was pregnant before wedlock that infuriates Hamid therefore,he decidesto leave Gaza and cross the desert to Jordan. Hamid was unhappy with Maryam. He believes she has disgraced the relations which he was not able to share with anyone. The dishonoured act of his sister and his disliking of Zakaria leads him to leave Gaza. As Hamid says,

> *"I 've decided to leave Gaza," he said. She smiled, and her mouth with its badly applied lipstick looked like a bloody wound that had suddenly opened up beneath her nose. "Where will you go?" she asked, her mouth still open, as though she wanted to tell him that he couldn't do that. "I'll go to Jorden over the desert." "So you're running away from me?" she said. He shook his head. "You were everything to me, but now you're dishonoured, defiled, and I'm deceived...If only your mother was here."* [2]

Misery and loss of both Hamid and Maryam commences with the departure from each other. The loss is applicable in both ways- the loss of family members and the loss of mother land.Losing a person or land has alwaysbeeen painful because it involves attachment, affinity and belongingness. Hamid wants his sister, Maryam to persuade him to stay in Gaza but her guilt won't allow her to do so,

> *As he went down the steps, he wanted to hear a sound, to hear his sister's voice calling out to him- "Hamid, come back." He wanted her to cry out, to say something. But the only sound he heard was the sound of his own footsteps clattering down the stairs. Even before he'd reached the street, he heard the door slam behind him. No solicitous word broke the silence.*[3]

*All That's Left You*has a symbolic appealas it reminds the characters in the novel that what is left for them. Family, peace, friendly relations, affinity, love, bonds and so on are gradually taken away in exchange of hatred, selfishness, deception. The characters weren't happy with the things that are left for them and wish for something to happen in their favour throughout the novel. Though, Zakaria marries Maryam in the novel but she feels that she can't take the position like Zakaria's first wife, Fathiyya. She lives with fear of losing Zakaria because he is married and a father of five children. She expresses the miserable thoughts as,"If only I could make her understand I'm not against her and that she had nothing to do with what happened. But what use are words, now that I've actually become the second wife sitting in my husband's lap? Day and night, I'll be the butt of the gossip of the neighborhood.

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park
AURANGABAD. (M.S.)

HEAD
Department of English
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad

2020-21

IMPACT FACTOR – 5.61

LangLit

ISSN 2349-5189

An International Peer-Reviewed Open Access Journal

Latur (MS) India

AIPROAJ

MISERY AND LOSS IN GHASSAN KANAFANI'S *ALL THAT'S LEFT TO YOU*

Dr. Rafiq Zakaria College for Women Aurangabad

DR. KHAN MAHLAQA AFZAL
Assistant Professor & Research Guide
Department of English
Dr. Rafiq Zakaria College for Women,
Navkhanda, Jubilee Park,
Aurangabad-431001(M.S.)

ABSTRACT

The present research paper attempts to discussmisery and loss as one of the dominant themes in Ghassan Kanafani's All That's Left to You.It explores the topic through the relationship and representation of Hamid, Maryam and Zakaria. Maryam becomes the reason of Hamid's misery which drives himto leave his country. Losing a beloved sister and land adds misery to the life of Hamid. Whereas, Maryam invites misery and disgrace to herself and family through the affair and marriage with Zakaria whom she stabs later. Loss of brother and husband makes the life of Maryam very pathetic and miserable. Zakaria knows the consequences of his extra marital affair with Maryam but he involves Maryam, his first wife and Hamid in it. Zakaria is the reason of unhappiness, miserable life of both Maryam and Hamid. Throughout the novel he is known for betrayalwhom Hamid refers as 'swine'. Both-external and internal forces in All That's Left to You' effectson the lives of the characters enormously. The loss of lives and disgraced relationship in the novel makes the narration very gloomy and pessimistic. Ghassan Kanafani succeeds in depicting the worst situation and the miserable condition of the people of war-torn Palestine.

Keywords: Misery, Loss, Pessimism, Flashback, Palestinian, and Gaza.

Ghassan Kanafani, Palestinian novelist, writer of short-stories and political activist was killed in the explosion of his booby-trapped car in Beirut in 1972. He is considered a leading novelist in the Arab world. Hamid and his sister Maryam in *All That's Left to You*are the victims whereas, Zakaria contributes to theme immensely. Characters in Kanafani's novel also represent the difficult phases of Palestine and sufferings of its own people.Kanafani uses Time and the Desert as characters alongside Hamid, Maryam and Zakaria. According to him, thefusion involves a series of disconnected lines which occasionally come together in such a way that they seem to be making just two strands and no more. There is no clear distinction between places and times which are far removed from each other, or indeed between places and times at a single moment. Time does indeed play a pivotal role in this novel. The events takeplace over a period of some eighteen hours, many of them at night, and there is a copious use of flashback to provide the reader with details of earlier events in the lives of the principal characters. Time becomes symbolized through the ticking of both the wall clock in the "temporary" Palestinian home in the Gaza Strip where Maryam and her feckless and already married lover, Zakaria, have set up house and also the watch which Maryam's brother

Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-2021

EXCEL INTERNATIONAL JOURNAL OF SOCIAL SCIENCE & HUMANITIES
ISSN 2277-7539 (Print)
Impact Factor 5.691 (IIJIF)

Rafia Zakaria College for Women
Aurangabad

صوفی شاعر : خواجہ میر دردؔ

ڈاکٹر سید وفرحت نسرین

نام خواجہ میر دردؔ تخلص' سادات گھرانے کے چشم و چراغ تھے۔ 1720ء میں پیدا ہوئے۔ والد کی جانب سے خاندانی سلسلہ حضرت بہاؤالدین نقشبندی اور والدہ کی جانب سے حضرت عبدالقادر جلانی سے ملتا ہے۔ والد خواجہ ناصر عندلیب ایک درویش خدا رسیدہ انسان تھے۔ دردؔ نے والد محترم سے مذہبی تعلیم حاصل کی اور انہیں سے ہی تصوف کے اسرار و رموز سے آگاہی حاصل کی۔ دردؔ کو موسیقی سے بڑا لگاؤ تھا اور یہ لگاؤ بھی انہیں والد صاحب کی طرف سے ہی ملا تھا۔ خواجہ میر دردؔ نقشبندیہ سلسلے کے اہم پیروکار تھے اور اس سلسلے کا ایک بنیادی اصول یہ بھی ہے کہ نقشبندیہ طریقے میں رقص و سرور کی سختی سے مخالفت کی جاتی ہے ایسے میں دردؔ کا اور ان کے والد کا فن موسیقی سے لگاؤ اور اس فن پر قدرت رکھنا اس بات کا مظہر ہے کہ ایسا بھی ایک تصور پایا جاتا ہے کہ موسیقی روح کی غذا ہے سرور ہے۔ نشاط یہ جذبہ ہے۔ اگر گائیکی میں حمدیہ یا نعتیہ کلام ہو تو سننے والا اپنے تمام تر جذبوں کے ساتھ ان اشعار میں اپنی ذات کو گم کر لیتا ہے اور یہ بھی کہا جاتا ہے کہ موسیقی کے ذریعہ خدا تک پہنچنے کا راستہ تلاش کیا جا سکتا ہے۔

ہر دم وصال یار ہے سارے وجود میں
تو نے تو انگ انگ کو مخمور کر دیا

ہندوستان کے بڑے بڑے موسیقار دردؔ سے موسیقی کی تعلیم لینے آتے تھے۔ دردؔ کی فطرت میں انکساری رچی بسی تھی انہوں نے کبھی خودستائی سے کام نہیں لیا۔ اپنے والد سے تصوف کے رموز سے آگاہی حاصل کی مالک حقیقی پر کامل ایقان اور یقین محکم خودداری کی ثابت قدمی ان کی فطرت کا حصہ تھے دردؔ نے تصوف کو عملی طور

PRINCIPAL
Dr. Rafia Zakaria College For Women
Nirbhand, Jalna Road,
AURANGABAD (M.S.)

2020-2021
Rafiq Zakaria College for Women * Aurangabad *

ISSN 2320-8519 AKS-E-ADAB (Quarterly) Aurangabad.

تنقید (تحقیق وتنقید)

ڈراما ''انارکلی'' کا تجزیاتی مطالعہ

ڈاکٹر فرحت نسرین
(اسسٹنٹ پروفیسر وصدر شعبہ اردو)
ڈاکٹر رفیق زکریا کالج فار ویمن، رکھنڈہ، اورنگ آباد (MS)
موبائل: 9028042984

☆خلاصہ (Abstract) :
ڈراما ''انارکلی'' امتیاز علی کا شاہکار ڈراما ہے۔ یہ ڈراما دنیا کی مختلف یونیورسٹی میں اردو نصاب میں شامل ہے۔ اس مضمون میں ڈرامے کے اجزائے ترکیبی کی بنیاد پر انارکلی کا تجزیاتی مطالعہ مختصراً بیان کرنے کی کوشش کی گئی ہے۔

تعارف (Introduction) :

نیم تاریخی و رومانی ڈرامہ ''انارکلی'' امتیاز علی تاج کا ایک ایسا سدا بہار ڈراما ہے جو خود ایک ادب کا کوہ نور ہے اور جس نے ادب کی تاریخ رقم کردی۔ یہ اردو ڈراما دنیا کی دوسری ادبی زبانوں کے مقابلے میں بھی رکھا جاتا ہے۔

☆ڈراما ''انارکلی'' کا تجزیاتی مطالعہ

عنوان: انارکلی اشاعت: ۱۹۳۲ء

☆کردار :

اس ڈرامے میں بہت زیادہ کرداروں کی بھرمار نہیں ہے۔ ڈرامے کی کہانی کے حساب سے کردار کا تناسب متوازن ہے۔ اس کے سارے اہم کرداروں کے ساتھ چھوٹے موٹے کردار بھی ذہنوں پر اسی طرح نقش ہوتے ہیں جس طرح فلم ''شعلے'' کے سانبھا اور کالیا جیسے کردار بھی نقش ہوجاتے ہیں۔ ''انارکلی'' ڈرامے میں پیش کیے گئے کردار اس طرح ہیں :

☆انارکلی : ڈرامے کی ہیروئن (مرکزی کردار)
☆سلیم : ڈرامے کا ہیرو (اکبر کا بیٹا)
☆جلال الدین محمد اکبر : شہنشاہ ہند
☆بختیار : سلیم کا بے تکلف دوست
☆دل آرام : حرم سرا میں اکبر کی منظور نظر کنیز
☆ثریا : انارکلی کی چھوٹی بہن
☆رانی : اکبر کی راجپوت بیوی، سلیم کی ماں
☆انارکلی کی ماں
☆زعفران : حرم سرا کی ایک شوخ کنیز
☆ستارہ : حرم سرا کی کنیز، زعفران کی سہیلی
☆مروارید : حرم سرا کی کنیز، دل آرام کی رازدار
☆عنبر : حرم سرا کی کنیز، مروارید کی سہیلی
☆کافور : کنیزوں کا داروغہ
☆داروغہ زنداں، خواجہ سرا، بیگمیں، کنیزیں وغیرہ

اس ڈرامے کا عنوان ایک خاتون کے نام ہے جو اس ڈرامے کی ہیروئن اور مرکزی کردار ہے۔ اس ڈرامے کی پوری کہانی اسی کے گرد گھومتی ہے۔ اس ڈرامے میں شہنشاہ ہند اکبر اعظم کا بہت اہم کردار ہے۔ شہزادہ سلیم اس ڈرامے کا ہیرو ہے، اس کے باوجود یہ ڈراما صرف مغلوں کی ایک ادنیٰ کنیز خاتون کے نام ہے اور اسی لئے اس پر رومانیت کا رنگ غالب ہے۔ یہ تاریخ کا ایک واقعہ ہوتے ہوئے بھی افسانے کے لباس میں ہے۔ خود امتیاز علی تاج نے اس ڈرامے کی دیباچہ میں لکھا ہے :

''جہاں تک میں تحقیق کرسکا ہوں، تاریخی اعتبار سے یہ قصہ بے بنیاد ہے۔''

عشق ومحبت کی اس داستان کو لکھنے کی وجہ بتاتے ہوئے


سید امتیاز علی تاج

سید امتیاز علی تاج نے حقیقت نگاری کا ثبوت دیتے ہوئے یہ سچائی اس دیباچے میں اس طرح بیان کی ہے:

''میرے ڈرامے کا تعلق محض روایت سے ہے، بچپن سے ''انارکلی'' کی فرضی کہانی سنتے رہنے سے حسن وعشق اور ناکامی و نامرادی کا جو ڈراما میرے تخیل نے مغلیہ حرم کی شوکت وتجمل میں دیکھا اس کا اظہار ہے۔''

یہ ایک ایسی رنگین داستان ہے جو بالکل حقیقت لگتی ہے۔ اس ڈرامے کا عنوان اور کہانی ایک جسم ایک جان ہے۔ اس ڈرامے کا عنوان ''انارکلی'' اسی لئے ہے کہ انارکلی کو نہ جیتے جی اپنا محبوب نصیب ہوا، نہ مرکر حاصل ہوا۔ عشق میں ملی اس المناک ناکامی نے انارکلی کو ایک لازوال اور لافانی کردار بنا دیا اور انارکلی ڈرامے کو ایک شاہکار المیہ ڈراما۔

☆مقصد : فروغ جذبہ عشق ومحبت وتفریح اس ڈرامے کا مقصد ہے۔

☆انارکلی کا پلاٹ :

ڈراما ہو، ناول ہو یا افسانہ ان تمام افسانوی تخلیقات کی کامیابی کا دارومدار پلاٹ پر ہوتا ہے۔ پیش کیے گئے واقعات کی ترتیب کو پلاٹ کہتے ہیں۔ تاریخی قصے کو پیش کرنا زیادہ مشکل نہیں، کیونکہ اس میں تجسس نہیں ہوتا، تخلیق کار پلاٹ کے ذریعے ہی قارئین،

U.G.C. Approved No. 42266
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-2021

Biochemistry & Pharmacology: Open Access

OPEN ACCESS Freely available online

Research Article

Dr. Rafiq Zakaria College for Women Department of Biochemistry

The Effect of Extracts of Citrus Sinensis Peel on Protoscolices in Echinococcus Granulosus.

Fadel Y S Al-Arabi[1*], Gozif Mohammed N Omer[2], Mansour Abdulnabi H Mahdi[1], Nahad MS Fartwt[3], Mazahar Farooqui[4], Vidya Pradhan[1]

[1]Rafiq Zakaria College for Women, Aurangabad, India; [2]Department of Biochemistry, Babasaheb Ambedkar Marathwada University, Aurangabad, India; [3]Department of Biology, Aden University Yemen; [4]Maulana Azad College of Arts Science and Commerce, India

ABSTRACT

The present study aims to evaluate the scolicidals effects of Citrus sinensis peel extract on the protoscolices of hydatid cysts on an in vitro and in vivo. Protoscolices were aseptically aspirated from the livers of naturally infected sheep. Various concentrations of extract were used for 1-24h. Eosin exclusion test was used to determine the viability of protoscolices. Findings showed that extract at the concentrations of 100, mg/mL killed 100% protoscolices after 6 hour , but the concentration 75 and 50 mg/mL killed the protoscolices after 12 hours and 24 exposure, respectively. Obtained results in this investigation for demonstrated that sweet orange might be a natural source for the production of new scolicidals agents.

Keyword: Hydatidosis; Echinococcus; granulosus; protoscolices; Citrus; Sinensis.

INTRODUCTION

Hydatidosis is a very serious health problem and epidemic in most countries of the world. The larval stage of granulosus parasite is the cause of the disease, which belongs to the Platyhelminthes phylum of the Cestoda species infect the small intestine of the carnivorous [1]. Human beings are accidental intermediate hosts and get infected due to food or water contaminated with feces of dog containing eggs of parasite or with direct contact with dogs [2].

Therefore, the studies in recent years have been directed to investigate many diseases using the folk medicine known as a herbal medicine for being effective, safe and economical factors [3]. The significance of this study is to show the effect of the extracts of the plant Citrus sinensis in the vitality of the protoscolices of Echinococcus granulosus of sheep origins in vitro and their growth in vivo.

Citrus sinensis (Sweet orange) plant belonging to the family Rutaceae. It is one of the most popular world fruit crops, contains active phytochemicals that can protect health. [4]. (sinensis) refers to its Chinese origin [5]. Economically, oranges are important fruit crops, with an estimated 60 million metric tonnes produced worldwide as at 2005 for a total value of 9 billion dollars. Of this total, half came from Brazil and the United States of America [6,7].

Oranges as an excellent source of vitamin C, consist of powerful natural antioxidant, folate, dietary fibre and other bioactive components, such as carotenoids and flavonoids that prevent cancer and degenerative diseases [8]. Orange peel and juice play an anti-diabetic role by inhibiting the alpha-amalase enzyme responsible for converting complex carbohydrates into glucose, stimulating insulin secretion, and repairing defects of beta-pancreatic beta secretions [9,10]. It is also used against obesity, because it contains low calories and is rich in dietary fiber [11]. Orange fruit also works against typhoid fever [12]. Orange peel contains antioxidants and plays an important role against inflammation as well as the use of orange odors as an anti-anxiety agent [13]. Lemonin, linoleic and mersin in orange are effective against fungi [14].

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Corresponding author: Fadel Y S Al-arabi, Rafiq Zakaria College for Women, Aurangabad, India, E-mail: [illegible]

Received date: April 02, 2021; **Accepted date:** April 16, 2021; **Published date:** April 23, 2021

Citation: Al-Arabi FYS, Omer GMN, Mahdi MAH, Fawt NM, Farooqi M, Pradhan V, et al. (2021) Rafiq Zakaria College for Women, Aurangabad, India. Biochem Pharmacol. 10:272.

Copyright: © 2021 Al-Arabi FYS, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

2020 2021

FINAL

Dr. Rafiq Zakaria College for Women

Send Orders for Reprints to reprints@benthamscience.net

Anti-Infective Agents, 2021, *19*, 1-10

RESEARCH ARTICLE

Bioactive Chemical Compounds Identified in Extracts of *Reseda sphenocleoides* Leaves and Evaluation of Antiamoebic Activity *In Vitro*

Mansour Abdulnabi H. Mehdi[1,2,*], Mohammad Mohsin[3], Fadel Y. S. Alarabi[1,2], Gozif Mohammed N. Omar[1,4], Mazahar Farooqui[5] and Vidya Pradhan[2]

[1]*Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen;* [2]*Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001India;* [3]*Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001India;* [4]*Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001, India;* [5]*Maulana Azad College of Art, Science, and Commerce, Aurangabad, India*

Abstract: ***Background:*** *Entamoeba histolytica* is a causative agent of amoebiasis, estimated to cause more than 100,000 deaths per year. Metronidazole is used to treatment of *E. histolytica* infection. However, this drug has several untoward side effects, the current study was designed to analysis of the bioactive chemical products in extracts of *Reseda sphenocleoides* leaves and evaluation of anti-amoebic activity *in vitro*.

Methods: Bioactive chemical compounds were tested by GC-MS and FT-IR. *Entamoeba histolytica* was cultured under xenic conditions in Locke's egg (LE) medium and different concentrations of extracts of *R. sphenocleoides* were added to cultivated parasites.

Results: 11 and 18 bioactive phytochemical compounds were shown in the ethanolic and aqueous extracts of *R. sphenocleoides* leaves, respectively, by GC-MS analysis. FT-IR analysis of extracts of *R. sphenocleoides* leaves proved the presence of many functional groups for various phytocompounds. The ethanolic extract of *R. sphenocleoides* leaves was inhibited the growth of *E. histolytica in vitro* at concentrations 5 and 10 mg/ml after 96 hrs of incubation. At the same time, the highest concentration 20 mg/ml used in this study, inhibited the *E. histolytica* at all times of incubation. The aqueous extract showed that there was no growth of *E. histolytica* at the concentrations of 5 and 10 mg/ml after 72 and 48 hrs, respectively. However, the higher concentrations (15 and 20 mg/ml) of the aqueous extract were on the growth of *E. histolytica* parasite during the period of incubation. It was found that the minimum inhibitory concentration (MIC) for ethanolic and aqueous extracts of *R. sphenocleoides* leaves was <15 mg/ml and <10 mg/ml, respectively.

Conclusion: The results specify that the extracts of *R. sphenocleoides* has a higher capacity of reducing*E. histolytica* number *in vitro*. Moreover, these results showed that the extracts of *R. sphenocleoides* contain various bioactive compounds and therefore have various medicinal properties that can be used for the treatment of various diseases.

ARTICLE HISTORY

Received: August 31, 2020
Revised: August 31, 2020
Accepted: October 30, 2020

DOI:
10.2174/2211352519666201113173436

Keywords: *Reseda sphenocleoides*, *Entamoeba histolytica*, *in vitro*, FT-IR, GC-MS.

1. INTRODUCTION

Amoebiasis is a human disease that spreads worldwide, especially among children and it is an infection caused by protozoan parasite *E. histolytica* [1]. *E. histolytica* is an intestinal parasite that inhabits the large intestine of man but can also be found in the liver, lungs, and brain, causing serious consequences [2], about 50 million cases of dysentery and about 40,000 to 110,000 deaths per year [3]. Amoebiasis disease is ranked third on the list of parasitic protozoan infections leading to death after malaria and schistosomiasis [4]. The most effective and most used drug for the treatment of *E. histolytica* infection is metronidazole. However, it has been reported that this drug has very unpleasant side effects such as metallic taste in the mouth, dry mouth, vomiting, headaches as well as neurotoxicity and to a lesser extent nausea, pruritus, and dark colored urine [5, 6]. In addition, carcinogenic effects in embryos have been documented [7]. Due to the side effects of metronidazole, there is a necessity to search for an alternative for the treatment of amoebiasis with high activity, low toxicity, cheaper, and more effective and safer antiprotozoal agents is still a necessary goal.

Reseda sphenocleoides Deflers belonging to the family Resedaceae is endemic to southwest Arabia, Hadramaut, and Aden -Yemen [8, 9]. Yemeni people in the countryside treat

* Address correspondence to these authors at the Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen; Tel: +917709623213; E-mail: mansourabdulnabi@gmail.com

2211-3525/21 $68.00+.00

© 2021 Bentham Science Publishers

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

2020-2021.

Original Article

Determination of Haematological Effects of Extracts of *Reseda sphenocleoides* Leaves in Albino Rats Infected with *Entamoeba histolytica*

Mansour Abdulnabi Hadi Mehdi[1,*], Vidya Pradhan[1], Mazahar Farooqui[2], Fadel Yousif Salah Alarabi[1], Gozif Mohammed Nasr Omar[3]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, INDIA.
[2]Department of Chemistry, Maulana Azad College of Art, Science and Commerce, Aurangabad, Maharashtra, INDIA.
[3]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra, INDIA.

ABSTRACT

Objectives: This research was designed to examine improvements in some haematological parameters of *Entamoeba histolytica*-infected rats treated with extracts of *Reseda sphenocleoides* leaves. **Methods:** Twenty rats weighing between 200-220 g were divided into 4 groups (Each per group containing 5 rats). Fifteen rats were infected by oral administration (17×10^3 cell/ml) of *E. histolytica* obtained from the stool. Infected rats were classified in differentiated three groups A, B, C. In addition, the negative control group E. The groups (A and B) were administered with the ethanolic and aqueous extracts at the dose of 500 mg/kg body weight/day, the group C was administered with metronidazole, in a dose 500 mg/kg body weight (Positive control group). The negative control group E was uninfected and untreated. The hematological parameters in the different groups were monitored throughout the period of study which was 10 days on three stages. **Results:** The results show a significant increase at $P \leq 0.05$ in Red Blood Cell Count (RBC), Haemoglobin (Hb), Hematocrit (HCT), Mean Cell Volume (MCV), Red Cell Distribution Width (RDW), Procalcitonin Test (PCT) and Lymphocyte (LY) in groups which treated with *R. sphenocleoides* extracts compare with metronidazole drug and the negative control group during treatment stages. While the results show a decrease of significant at $P \leq 0.05$ in Platelet (PLT), Mean Platelet Volume (MPV), Platelet Distribution Width (PDW), Total White Blood Cell (WBC), Monocyte (MO) and Granulocytes (GR) in groups which treated with *R. sphenocleoides* extracts in comparison with the control groups of rats. The results also indicate no changes of significance at $P > 0.05$ in Mean Corpuscular Hemoglobin (MCH) and Mean Corpuscular Hemoglobin Concentration (MCHC) during treatment stages. **Conclusion:** The findings of this study, the efficiency of *R. sphenocleoides* extracts in improving blood standards in rats infected with *E. histolytica*.

Key words: *Reseda sphenocleoides*, Extract, *Entamoeba histolytica*, Haematological, Albino rats.

Submission Date: 17-04-2020;
Revision Date: 17-07-2020;
Accepted Date: 15-01-2021

DOI: 10.5530/ijper.55.2.81

Correspondence:
Mr. Mansour Abdulnabi Hadi Mehdi
Department of Zoology, Dr. Rafiq Zakaria, College for Women, Navkhanda, Aurangabad, Maharashtra, INDIA.
Phone no: +91 7709823233
Email id: mansourabdulnabi@gmail.com

INTRODUCTION

Amoebiasis infection represents a large and serious medical and public health problem in developing countries due to its nutritional consequences.[1] It is a dangerous disease that is transmitted to humans by infection with this parasite occurred by water and food contaminated with cysts of *Entamoeba histolytica*.[2] The trophozoites active invades of the intestines muscular and penetrates the intestinal muscle wall and feeds on the erythrocyte.[3] The trophozoites continue to corrode the intestinal epithelium, leading to ulcers in the intestinal muscular.[4] Most of the infection is asymptomatic; however, in symptomatic patients, it is associated with malabsorptive diarrhea.[5] Also, the incidence infection of these parasites can lead to low birth weight, reduced productivity in adulthood, stunted growth, reduced

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jalgaon Park,
AURANGABAD. (M.S.)

2020-2021

ISSN 0975-2366
DOI: https://doi.org/10.31838/ijpr/2020.12.04.07

Dr. Rafiq Zakaria College for Women
Aurangabad

Research Article

Evaluation of antiamoebic activity of *Ziziphus mauritiana* leaf extracts in rats experimentally infected with *Entamoeba histolytica*

MANSOUR ABDULNABI H. MEHDI[1,2*], MAZAHAR FAROOQUI[3], VIDYA PRADHAN[2]
[1]Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen
[2]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.
[3]Maulana Azad College of Art, Science and Commerce, Aurangabad, India.
*Corresponding Author
Email ID: mansourabdulnabi@gmail.com
Received: 24.04.20, Revised: 25.05.20, Accepted: 26.06.20

ABSTRACT
The present study aimed to evaluate the activity of extracts of *Ziziphus mauritiana* leaves against *Entamoeba histolytica* in experimentally infected rats.
In vivo anti-amoebic activity was assayed where twenty-one (*Rattus norvegicus*) rats were infected with *E. histolytica* and divided into seven groups. Groups (1,2 and 3) were treated with ethanolic *Z. mauritiana* extracts at doses 125, 250, and 500 mg/kg respectively for ten days. Groups (4,5 and 6) were treated with aqueous extract of *Z. mauritiana* at doses 125, 250, and 500 mg/kg respectively for ten days. Group (7) was left untreated as a positive control group.
The results showed a significant decrease at $p \leq 0.05$ in the numbers of parasite cells from the second day of treatment in all the groups treated with aqueous as well as ethanolic extract. This decrease gradually continued during the days of treatment until it reached zero on the 9th and 10th days of treatment for the dose of 500 mg/kg for both ethanol and aqueous extract respectively. Histopathological study showed that the ethanolic and aqueous extracts of *Z. mauritiana* at dose 500 mg/kg repairs the parasite damage in comparison with a range of positive and negative control groups.
The results strongly support the traditional use of *Z. mauritiana* leaves for the treatment of diarrhea.
Keywords: *Ziziphus mauritiana*, *Entamoeba histolytica*, *Rattus norvegicus*, antiamoebic, Histopathology.

INTRODUCTION

Amoebiasis is an intestinal infection caused by the protozoan *Entamoeba histolytica* with worldwide, high prevalence, and significant morbidity this parasite is one of the most widespread parasites with a broad geographic range and it is the second most common cause of death due to parasitic infection after malaria [1]. Data from the World Health Organization report about 50 million new cases of *E. histolytica* infection per year in the world, and over 100,000 deaths cases because of it worldwide per year [2, 3].

Clinical symptoms of amoebiasis vary, however it's most predominant symptom, abdominal pain, painful sudden bowel evacuation (tenesmus), and bloody diarrhea [4].

The typical treatment for amoebiasis is chemotherapy using one or more drugs, metronidazole, tinidazole, furoate, dehydroemetine, emetine, diloxanide chloroquine, iodoquinol, and paromomycin are the used drugs currently in the treatment of *E. histolytica* infection in the world [5]. Predominantly the metronidazole drug a first-line drug in the treatment amoebiasis. However, chemotherapeutic agents cause adverse reactions such as nausea, headache, metallic taste in the mouth and vomiting as well as neurotoxicity [6]. Moreover, mutagenic and carcinogenic effects have been observed in laboratory animals [7].

In our search for therapeutical alternatives for antiamoebic chemotherapy from Indian medicinal plants used in the treatment of diarrhoea, we investigated *Ziziphus mauritiana* (Indian jujube) an endemic species used in Indian traditional medicine it has been used in many diseases treatment such as in pulmonary ailments, gastrointestinal disorders, abdominal pains, halt nausea, vomiting, halt diarrhoea and dysentery [8, 9]. This study was performed to evaluate the efficacy of *Z. mauritiana* extracts

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-2021.



Asian Journal of Research in Biochemistry

8(1): 22-34, 2020; Article no.AJRB.63989
ISSN: 2582-0516

Dr. Rafiq Zakaria College for Women * Aurangabad *

Analysis of Bioactive Chemical Compounds of Leaves Extracts from *Tamarindus indica* Using FT-IR and GC-MS Spectroscopy

Mansour Abdulnabi H. Mehdi[1,2*], Abdul-hakim M. A. Al-Alawi[2], Ahmed Zain A. Thabet[3], Fadel Y. S. Alarabi[1,2], Gozif Mohammed N. Omar[2,4] and Vidya Pradhan[1]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001, India.
[2]Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen.
[3]Department of Chemistry, Maulana Azad College of Art, Science and Commerce, Aurangabad, India.
[4]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001, India.

Authors' contributions

This work was carried out in collaboration among all authors. Author MAHM designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors MAHM, GMNO, AZAT and FYSA managed the analyses of the study. Author VP managed the literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJRB/2021/v8i130171
Editor(s):
(1) Dr. Fabio Alberi, Sapienza University, Rome, Italy.
Reviewers:
(1) Edith Alba Luz Segovia Corrales, National University of Asuncion (Universidad Nacional de Asunción), Paraguay.
(2) Carmen Alejandrina Virgen, Universidad de Guadalajara, México.
(3) Nandkishore Thombare, ICAR- Indian Institute of Natural Resins and Gums, India.
Complete Peer review History: http://www.sdiarticle4.com/review-history/63989

Original Research Article

Received 14 October 2020
Accepted 21 December 2020
Published 14 January 2021

ABSTRACT

Tamarindus indica is one of the medicinal plants used in the treatment of various diseases traditionally.
Aims: This study was conducted to identify the phytochemical constituents of *T. indica* leaf extracts.
Methods: Using Fourier-transform infrared spectroscopy (FT-IR) and gas chromatography-mass spectrometry (GC-MS) to identification of bioactive compounds in extracts of *T. indica*.
Results: The FT-IR spectrum confirmed the presence of alcohol group, alkene group, amine group, carbonates, ethers, carboxylic acid and disulfides in both extracts.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

**Corresponding author: E-mail: mansourabdulnabi@gmail.com;*

Volume 7, Issue 12, 317-322 • Research Article 2020-2021. SJIF Impact Factor 6.044

EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES

http://www.ejbps.com

ISSN 2349-8870
Volume: 7
Issue: 12
317-322
Year: 2020

EFFECT OF ETHANOL EXTRACT OF *PANCRATIUM MAXIMUM* BULBS ON *ENTAMOEBA HISTOLYTICA IN VIVO*

Mansour Abdulnabi H. Mehdi[1,2]*, Vidya Pradhan[1], Khaled Nasher Q. Salem[3], Gozif Mohammed N. Omar[2,4] and Fadel Y. S. Alarabi[1,2]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.
[2]Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen.
[3]Department of Biology, Faculty of Science, Aden University-Yemen.
[4]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001, India.

*Corresponding Author: Mansour Abdulnabi H. Mehdi
Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

Article Received on 20/10/2020 Article Revised on 10/11/2020 Article Accepted on 30/11/2020

ABSTRACT

Knowledge of traditional medicine is still transmitted from generation to another in Yemen orally. *Pancratium maximum* has been used as a medicinal plant in traditional medical systems in southern Yemen. The study determined if administration of ethanolic extract *P. maximum* bulbs effects against *Entamoeba histolytica in vivo*. In this study, the antiamoebic activity of *P. maximum* was tested using experimental infections of *Entamoeba histolytica*, the most common cause of protozoa diarrhoea worldwide, in rats (*Ratus norvegicus*). Plants were extracted in ethanol. Rats were treated for ten days orally once a day, with the doses of 125, 250, and 500mg/kg of body weight. Rats' faeces were taken every day and examined by microscopy, the number of shed *E. histolytica* were counted using a haemocytometer. After rats' sacrifice and dissection, their colon were then processed for examination using histological sectioning and scanning microscopy. The results showed a significant ($P<0.05$) reduction in the numbers of parasite cells from the second day of treatment in all the groups treated with the ethanolic extract. This decrease gradually continued during the days of treatment until it reached zero on the 10th day of treatment for the dose of 500 mg/kg. The infected treated group (positive control) showed significant ($P<0.05$) increases in the *E. histolytica* numbers in the feces of rats during 10 days of infection. Histological studies of the infected rats indicate and no showed improvement after using ethanolic extract of *P. maximum* compared with the negative group (non-infected without treatment).

KEYWORDS: *Pancratium maximum, Entamoeba histolytica, Ratus norvegicus*, antiamoebic, Histopathology.

INTRODUCTION

Entamoeba histolytica is a protozoan parasite that causes a parasitic disease known as amoebiasis.[1] Which infected mammalian species, including humans, spread occurs via by the stool of infected people or animals in everywhere such as soil, water, food or surfaces, as well as by oral-anal sexual habits.[2,3] symptoms of amoebiasis include fever, stomach pain, bloody stools, and diarrhea.[4,5] In rare cases, *E. histolytica* can invade the liver causing hepatic amoebiasis and abscess. it may move to other parts of the body, such as the brain or lungs.[3] Fifty million people suffer from amoebic colitis and liver abscess caused by *E. histolytica* and it is responsible for an estimated 50,000 to 100,000 deaths yearly.[6,7] Infection with *E. histolytica* leads to excystation releases the trophozoites phase that invades the mucous layer of the large intestine which causes amoebic colitis, colonic ulceration, this deep ulcer maybe leads to peritonitis, which in turn leads to death.[8,9]

The most frequent treatment against amoebiasis are nitro-imidazoles such as metronidazole or tinidazole, or benzimidazole compounds. These treatments are effective but can produce significant undesirable side-effects such as headaches, metallic taste in the mouth, and vomiting as well as neurotoxicity.[9,10] Moreover, resistance to these treatments has been described by *E. histolytica*. Due to the side effects, the search for new, safe, and effective therapeutic alternatives to the treatment of amoebiasis has become necessary.

Pancratium maximum cloings to the family Amaryllidaceae, bulbous herb up to 20 cm long, 0.5-2 cm wide with 4-5 linear leaves, arising from a bulb. The bulb is globose, 4-6 cm in diameter, narrowed abo[illegible] a cylindrical neck, covered with several layers of dark reddish-brown papery tunics. The flowers are showy, resembling a white daffodil, consisting of [illegible] lanceolate lobes containing a similar to the cup, the

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

THE ANTIAMOEBIC POTENTIAL OF AQUEOUS EXTRACT OF *PANCRATIUM MAXIMUM* BULBS IN RATS INFECTED WITH *ENTAMOEBA HISTOLYTICA*

Dr. Rafiq Zakaria College for Women Aurangabad

Mansour Abdulnabi H. Mehdi*, Vidya Pradhan

Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.

ABSTRACT

The study determined if administration of aqueous extract *Pancratium maximum* bulbs effects against *Entamoeba histolytica* in experimentally infected rats.

Eighteen rats (200-250 g) were divided into 6 groups of 3 rats each. Groups I–5 were inoculated with *E. histolytica* (17×10^3cell/ml), followed by daily administration of 125, 250 and 500 mg/kg aqueous extract after the establishment of infection for groups 1-3. Group 4 was administered with doses of 500 mg/kg of metronidazole, while group 5 which oral with the parasite and untreated with plant extract and considered control positive while group 6 the negative control group which non-infected with the parasite and untreated with plant extract.

The results showed significant ($P<0.05$) reduction in the numbers of parasite cells from the second day of treatment in all the groups treated with aqueous extract. This decrease gradually continued during the days of treatment until it reached the lowest level on the 9th and 10th days of treatment for the dose of 500 mg/kg. Infected treated group showed significant ($P<0.05$) increases in the numbers of *E. histolytica* in the feces of rats during 10 days of infected. Histological studies of the infected rats indicate and no showed improvement after using aqueous extract of P. maximum compared with the metronidazole group.

Keywords: *Pancratium maximum, Entamoeba histolytica, Rattus norvegicus,* antiamoebic, Histopathology.

1. INTRODUCTION

Entomoeba histolytica is an infection of the intestinal tract that causes the human disease known as amoebiasis, the infection with *E. histolytica* is increased in tropic and subtropic regions, particularly in suffer from poor health and living conditions sanitation areas (Shaker *et al.*, 2018). Amoebiasis comes third in terms of mortality parasitic diseases after Malaria and schistosomiasis (Samie *et al.*, 2012). It is responsible for estimated 100,000 deaths per year and at least 50 million

PRINCIPAL Dr. Rafiq Zakaria College For Women Maulana Azad, Jubilee Park, AURANGABAD.

ISSN 0975-2366
2020-2021 DOI: https://doi.org/10.31838/ijpr/2021.13.01.175

Research Article

The Effect of Extracts of *Annona squamosa* on Protoscolices in *Echinococcus granulosus in Vitro* and *in Vivo*.

FADEL Y. S. AL-ARABI[1]*, MANSOUR ABDULNABI H. MEHDI[1], GOZIF MOHAMMED N. OMER[2], AIDAH M. ALI[3], MAZAHAR FAROOQUI[4] AND VIDYA PRADHAN[1]
[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad 431001, India.
[2]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India.
[3]Department of Microbiology, Dr. Babasaheb Ambedkar Marathwada University, Osmanabad, Campus, India.
[4]Maulana Azad College of Arts Science & Commerce Aurangabad 431001, India.
*Corresponding Author
Email ID: alaraby1100@gmail.com
Received: 22.09.20, Revised: 21.10.20, Accepted: 18.11.20

Dr. Rafiq Zakaria College for Women Aurangabad

ABSTRACT
The present paper aimed at determining the effect of aqueous and alcohol extracts of the leaves of the *Annona squamosa* plant on the vitality of the protoscolices of sheep *in vitro* and *in vivo*.
The results of the study showed that alcohol and aqueous extract solutions had an inhibitory effect on protoscolices compared with control group over all concentration range. The percentage of homicide was measured by using the eosin stain test, which depends on changing the green color of the alive protoscolices to red after killing it. The study revealed that the concentration of 100 mg/ ml was the best concentration for killing the protoscolices after 48 hours of exposure. It was observed that when laboratory animals were injected with the protoscolices treated with the extracts, the protoscolices failed in the formation of secondary hydatid cysts.

Keywords: Hydatidosis, *Echinococcus granulosus*, protoscolices , *Annona squamosa*.

INTRODUCTION

Hydatidosis was and is still a real challenge to doctors and veterinarians and those who interested in parasitology, and by threatening human health and life, and beyond harm to poultry, It represents the economy of the site of large economic losses, which obliged to think side by side at the level of the individual society and the state in finding different means that can reduce of spread the disease and control it.
The importance of this study is to show the effect of the extract of alcoholic and aqueous of the leaves of the plant *A. squamosa* in the vitality of the protoscolices of *Echinococcus granulosus* of sheep origins *in vitro* and their growth *in vivo*.
Annona squamosa L.is commonly known as (custard apple). It is a member of Annonaceae family, comprising approximately135 genera and 2300 species [1,2]. *A.squamosa* is a medicinal plant used in alternative medicine for ancient times.
Various parts of *A.squamosa* have been used such as fruits, seeds, and leaves to treat many diseases [3]. The plant extract is a good tonic and it has the ability to increase blood, increase muscle strength, relieve the heart and relieve vomiting [4].It is good for washing hair and eliminating lice [5]. Plant extracts are used to heal wounds and treat Guinea worms [6,7,8].The aqueous extract of plant leaves also has an anti-diabetic activity [9,10] . Leaf extracts also showed activity against bacteria and fungi [11,4]. Seed extracts play an active role against cancer cells, especially skin and colon cancers [12,13,14].

MATERIALS AND METHODS

Plant source: Leaves of the plant under study were obtained from the campus of Dr Rafiq Zakaria College for women and they were authenticated. The leaves are dried under shadow and grinded to powder.
Preparation of plant extracts:
Preparation of aqueous extracts: The plant extracts were prepared according to the method adopted by Mehdi et al., [15], put (400ml) of distilled water in a clean glass beaker and (40gm) of plant powder was added, then it was placed the magnetic stirrer solution for (24 hours) at room temperature, then solution was filtered by using stirred four layers of gauze medical and then placed in a centrifuge for (10 min) at a speed of (3000 rpm). Then it was placed in an electric oven at (40-60) degrees Celsius for evaporating water and then obtaining a dry powder which was scraped and stored in refrigerator in sealed bottles until use [16].
Preparation of Alcoholic extract: The plant leaves powder (40gm) was taken in Soxhlet apparatus. Then (400 ml) ethyl alcohol (70%) was added. The plant materials are extracted till the color extract disappears it was left undisturbed. The solvent was evaporated by rotary evaporation. The mixture was finally placed in clean Petri dishes. Then

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-2021.

IJBI 2 (1), (JUNE 2020) 52-62

Dr. Rafiq Zakaria College for Women



International Journal of Biological Innovations

Available online http://ijbi.org.in | http://www.ijbi.org.in/journals.php

DOI: https://doi.org/10.46505/IJBI.2020.2108

E-ISSN: 2582-1032

Research Article

HOLISTIC SURVEY ON PREDATORY LADYBIRD BEETLE DIVERSITY AT SELECTED REGIONS OF NASHIK DISTRICT (MAHARASHTRA), INDIA

Shaikh Yasmeen* and Punam Dogaje

Department of Zoology
Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India
*Corresponding author: shaikhyasmeen2786@gmail.com

Received: 15.04.2020 Accepted: 18.05.2020 Published: 25.05.2020

Abstract: A survey was conducted during January 2016 to December 2017 in four sites of Nashik to study the diversity of the predatory coccles. During the present study a total of 08 species belonging to 03 genera and 4 subfamilies were recorded from the area studied. Subfamily Chilocorinae represented by 2 species belonging to 2 genera, Subfamily Coccinellinae by 4 species belonging 03 genera, Subfamily Scymninae by 2 species belonging to 2 genera and Subfamily Stichotrichinae by 2 species belonging to the same single genus from the different sites of the study area. The Subfamily Coccinellinae is the most variant and abundant among all the four subfamilies.

Keywords: Biodiversity, Coccinellids, Fauna, Ladybird beetles, Nashik

INTRODUCTION

Biodiversity is defined as the variability among living organisms from all sources including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between the species and of the ecosystems. The importance of this definition is that it draws attention to the many dimensions of biodiversity. The biodiversity has different levels and scales (Verma, 2016). It explicitly recognizes that species and ecosystems can be characterized by various abiotic, ecological and genetic features and that species richness does not exist alone and there is a key feature of biodiversity. It is only a multidimensional assessment of biodiversity that provides insights into the relationship among changes in the diversity, changes in ecosystem functioning and ecosystem services. There is a necessity of ecological balance for widespread biodiversity (Verma, 2017a). Agricultural activities cause more prominent changes viz., land and vegetation characteristics on smaller temporal scale and great physical process at larger spatial scale (Verma and Hardia, 2017). Unsustainable agriculture has many negative effects (Verma, 2017a) and disturbs the ecological balance (Verma, 2017a). The

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD, (M.S.)

Think India (Quarterly Journal)
ISSN: 0971-1260 Vol-22, Special Issue-13
National Conference on
Psychological Contributions in Sustainable Human Development in Sports, Organizations and Community Health
Date of Conference: December 20-21, 2019,
Organised by **Department of Psychology, Physical Education & Sports and Home Science V.P.S.P.M.S. Arts, Commerce & Science College, Kannad**, Aurangabad, Maharashtra 431103 India

Psychological Application: Aggression and Anxiety in Different Levels of Football Player's

Dr. Faisal Ahmed
Asst. Professor & Head
Dept. of Physical Education
Dr. Rafiq Zakaria College for Women,
Aurangabad.

Abstract

Hostility and Anxiety are unavoidable physiological and natural cadenced cyclic procedure to each male and female. It is seen that the Aggressive Athletes are all the more quick, dynamic, solid, exceptionally energetic and anxious to crush the rival. Uneasiness is an enthusiastic dependability, extreme mindedness and certainty which accomplishes an ideal objective.

So as to evaluate the critical contrasts between elite and low execution of football players based on Aggression and Anxiety (60) examples were taken and t-proportion was applied setting its level at 0.5.

Discourse, Result and reference were watched and referenced.

Keywords: Aggression, Anxiety, Different Levels, Football Player's

Introduction

Hostility and Anxiety is unavoidable physiological and organic cadenced cyclic procedure to each male and female, capability in any game and game requires the Ideal mix and cooperation of fantastic capacities created to a perfect characteristics. Anyway execution proportions of this energizing focused games speak to a significant methods for Aggressive motivations.

*Copyright © 2019 Author, Think India (Quarterly Journal)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-2021.

https://doi.org/10.33451/florafauna.v26i2pp243-246
ISSN 2456 - 9364 (Online)
ISSN 0971 - 6920 (Print)

FLORA AND FAUNA
2020 Vol. 26 No. 2 PP 243-246

An Investigation of Phyllosphere Mycoflora of *Phyllanthus amarus*

Sumia Fatima and *Priya Lokare

Pesticides and Plant Protection Research Laboratory
Dr. Rafiq Zakaria College for Women,
AURANGABAD-431001 (M.S.) INDIA
*Corresponding Author
Email- priyalokare2@gmail.com

Received : 25.08.2020; ***Accepted*** : 22.09.2020

ABSTRACT

Most of the medicinal plants die because of disease attack. There are many reasons to cause diseases. Very few information is available about the incidence, prevalence, epidemiology and management of medicinal plants diseases. There is little information or research work on diseases of medicinal plants. *Phyllanthus amarus* is one of the significant medicinal herbs. A main herb in the Indian Ayurvedic Medicine System. Stomach, genitourinary organ, liver, kidneys, and spleen, as well as gonorrhea, menorrhagia, and other genital diseases, use the whole plant, *P. amarus*. In this study, there were a total of six fungi found; they are, *Aspergillus niger*, *A. nidulans*, *Alternaria* sp., *Fusarium* sp., *Passalora* sp.(Syn. *Cercospora* sp.), and one Unidentified. Most of the mycoflora were found on leaf surfaces. From the analysis, it is found that very negligible research has been done on phyllosphere fungal diseases. Therefore, care must be taken in this case as phyllosphere fungi also caused significant loss to the herb by damaging stem, branchlets, fruits, flowers. A total of six isolated and reported fungi have infected an insignificant degree of *Phyllanthus amarus*.

Figures : 02 References : 12 Table : 00
KEY WORDS : *Phyllanthus amarus*, Phyllosphere fungi, P.D.A. Medium.

Introduction

The term 'medicinal plant' refers to the different types of plants used in herbalism ('herbology' or 'herbal medicine'). The word "herb" was derived from the Latin word "herba" and the old French word "herbe"[1,4]. Nowadays, herb refers to any plant part, such as fruit, seed, stem, bark, vine, leaf, stigma or root. Earlier, the term "herb" was applied only to non-woody plants, including trees[4].

Phyllanthus amarus Schumach. and Thonn. is one of the most important medicinal herbs. It is an essential herb in the Indian Ayurvedic Medicine System. Used in the stomach, genitourinary system, liver, kidneys, and spleen. The entire plant is used for gonorrhea, menorrhagia, and other genital diseases[5]. *Phyllanthus amarus* or sleeping plant is also known as Bhui Amla in India. It is an annual herb, 15-45cm height.

Phyllosphere is a term used in microbiology to refer to total over-the-ground portions of plants as an environment for microorganisms[10]. In this research work, we studied the phyllosphere fungal diversity by collection, isolation and identification methods.

Phylloplane is a diverse terrestrial ecosystem dominated by a variety of microorganisms, including bacteria, fungi, and grass. Phylloplane fungi are the growing mycota on the surface of the leaf. Phylloplane fungi have been extensively studied in comparison to endophytic fungi, saprophytes, and pathogenic fungi. The phylloplane fungal diversity of *P. amarus* has also been studied; in their analysis, only one fungus (*Scopulariopsis* sp.) was found isolated from the leaves of *P. amarus*[9].

Materials and Methods

Collection of Infected *P. amarus*- Infected branchlets of *P. amarus* were collected in airtight plastic bags from Loknete Ramdas Patil Dhumal Arts, Science and Commerce College, Rahuri, District- Ahmednagar (M.S.), 413 705 and stored in the refrigerator at 5-degree Celcius for further study.

Preparation of Potato Dextrose Agar Media (P.D.A.)-

Composition –

Peeled Potatoes -200g
Dextrose sugar- 20g
Agar Powder – 20g
Distilled water – 1000ml

Procedure- The potatoes were peeled and weighed 200g and then sliced into small parts using a sterile knife. The diced potatoes were moved to a conical flask containing about 1000 ml of purified water and boiled for 20 minutes. The supernatant was purified and extracted from the muslin cloth. Dextrose (20 g) and agar (20 g) have been

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-21

© 2021 IJRTI | Volume 6, Issue 5 | ISSN: 2456-3315

Biological Control of Seed borne Pathogen of Spices

Baig Mumtaz

Dr.Rafiq Zakaria College for Women, Aurangabad.
Maharashtra 431001.India

Abstract: **Spices are frequently infected by fungal pathogen mostly which can include seed borne fungi. In majority of cases the fungal pathogen is present already within or on the surface of seed and which are responsible of the deterioration of seeds in storage which makes the seeds unfit for consumption, meanwhile also causes seed rot and seedling plant diseases .Seeds are the most critical input in crop production 90% of all the world .In the past few years chemical are widely used for seed treatment .However rising their negative impact on the environment and human health. The aim of the present investigation is to determine the prevalence of seed borne fungi of spices seeds and control with plant extract .The experiment was carried out in pathology laboratory for efficacy of extract as seed treater. Four spices cardamom, Clove, Pepper and Fennel has selected for the study. The major predominant identified fungi were Alternaria solani, Aspergillus flavus, A.niger, Fusarium sp. In this study evaluated Marigold leaves for observing the action of this plant extract on seed borne fungi of spices. The study revealed that the most effective methanolic extract against Alternaria solani has been observed.**

Keywords: **Aspergillus flavus, deterioration, Methanolic etc.**

Introduction:

Spices are essentially flavouring agents having antimicrobial properties (Atanda et, al 2006).Spices are the plant substance from exotic or indigeneous origin with strong aroma and taste. Spices are associated by fungi in the field during storage ,transport processing and handling (Elshafie et, al 2002).Fungi are normal component of food mycoflora and cause spoilage and mycotoxin production .The most frequent fungal pathogen of selected spices such as Alternaria ,Aspergillus ,Penicillium and Fusarium(Koci et, al 2007).Marigold Tagetes sp erecta L belongs to family Asteraceae (Compositae) and the genus Tagetes.Marigold gained popularity among florist on account of its easy cultured and wide adaptability .It is originated from Africa ,Mexico and in British society ,Tagetes erecta L..are erect tall growing 90 cm plants having large globular flowers .Yellow ,orange ,golden yellow etc. Common cultivated varieties Apricot .This plants also represents as medicinal as a rich source of anti- microbial agents (Mahesh and Satish 2008) There are several reports on the antimicrobial activity of different herbal botanical extracts in different regions of the world(Singh and Pandey 1998; Kuttan 1996). The Plant extract are capable for the control of seed borne Pathogen (Baig Mumtaz 2006).Marigold plants are rich in orange yellow carotenoid and are used as food colorant .It is also used medicinally as a condiments and herbal tea. It has medical benefits such as remedy for colds, stomach problem antiseptic antiparasitic ,insecticide .It is also used for healing effects on wounds,cuts skin infection (Rahimi etal). Now-a-days use of chemical for control of crop and seed deterioration is being discouraged due to health hazard and also there is environmental pollution. Also the fungicides are very expensive for the farmers seed treatment ecofriendly botanical fungicides extracted from plants have drawn the attention of plant pathologist all over the world. Use of the plant extract for seed treatment has open a new way method for controlling the seed borne fungal pathogen of spices.

In present investigation was to observe the antifungal activity of Marigold leaves against pathogenic fungi like Alternaria solani, Aspergillus flavus, and Fusarium oxysporum.

Material and Methods:

Collection of Seed Sample:

The cultivars of seed sample were collected from retailer shops and godowns. The seeds were tested as recommended by the rules of the International Seed Testing Association (ISTA) 1966.

Detection of Seed borne Mycoflora of spices seeds:

Mycoflora associated with the seeds different cultivars was detected by using standard blotter paper method (ISTA) 2011.

Identification of Isolated fungi:

The isolated fungi were identified using macroscopic features based upon colony morphology and microscopic observation of mycelia and spore .The test microorganism are like Alternaria solani, Aspergillus flavus, and Fusarium oxysporum etc.

Collection of Plant material and preparation of leaf extract:

The plant of Marigold spp was selected for investigation .Its leaves were collected and identified with the help of taxonomic key and confirmed.The leaves were collected and sun dried leaves extracted with methanol and ethanol using a Soxhlet apparatus in 25%, 50%, 75% and 100%.The extract were filtered and stored at 4°C in air tight bottles.

Disc Diffusion Method:

Disc diffusion bioassay was used for testing antifungal activity of plant extract (Linday 1962).The potato Dextrose Agar medium was prepared .The extraction impregnated disc absorbs moisture from the agar and fungicide diffuses into the agar medium. The fungus were inoculated in PDA and incubated at 37+_°C and all test fungi were as inoculums. After few minutes sterile disc

Dr. Rafiq Zakaria College for Women Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Rafiq Zakaria Tree Park, Aurangabad. (M.S.)

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College for Women, Aurangabad.

our disc placed with 25 % ,50% ,75% and 100 % methanolic and ethanolic extract which were kept at equal distance in petriplate. The petriplates were kept at 37 ℃ for 48 hours for incubation. The inhibition zone was measured and compared with the standard reference .Three to four replicates were maintained for each treatment.

Observation Table : Effect of different concentration of leaf extract on inhibition of Mycelial growth.

Solvent Used for Extraction	Fungal Species	Different Concentration in Percentage				
		25%	50%	75%	100%	control
Methanol	Alternaria Sp.	0.9	1.3	1.9	3.0	-
	Asperfillus flavus	0.5	0.6	0.8	1.3	-
	Fusarium sp.	0.3	0.4	0.6	1.0	-
Ethanol	Alternaria Sp.	0.3	0.4	0.7	0.9	-
	Asperfillus flavus	0.3	0.4	0.5	0.6	-
	Fusarium sp.	0.1	0.2	0.3	0.5	-

Result and Discussion:

Effect of different solvent extracts of Marigold tagetes sp. leaves were used against three fungi in table found growth inhibitory as zone of inhibition were observed .In present investigation it is clear that among two extract the most effective was methanolic extract of marigold spp against Alternaria solani has been observed. Study of screening the natural plant extract against fungal and bacterial pathogens was well illustrated in literature (Ahmad etal. 2000; Fabry etal ;1998;DeBoer etal.2005Nair etal. 2005 ;Chung etal. 2004. Thus such plants are source of antifungal agent and further investigation are necessary to identify the bioactive agents.

Conclusion:

Many of today's synthetic chemical fungicides are expensive and have side effects are hazardous effect on environment. The present investigation has revealed that the extract of marigold species possess remarkable antifungal activity against many pathogenic fungi .This activity is due to presence of Cis-ocimene, E-oscimene ,b-caryophyllene E-tagetone and di-limonene are antibiotic principles are defensive mechanism of plants against different pathogen .This study recommend the use of natural botanical plant extracts for safer than the chemical fungicides.

Acknowledgement:

The author express gratitude to the Dr. Babasaheb Ambedkar Marathwada University ,Aurangabad for financial assistance during present investigation also thank ful to Principal Dr. Maqdoom Farooqui for providing required laboratory facility.

References:

Atanda o.o.Akpan I and oluwafemi.F.2006.The potential of some spices essential oils in the controls of A.parasiticus and aflatoxin production .Elesevier.1-7

Baig Mumtaz 2006: Seed health Testing: oil seeds Ph.d thesis submitted to Swami Ramanand Teerth Marathwada university ,Nanded.

De Boer H.J, kool A,Broberg etal. Antifungal and antibacterial activity of some herbal remedies from Tanzania .J Ethnopharma co.96:461-469.

Elashafie A.E, Al-Rashdi, T .A.A Bahry 2002 Fungi and aflatoxins associated with species in the sultanate of oman Mycopathologia 155(3):155-160

Koci-Tanackov S.D Dimi G.R and Karali D.2007. Contamination of species with moulds potential producers of sterigmatocystine A .PTEFF. 38:1-190.

Linday E.M Practical Introduction to Microbiology (E and FN Spon Ltd) 1962:77 2005.

Mandeel, Q.A 2004.Fungal contamination of some imported spices. Mycopathologia 159:291-298.

Rahimi R Shams Mr.2010.Areview of the efficacy of traditional Iranian medicine.world J.Gastroenterol 16:4504 -4514.

SinghV.P and Paney R.P.1998.Ethanobotany of Rajasthan ,In India.Scientific Publisher Jodhpur:India .212

Satish S.Raghavenda MP,Mohana DC and Raveesha K.A (2008).Antifungal activity of a known medicinal plant.Mimusopselengi L against grain moulds.j Agri Technol 4(1) 151-165.

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College for Women, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-21

© 2021 IJRTI | Volume 6, Issue 8 | ISSN: 2456-3315

EVALUTION OF MYCOFLORA OF FENUGREEK SEED

[1]Khan Farheen Kauser, [2]Baig Mumtaz

Dr. Rafiq Zakaria College for Women, Aurangabad 431001
Maharashtra India

Abstract: **In present investigation study of mycoflora associated with seeds of Fenugreek (*Trigonella foenum graecum L*) six fungal species like *Alternaria alternate, Aspergillus flavus, Aspergillus nigar, Fusarium solani, penicillium italicum, Mucor and Rhizopus stolonifer*, were found using agar plate and standard blotter test. Seed borne fungi are losses the production and affect the seed health.**

Keywords: **Fenugreek, seed borne, mycoflora, seed health**

Introduction:

Fenugreek (Trigonella foenum graecum L) is an annual herb plant belongs to family Fabaceae .fenugreek grows under arid and semi arid region of India during rabi season , its commonly known as " Meethi" its seeds and leaves are common ingredient in dishes of Indian subcontinents ,and have been used as a culinary ingredient since ancient times [Debaggio.Thomas et al 2009] fenugreek is believed have been into cultivation in the near east , it is uncertain which wild strains of the genus Trigonella gave rise to domesticated fenugreek .India is a major producer ,with fenugreek production in India derived from numerous states , Rajasthan accounts for over 80% of India's output [V.A Pathasaraty et al] fenugreek seeds are rich source of fibres, protein, vitamin B and dietary minerals In 100gm amount of fenugreek seeds provides 1,350kilojoule (323kcal)of food energy and contain 9%water,58%carbohydrats,23%protein and 6%fat, with calcium 40%of daily value Fenugreek is used in traditional medicine to promote digestion, induce labour, increase Breast feeding milk supplying nursing mother and reduced blood suger level in diabetes [Bazzano et.al 2016] fenugreek is used for Eritean and Ethiopian cuisine the word of feenugreek in Amharic and the seeds is used in Ethiopia as a natural herbal medicine in the treatment of diabetes [Zeribun shenkute et al 2009]

Seeds play an important role for the production of crops ,which are carries of some important seed born disease which cause losses in yields seed mycoflora affects the germination (Tamuli and Boruah 2001)

In this investigation was carried out to identify seed mycoflora of fenugreek seeds

Material and Methods:

Collection of Seeds:

Seeds of *Trigonella foenum-graecum L* were collected from different local market, retailer shop and godowns of Aurangabad district they were mixed and then preserved in a room temperature during the studies .

Isolation and Identification of Seed Born Fungi:

The mycoflora of fenugreek seeds were isolated by Blotter paper method and Agar plate method as recommended by International Seed Health Testing Association ISTA 1996 .

Agar Plate Method: Presterilized petriplates were taken pour with Glucose Nitrate Agar medium (GNA).After cooling 30 seeds per plate to be studied were equidistantly placed .The plates were incubated at 25+_2°c.After 7 days seeds were examined under microscope by preparing slides.

Standard blotter paper method: A blotter paper of 8.5 cm diameter were soaked with sterile distilled water and placed in petri plates 10-15 seeds were placed equidistantly on moist blotter paper . The plates were incubated at 25+_2°c.After 7 days seeds were examined under microscope by preparing slides.

Table: Seed mycoflora of fenugreek seeds by Agar plate (A) and Blotter paper (B)

Sr.no	Associated seed mycoflora	Agar plate method	Standard Blotter paper
1	*Aspergillus flavus*	+	-
2	*Aspergillus nigar*	+	+
3	*Alternaria alternate*	+	-
4	*Fusarium solani*	-	+
5	*Penicillium italicum*	+	+
6	*Rhizopus stolonifer*	-	-
7	Mucor spp	+	+

Present +, Absent -

Result and Discussion:

The study reveals the isolation of fungi from the seeds of fenugreek collected from Aurangabad district Maharashtra . Six fungal species viz. *Alternaria alternate, Aspergillus flavus, Aspergillus nigar , Fusarium solani, penicillium italicum, and Rhizopus*

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College for Women, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park
AURANGABAD (M.S.)

tolonifer were found . Isolation of Fungi with respect to the different isolation methods Agar plate method shows higher number of fungal species as compared to respective method.

Conclusion:

Fenugreek is a interesting herb with diverse uses and many potential Health benefits. The present investigation resulted in the isolation and identification six species of fungi belongs to different genera. Improving the conditions of fenugreek seeds under processing, storage and transport and continuous mycological and mycotoxicological control prior to food processing is necessary to lower the risks from incompatibility of seeds in order to efficiently protect human health and for welfare

References

Agarwal , V.K and J.B (1996) principle of seed pathology 2nd ed. CRC Press
Baig Mumtaz and Sumiya Fatima (2017) Evaluation of Mycoflora and Mycotoxins Contamination of Mustard Seeds
Baig Mumtaz (2020) Assessment of mycoflora of some spice from Aurangabad, IJRTI/volume ,5/ISSN:2456-3315
Buzzano azzano, A.N., R. Hofer, S. Thibeau, V. Gillispie, M. Jacobs and K.P. Theall (2016). "A review of herbal and pharmaceutical galactagogues for breast-feeding". Ochsner J., 16(4): 511– 524.
Debaggio Thomas Tucker Arthur O (2009) the Encyclopedia of herbs ISBN 9781604691344 Retrieved 2021
ISTA (1996) International Rules of seed health testing Int. Seed test Asst.31:1-152
Nisha Moshahary ,Riya Poul (2020) seed mycoflora of fenugreek plant Archives volume 20 no2,
Tamuli and bourah (2001) seed mycoflora of Aarwood plant
V.A Parthasarathy,Kandinnan and V.srinivasan (ed) Fenugreek organic spices ,new India publishing Agencies p.694
Zerihun Shenkute (2009) Ethiopian Traditional and herb. Ethno Med .university of Washington

Dr. Rafiq Zakaria College for Women, Aurangabad.

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College for Women, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Study of Bacteria colony on agar surface as Fractal

S.Q. Chishty[1] Mohd Khizar[2]

1: Dept. of Physics Dr. Rafiq Zakaria college for women Aurangabad. M.S. India

2: Dept. of Physics, Kohinoor college of arts Science and commerce Khultabad M.S. India

Abstract:

In the present study fractals are grown using the bacteria colony. For this purpose cell is designed and the growth processes are studied using this cell. Different colonies are studied at different temperatures. There are large number of parameters which control the growth process. In the on going process images are photographed with the help of video camera. Fractal dimensions of these shapes are calculated using computerized box counting method. The results obtained are compared and discussed. It was seen that the growth satisfy the Laplace equation.

Key words: Bacteria colony, fractals, fractal dimensions

Introduction :

The study of Fractal growth is one of the physical phenomena observed in many growth experiment. For example dielectric breakdown, bacteria colonies, aggregation models etc. All these process are governed by diffusion limited aggregation (DLA) [1,2] , the structures so developed are branched and self similar dendrites are with increasing and multiple branches. These shapes are interested to study due to their particular nature. Dimensions of these shapes are fractured and known as fractal dimensions

There exists a great variety of possible patterns which can be classified based upon their growth mechanism and geometrical properties [3]. The patterns which generally appear are divided into two groups depending on the stability . It intended to demonstrate that a tip can be either unstable (a) and go through repeated splitting shown in figure 1 and lead to dendritic growth. Unstable tips results in disordered structures with no apparent symmetry. If tips are stable in the sense that small perturbations around their stationary shape decay relatively quickly, the obtained pattern have a symmetry of varying degree[4] Figure 1show almost complementary occurring possibilities. In some cases the interface bounds a region which is homogeneous on a length scale comparable to the size of the object[5-6] While under different conditions the

Dr. S. Q. Chishty
Dept. of Physics
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Study of Bacteria colony on agar surface as Fractal

S.Q. Chishty[1] Mohd Khizar[2]

1: Dept. of Physics Dr. Rafiq Zakaria college for women Aurangabad. M.S. India

2: Dept. of Physics, Kohinoor college of arts Science and commerce Khultabad M.S. India

Abstract:

In the present study fractals are grown using the bacteria colony. For this purpose cell is designed and the growth processes are studied using this cell. Different colonies are studied at different temperatures. There are large number of parameters which control the growth process. In the on going process images are photographed with the help of video camera. Fractal dimensions of these shapes are calculated using computerized box counting method. The results obtained are compared and discussed. It was seen that the growth satisfy the Laplace equation.

Key words: Bacteria colony, fractals, fractal dimensions

Introduction :

The study of Fractal growth is one of the physical phenomena observed in many growth experiment. For example dielectric breakdown, bacteria colonies, aggregation models etc. All these process are governed by diffusion limited aggregation (DLA) [1,2] , the structures so developed are branched and self similar dendrites are with increasing and multiple branches. These shapes are interested to study due to their particular nature. Dimensions of these shapes are fractured and known as fractal dimensions

There exists a great variety of possible patterns which can be classified based upon their growth mechanism and geometrical properties [3]. The patterns which generally appear are divided into two groups depending on the stability . It intended to demonstrate that a tip can be either unstable (a) and go through repeated splitting shown in figure 1 and lead to dendritic growth. Unstable tips results in disordered structures with no apparent symmetry. If tips are stable in the sense that small perturbations around their stationary shape decay relatively quickly, the obtained pattern have a symmetry of varying degree[4] Figure 1show most commonly occurring possibilities. In some cases the interface bounds a region which is homogeneous on a length scale comparable to the size of the object[5-6] While under different conditions the

Dr. S. Q. Chishty
Dept. of Physics
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, AURANGABAD. (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

IJBPAS, July, 2021, 10(7): 2486-2494

ISSN: 2277–4998

International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS)

'A Bridge Between Laboratory and Reader'

www.ijbpas.com

SYNTHESIS OF PYRAZOLINES (substituted 4,5-dihydro-5-(2-methoxynaphthalen-6-yl)-1*H*-pyrazol-3-yl)(phenyl) USING ALUM [KAl $(SO_4)_2.12H_2O$] AS AN EFFICIENT AND NOVEL CATALYST AND THEIR MICROBIOLOGICAL ACTIVITY

ANSAR R. SHAIKH[1*], MAZAHAR FAROOQI[2], CHISTY S.Q.[3], SYED ABED[1], SHAIKH SIRAJ N[4]

1: Government College of Arts and Science, Aurangabad, (M.S), India 431 001

2: Maluana Azad College, Aurangabad Arts, Science & Commerce, Aurangabad (M.S) 431001

3: Dr Rafiq Zakaria College for Woman, Aurangabad, (M.S), India 431 001

4: HOD & Associate Professor, Ali Allana College of Pharmacy, Akkalkuwa, Dist. Nandurbar, (M.S), India 425415

***Corresponding Author: Dr. Ansar R. Shaikh: E Mail: adaishan@rediffmail.com, abed3dec@gmail.com; Phone No.: +91 9423743785/ +91 9028861122**

Received 25th Aug. 2020; Revised 20th Sept. 2020; Accepted 11th Oct. 2020; Available online 1st July 2021

https://doi.org/10.31032/IJBPAS/2021/10.7.5587

ABSTRACT

Herein we report, Synthesis of Pyrazolines using alum as a novel catalyst. Alum [KAl $(SO4)_2 \cdot 12H_2O$] performs as a novel catalyst for the synthesis of Pyrazolines from various substituted Chalcones [various substituted (E)-3-(2-methoxynaphthalen -6-yl)-1-phenylprop-2-en-1-one)] in good to excellent isolated yield (60–76%) using ethanol as a solvent for reaction. The remarkable advantages offered by this method is an inexpensive and easily available catalyst, a simple procedure, mild reaction conditions and faster the reactions. The structures of synthesized compounds elucidated using IR Spectroscopy, Mass Spectrometry, ^{1}H NMR Spectroscopy and ^{13}C Spectroscopy.

Keywords: Pyrazolines, Alum, Substituted Chalcones, Microbiological activity

Dr. S. Q. Chishty
HEAD
Department of Physics
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park,
Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park
AURANGABAD. (M.S.)

International Journal of Interdisciplinary Innovative Research & Development (IJIIRD)
ISSN: 2456-236X
Vol. **05** Special Issue **01** | **2020**

Rafiq Zakaria College for Women Aurangabad

Synthesis and Structural Analysis of Ni-Zn Ferrite Nanoparitcles

Raje Shaikh B.B.[1], Chaitali Vilasrao More[2], Bhagwan G Toksha[3], Syed Qadeeruddin Chishty[4]

[1] *Assistant Professor, Department of Physics, Government College of Arts and Science, Maharashtra, India*
[2] *Research scholar, Department of Physics, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra, India.*
[3] *Assistant Professor, Basic Sciences and Humanities department, Maharashtra Institute of Technology, Maharashtra, India*
[4] *Associate professor, Department of Physic, Dr. Rafiq Zakaria College for women Aurangabad, Maharashtra, India*

ABSTRACT

Ferrite composition having general formula Ni1−xZnxFe2O4 with 0.7 as Ni0.7Zn0.3Fe2O4 was prepared by sol gel auto combustion method. The method used for synthesis involves use of nitrates of respective elements and by keeping metal nitrate to citrate ratio 1:1. The article is mainly focused on synthesis and structural properties were studied by means of X-ray diffraction, Thermogravimetry (TGA) and Scanning electron microscope to confirm chemical composition, to determine the particle size and to study surface morphology. Particle Size Analyzer was employed to determine the particle size of the sample. The X-ray diffraction analysis confirmed the single-phase formation of the samples. The lattice parameter obtained from XRD data was found in agreement with literature.
Keyword Ferrites, Sol-gel auto combustion, nanoparticles, synthesis, Structural properties

1. INTRODUCTION

In spinel structure ferrites both divalent and trivalent cations are distributed among tetrahedral (A) and octahedral (B) sites. The site preference shown by divalent ions defines whether the spinel is normal, inverse or mixed. In most cases, magnetic divalent cations (such as Ni2+) prefer the octahedral sites and produce an inverse spinel structure. Diamagnetic divalent cations (such as Zn2+) have preference for the tetrahedral positions and the resulting structure is a normal spinel [1]. Of all ferrites, Ni-Zn is the most versatile because of their many technological applications. These ferrites are known to have high resistivity, low eddy current losses, and relatively low initial permeability. Ni-Zn ferrite has unique high dielectric properties which makes them useful in designing electronic devices [2-3]. Owing to their low power loss (LPL) property, Ni-Zn ferrites can be used in switch mode power supplies (SMPS) for the working frequencies climbing above 1MHz. Hot pressed and single crystal Ni-Zn ferrites are found quite suitable for magnetic recording head due to high thermal stability, wear and corrosion resistance with low magnetostriction and high frequency response. For high frequency applications knowledge of dielectric properties of ferrites is of prime importance. The parameters that need to be tuned properly are dielectric constant (ε'), dielectric loss (ε") and loss tangent (tanδ). High frequency applications of Ni-Zn ferrites include large number of microwave components such as circulators, isolators, gyrators, phase shifters, YIG tuned filters, and switches and substrates for microwave integrated circuits [4]. It is found that there are systematic studies have been reported on the properties of Ni-Zn ferrite [5-8]. Soft ferrites are usually prepared by ceramic method, which suffers from many drawbacks [9-10]. Recently some chemical methods have been used to synthesize soft ferrites for the reason that they produce nano-size particles [11-14]. The systems made up of nano-particles are intensively studied both theoretically and practically, due to their electrical and magnetic properties that are sensibly different from those of their bulk counterpart [15-16].

2. SYNTHESIS

The nano-crystalline sample of the formula *Ni1−xZnxFe2O4 with 0.7 as Ni0.7Zn0.3Fe2O4 was* prepared by citrate nitrate sol-gel auto-ignition synthesis route. The A.R. grade citric acid ($C_6H_8O_7 \cdot H_2O$), Nickel nitrate ($Ni(NO_3)_2 \cdot 6H_2O$), Zinc nitrate($Zn(NO_3)_3 \cdot 9H_2O$), ferric nitrate ($Fe(NO_3)_3 \cdot 9H_2O$) and ammonia (>99% sd-fine) were used as starting materials. In the present system, product was synthesized by keeping metal nitrates to citrate ratio 1:1 and adding ammonia maintaining pH at 6. The as-prepared powder was heat treated separately at 500 °C for 4 h to get the final product.

Dr. S. Q. Chishty
HEAD
Department of Physics
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

OUR HERITAGE
ISSN : 0474-9030 Vol-68, Special Issue-11
Impact Factor (2020) - 6.8

Thermal Power Station at Parli Vaijnath: A Review

Quadri F B[1], Sandip V Patil[2], Chishty S Q[3], Sangita Shinde[4*]
[1]Dr.Rafiq Zakaria College for Women, Aurangabad.,[2]Shri Pancham Khemraj Mahavidyalaya, Sawantwadi.,[3]Dr.Rafiq Zakaria College for Women, Aurangabad.,[4*]Pratishthan Mahavidyalaya, Paithan Aurangabad, M.S.India firdose_q@rediffmail.com
[1]Author-Email- firdose_q@rediffmail.com
-Author-Email- sangitamawal@gmail.com

Abstract: A conventional energy source has been the main source of energy since ancient period. These sources are coal, petroleum and natural gas, and these sources are bound to extinct one or the other day owing to the increasing demand of the population. Efficiency of the existing power generators have to be increased and other means of power generation with good efficiency are to be invented. The thermal power station at Parli Vaijnath in Beed district is one of the vital powers generating station of Marathwada region.

Keywords: conventional, thermal power, generator, dynamo, thermal capacity.

Introduction:

Conventional energy sources are the one that cannot be reused again and again. These sources are coal, petroleum and natural gas. Energy is generated from these fossil fuel by burning them in controlled manner in thermal power stations[1] & [2]. These resources are bound to extinct one day, owing to the increasing demand of the population. They are fast depleting hence alternatives sources, with good efficiency are to be invented.

Almost two third of electricity demand of the world is fulfilled by **thermal power stations.** In these power stations, steam is produced by burning some fossil fuel (e.g. coal) and then used to run a steam turbine. Thus, a thermal power station may sometimes called as a **Steam Power Station**. After the steam passes through the steam turbine, it is condensed in a condenser and again fed back into the boiler to become steam. This is known as ranking cycle. Majority of thermal power plants use coal as their primary fuel, hence they are also called as **coal fired thermal power plant.**

Principle:

The working principle of **thermal power plant operation** depends on Rankin Cycle. In a thermal power plant, coal is coming from coal storage and burnt in the boiler. It converts water into steam. This steam is expanded in the prime-mover (i.e. turbine) which produces mechanical power driving the alternator coupled to the turbine. The steam is expanded again the turbine and usually condensed in the condenser to be fed into the boiler. But in real practice, the conversion of heat from coal combustion into electrical energy needs some modern arrangements and improvements, in which it will run in proper working efficiency.

The basic working components of the typical thermal power station are as shown in the following figure:

Dr. S. Q. Chishty
HEAD
Department of Physics
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-21

Quadri F.B.

Yasmeen Nam

Soil Contamination: A Physical Perspective

Quadri F. B.[1] & Sangita Shinde[2]

[1*]Dr. Rafiq Zakaria College For Women, Aurangabad 431001, (MS).

[2]Pratishthan Mahavidyalaya, Paithan, Aurangabad, (MS).

*Email: quadrifirdose85@gmail.com

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

Abstract: Soil, the uppermost surface of the earth helps in the nourishment of the flora and fauna of the different ecosystems maintaining a perfect balance between the different components of the various biotic and abiotic lifecycles on earth. Excessive use of chemicals as fertilizers is causing an imbalance in this vital component thereby damaging the quality of the soil. This can be depicted in the dielectric parameters of it. Soil samples are treated with chemicals and analysis is carried out for their physical, chemical and electrical parameters. Prominent differences are seen in the physical and electrical properties of the soil treated with chemicals and without chemicals. Microwave reflectometery technique that involves the use of microwaves that are incident on the sample under test. A standing wave pattern is formed by the incident and the reflected waves that are analysed for determination of the parameters. Infinite sample technique is used to investigate the dielectrical properties like dielectric constant, dielectric loss. This investigation also provides relevant information that is used for sensing the remote region that cannot be explored easily.

Keywords: Microwaves, infinite sample method, fertilizers, urea, dielectric constant, dielectric loss.

Introduction: Soil covers the outermost surface of the earth and helps in the growth of the vegetation. Soil consists of various chemical elements and shows certain physical properties. A soil with specified properties is helpful in the growth of the plants and gives a good yield. In order to meet the ever increasing demand of the population, chemicals are been added to the soil thereby affecting their chemical and physical parameters. Electrical parameters are indicators of the physical and chemical properties of the soil[1]. Once added the fertilizer remains for longer period within the soil. Further use of fertilizer in the next crop is causing a drastic change in the quality of the soil causing pollution.

Electrical parameters like dielectric constant, dielectric loss, ac conductivity, relaxation time, etc. indicates the quality of the soil. They measure the charge holding capacity and helps in the transportation of ions.

Dr. Quadri F.B.
Asst. Prof.
Dept. of Physics
Dr. R.Z.C.W. Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

S.Aadhar International Peer-Reviewed Indexed Research Journal
Impact Factor - (SJIF) -7.675, Issue NO. 252 (CCXLIII)
ISSN : 2278-9308
November 2020

Dr. Rafiq Zakaria College Aurangabad

Impact of COVID-19 on the Teaching and Learning of Science in Higher Education

[1]Sangita Shinde, [2]Pallavi Nalle, [3]Qudari F. B.

[1]Pratishthan Mahavidyalaya, Paithan, Aurangabad, M.S. India, [2]Shivchhatrapati College, Aurangabad, M.S.India, [3]Dr. RafiqZakariaCollege For Women,, Aurangabad, M.S. India.

[1]Author-Email-ID:sangitashinde20jan@gmail.com

[2]Corresponding--Author-Email-ID:pallavinallek@gmail.com

ABSTRACT:

The focus of the article is on mitigating the impact of the COVID-19 pandemic on the teaching and learning of science in Indian higher institutions. It was proclaimed that conventional strategies of teaching are not adequate for teaching science during the pandemic because of the lockdown and social distancing. The script of this paper was to throw light on the view that e-learning would be the best alternative: however, the various modes of e-learningrequired face-to-face lecturing, which may not be possible at this period. In light of this, the authors believed the Google Classroom framework, which has been in vogue in manycountries of the world could be the best. The paper reviewed the benefits of Google Classroom based on the country that had used the method. The manuscript mentioned some challenges that can militate against the implementation of the strategy in India. It was concluded that Google Classroom could be the alternative to science teaching and learning in this period if all the challenges mentioned were mitigated. Finally, theimplications of the paper were highlighted.

KEYWORDS:COVID-19, Google Classroom, Lockdown, Pandemic, Social distancing, teaching and learning.

1. INTRODUCTION

The emergence of Corona virus arrived situation is known as the COVID-19 pandemic devastated all sectors of the global economy. The educational system of the world was halted because of social distancing and the lockdown. The conventional paradigm of teaching fails and teaching/learning suffers a severe setback all over the world including India. Teaching and learning in science education is evolving. Many decades ago in India, the conventional methods of teaching holds way in the educational sector. In recent times, teaching and learning had developed into an electronic paradigm (e-learning) that pervaded the entire schools as well as Higher education of the world. However, in India's higher education context the issue of e-learning is not common. The world is not static but dynamic and technology is changing human endeavour rapidly. Along with the changes are various challenges the human race is facing which makes our education fragile and weak such as the current problem of COVID-19 pandemic. The pandemic has exposed the weakness in teaching and learning in India schools because the typical teaching paradigm fails.In India, the current lockdown in the country occasioned by the COVID-19 pandemic is severely impacting science education. The advent of Coronavirus (COVID-19) in India has dealt a severe blow to the education of the nation in 2020.

The effect of the pandemic is alarming in the educational system of the nation (Sahu, 2020). Within short months the virus entered the country it spread widely to nearly all the states. The government short downs all schools in the nation and clamouring for social distancing to curtail the spread of the virus. Social distancing is one of the community mitigation measures that are recommended during influenza pandemics [1]. Social distancing has been considered effective to curb

Dr. Qudari
Asst. Prof
Dept of Physics
Dr. RZCWA Aurd

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park

EXCEL JOURNAL OF ENGINEERING TECHNOLOGY AND MANAGEMENT SCIENCE
(An Peer Reviewed International Multidisciplinary Journal)
Vol. 1 No.19 - December 2020
ISSN 2249-9932 (Print)
ISSN 2277-3339 (Online)
Impact Factor 5.136 (IIFS)

Dr. Rafiq Zakaria College for Women * Aurangabad *

Arduino Based Automation and Data Acquisition System of Microwave Bench Slotted Line

* Quadri F.B.

Introduction

Novel dielectric materials are synthesized and explored for their electrical properties for use as sensors and transducers in different circuits. Various techniques are available for dielectric parameters determinations and depending on the nature of the material under test anyone can be used [1-3]. Microwave reflectometery method is most widely used for solids and liquids. Automated system are designed and constructed for ease and convenience of operation[4-8]. A standing wave pattern is formed in the slotted line of the microwave bench and is scanned for every 1mm or even less than this for greater accuracy. The slotted line is about 10-12cm long and has to be scanned entirely. It gives the value of current for every position of the detector. In thismethod120 -130 readings has to be recorded, which makes the method time consuming and tedious. With the objective of minimizing the time of measurement and storing the data in real time, an automated system along with data acquisition system is designed and constructed using Arduino UNO. Along with associated circuits the system scans the slotted line and

* Department of Physics, Dr. Rafiq Zakaria College for Women, Aurangabad (MS)

Dr. Quadri F.B.
Asst. Prof.
Dept of Physics
Dr. RZCW Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

154

2020-2021

Heterocyclic Letters
Vol. 10| No.3|439-445|May-July|2020
ISSN : (print) 2231–3087 (online) 2230-9632
CODEN: HLEEAI
http://heteroletters.org

Dr. Rafiq Zakaria College for Women

THE SYNTHESIS AND SPECTRAL STUDIES OF PYRAZOLE DERIVATIVES PROVEN EFFECTIVE AS ANTIBACTERIAL & ANTIFUNGAL ACTIVITY

ARCHANAD. JADHAV[1], PANKAJ U. BARHATE[1], AYESHA N. DURRANI[2]

[1]*Department of Chemistry, Loknete Ramdas Patil Dhumal Arts, Science and Commerce College Rahuri, Ahmednagar, Maharashtra, India*
[2]*Department of Chemistry, Dr. Rafiq Zakaria College of Womens, Navkhanda, Aurangabad, Maharashtra, India*
e-mail: archu1990jadhav@gmail.com

Abstract
Present work deals with the preparation of some pyrazole derivative which was prepared by using 2-hydroxyphenyl hydrazone derivatives by using DMF and $POCl_3$. After a complete addition of $POCl_3$. The structure of newly synthesized compounds are characterized on the basis of IR, ^1H NMR, ^{13}C NMR analysis. The newly synthesized compounds were screened for antibacterial & antifungal activity. The investigation of biological screening data revealed that most of the tested compounds showed moderate to good antibacterial and antifungal activity.

Key words:
Hydrazone derivative, antibacterial, I.R. spectra, ^1H- NMR, antifungal, C^{13}- NMR, etc.

Introduction:
Pyrazole, itself, is a volatile, colourless, crystalline solid with a pyridine like odour. It is soluble in water, ethanol, and ether to lesser extent, benzene and cyclohexane. It is insoluble in petroleum ether. Much of the basic information obtained about the chemistry of the pyrazole moiety was its aromatic properties compared to those of benzene derivatives. The pyrazole ring is a prominent structural motif found in numerous pharmaceutically active compounds. This is mainly due to the ease preparation and the important biological activity.

Pyrazole framework plays an essential role in biologically active compounds and therefore represents an interesting template for combinatorial as well as medicinal chemistry. Pyrazole derivatives have been reported to wide range of biological activity. Pyrazoles have received a considerable interest in the field of drug discovery and therefore pyrazole ring constitutes a relevant synthetic target in pharmaceutical industry. In fact, such a heterocyclic moiety represents the core structure of a number of drugs. The wide range of biological activity of pyrazoles has made them popular synthetic targets. There are a number of book chapters and literature reviews dedicated to the synthesis of pyrazole and condensed pyrazoles. The

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-21
158

NAL JOURNAL FOR INNOVATIVE RESEARCH IN MULTIDISCIPLINARY FIELD ISSN: 2455-0620 Special Issue : 21, Jan – 2021
Peer-Reviewed, Refereed, Indexed Journal with IC Value: 86.87 Impact Factor: 6.719 Publication Date: 31/01/2021

bility constant of binary and ternary complexes of some medicinal ligand with metal ion in aqua-organic media

Shalini Dengle [1], Nishat Parveen [2], Mohd. Mohsin [3], Ayesha Durrani [3]*
[1] Vivekanand College, Aurangabad
[2] Sir Sayyed College of Arts, Science & Commerce, Aurangabad
[3] Dr. Rafiq Zakaria College for Women, Aurangabad
Email: drayeshanazhar101@gmail.com
Associate Professor, Dr. Rafiq Zakaria College for Women, Aurangabad. (M.S.)-India

Dr. Rafiq Zakaria College for Women * Aurangabad *

Abstract:
pH-metric studies were used for the simultaneous equilibrium of Nickel (II) and Copper (II) with Ranitidine as medicinal ligand and Glycine amino acid. In present study Glycine is used as primary ligand and Ranitidine as secondary ligand. Stability constant of these complexes were measured at 25 ± 0.5°C in aqua-organic media. Result of stability constant of complexes were calculated by using SCOGS software program.

Key Words: pH-metric studies, Medicinal ligand, aqua-organic media.

Introduction:
pH-metric studies have been used from decades for the determination of stability constant. pH-meter is a very simple set-up of the instrument, so it is very frequently used technique. The present study deals with the stability constant of Ranitidine and Glycine with metal ion in aqua-organic media. Metal ions play very important role in the formation of stable complexes and also of interest to the analytical chemists and bio-inorganic researchers.

[1] Bjerrum and Ido [2] Leden's work enlightened the interest in the investigation of equilibrium of metal-chelates. Schwarzenback and Ackermann [3] found that the stability of chelates decreases with increase of the size of ring. In similar way the stability of complexes increases with basicity of the substituted ligands due to steric effect [4-6].

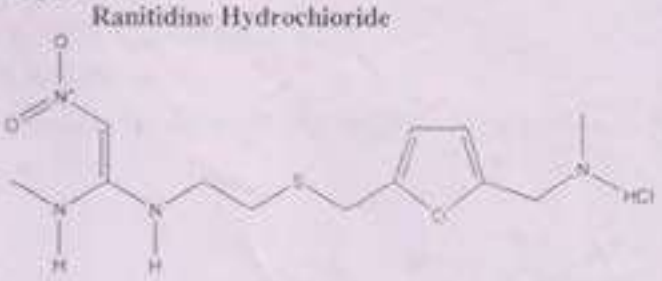
Literature Survey: Solvent mixtures are important reactions media. The solvent can effect on the chemical reactions in a pure solvent as well as the binary mixture is entirely different. Therefore, we decided to study the effect of the solvent on the stability of the metal-ligand complexes [7] using different acids with Cu (II) as metal ion.

The metal ions Mn, Fe and Ni with amino acids Histidine, Glutamic acid, proline and L-aspartic acid using aqua-organic solvents [8].

For the present study, an attempt has been made for the determination of the stability constant of binary and ternary complexes of Ni (II) and Cu (II) with Ranitidine and Glycine.

Material and Method:
All the chemicals used were of Sd-fine chemical ltd. The metal nitrates as well as Glycine and Ranitidine from Pharmaceuticals. The solution prepared for pH-metric titrations in glass distilled water and standardized. The titration was carried out at constant temperature, similarly the glasswares used are calibrated by standard method described in Vogel [9].

Ranitidine Hydrochioride



Glycine

$H_2N - CH_2 - COOH$

Glycine was first amino acid isolated from a protein. It is important in the biosynthesis of nucleic acids, including the co-enzyme glutathione, purines and heme a vital part of hemoglobin.

The ranitidine is in a class of medications called H_2 blockers. It decreases the amount of acid in stomach.

All the pH-metric titrations were carried out by LI – 612 ELICO INDIA. pH-meter (accuracy 0.01 unit), in an inert atmosphere, which was obtained by bubbling oxygen free nitrogen gas.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nyashanda, Jubilee Park,
AURANGABAD, (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Aurangabad (M.S.)

2020-21

155

: 2279-0543

Contact: +91-9413913741, 7597073088)
E mail: ijsrronline@gmail.com
Website: www.ijsrr.org

International Journal of Scientific Research and Reviews

Dr. Rafiq Zakaria College for Women, Aurangabad

Article acceptance letter

Date: 10/06/2020

Dear Sir/Madam,

I am delighted to inform you that your article IJSRR 92 92079 entitled **"A short review of some pyrazole derivatives and their applications"** authored by **Jadhav Archana, Barhate Pankaj and Durrani Ayesha** has been accepted for the publication in the Vol. 9 Issue 2, **April – June** Issue 2020. The manuscript will be available online in **July**, 2020.

Yours truly

Mr. Vinay Vijay
Mr. Sunil Kumar Sharma
Chief Editors
International Journal of Scientific Research and Reviews

PRINCIPAL
Dr. Rafiq Zakaria College For Women
AURANGABAD. (M.S.)

Chemistry
157 2020-21

al of Chemistry and Environment
Vol. 25 (1) January (2021)
Res. J. Chem. Environ.

A simple Spectrophotometric investigation of Ceftriaxone Sodium and Esomeprazole complexes

Sonone Ashvini[1], Parveen Nishat[2] and Durrani Ayesha[1]*
1. Dr. Rafiq Zakaria College for Women, Aurangabad, INDIA
2. Sir Sayyed College, Aurangabad, INDIA
*adurrani2005@gmail.com

Dr. Rafiq Zakaria College for Women Aurangabad

Abstract

A spectrophotometric study on a series of metal complex was carried out in which metal complexes were synthesized by using divalent metal ions such as Zn(II), Co(II), Cu(II) and Ni(II) with two antibacterial drugs Ceftriaxone Sodium and Esomeprazole. The metal complexes were analyzed for magnetic measurements and spectrophotometric studies. The ligands and resulting metal complexes gave intense peak after irradiation of ultraviolet light. The electronic spectral data suggest the tetrahedral and square planar geometries of the complexes.

Keywords: Ceftriaxone Sodium, Esomeprazole, Metal Complexes, Electronic spectra, Magnetic measurement.

Introduction

Ceftriaxone Sodium (L_1) is a third generation long acting, broad-spectrum cephalosporin antibiotic drug. It is active against gram negative and gram positive microorganisms and is used in the treatment of neonates[1].

Ceftriaxone Sodium has three binding atoms N, O and S. The sulphur atoms present in a ring are sterically hindered hence cannot form a complex. Eight nitrogen atoms are present, out of which five are present in ring structure, one is tertiary amine, (=N-), another is secondary amine (-NH). The free amine (-NH-) is most likely to form co-ordinate bond with metal ions. There are three types of oxygen atoms, =O attached to ring, ketonyl oxygen and carboxylic oxygen. Out of these three types of donor oxygen atoms, carboxylate donor is expecting to bind with metals to form complexes[2].

Metal complexes of ceftriaxone are possessing both toxicological and pharmacological properties. In general, depending upon the purity, antibacterial properties of ceftriaxone complexes can be increased or decreased, hence synthesis of such metal-antibiotic complexes is an important area of medicinal chemistry[3-5].

Esomeprazole(L_2) is a S-enantiomer of omeprazole. Omeprazole is a racemic mixture and has been a best selling drug from 1999 to 2001 in the market. Esomeprazole is having a good pharmacokinetic profile and having a better acid control than omeprazole. Esomeprazole has free functional group present in its structure. It contains a chiral sulfoxide center which bears the two large groups benzimidazolyl and pyridinylmethyl. Catalytic asymmetric oxidation of the corresponding sulfide is the most attractive approach to esomeprazole[6,7].

Material and Methods

General procedure for the synthesis of metal complexes: The solid complexes were synthesized by mixing the aqueous solution of metal salts [$CoCl_2$, $CuNO_3$, $NiNO_3$, $ZnCl_2$] with ethanolic solution of ceftriaxone sodium and esomeprazole in 1:1 molar ratio. The pH of solution maintains to basic with help of aqueous solution of NH_4OH. The resulting mixture was refluxed for 4-5 hours to obtain colored precipitate. The obtained mixture was cold at room temperature and then solid complex was filtered and washed twice with distilled water and dried.

Spectrophotometric study of metal complexes: For the study of metal-complexes, UV-Visible double beam spectrophotometer (Model: SL210) was used. In the present study, Pyrex glass cuvettes having 1.00 cm path length were used. The spectral range was selected from 280 to 1100 nm. A stock solution of complexes were prepared by taking 0.01gm of compound in 50ml of standard flask, dissolved in 2.5ml of DMSO and diluted up to the mark with distilled water. Reference solution was also prepared by taking 2.5ml of DMSO in 50ml standard flask and diluted up to the mark with distilled water. Then UV of complexes were recorded using UV-visible spectrophotometer.

Results and Discussion

The UV-VIS spectra shows absorption band attributed to d-d electronic transitions; these transitions are assigned in the relevance to the structure of the ligand and its complexes. d-d transitions appeared in the visible region. These transitions are assigned in relevance to the structures of complexes[8-10].

The UV-VIS spectral data of the compounds in DMSO is shown in table 1. The spectra of complexes observed some absorption bands in 280-1100 nm showing the relatively weak, low energy bands which may be assigned to the d-d transitions. These data are in accordance with assuming the formation of M-N, M-O and M-Cl bonds. Absorption bands are assigned the $\pi - \pi^*$ and ligand to metal charge transfer spectra at higher energy[11,12].

Zn ion has d^{10} configuration and electronic spectrum of Zn(II) complex with L_1 showing d-d transition at 975 nm whereas in L_2 we observed two bands at 301 nm and 280 nm ligand to metal charge transfer spectra[13] and 975 nm is the d-d transition.

Dr. Ayesha Durrani
146 Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park
AURANGABAD. (M.S.)

2020-21 159

Current Organic Synthesis, 2020, 17, 483-487

RESEARCH ARTICLE

Highly Efficient Ultrasound Promoted Synthesis of 2-phenylquinoxaline in Glycerol-Water

BENTHAM SCIENCE

Dr. Rafiq Zakaria College for Women, Aurangabad

Mujahed Shaikh[1,*], Devendra Wagare[1], Ashvini Somone[1] and Ayesha Durrani[2]

[1]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India; [2]Department of Research, Head and College, Aurangabad, India

Abstract: [illegible]

Materials and Methods: [illegible]

Results and Discussion: [illegible]

Conclusion: [illegible]

ARTICLE HISTORY

[illegible]

CrossMark

Keywords: [illegible]

1. INTRODUCTION

The Quinoxalines are the important structural motifs of nitrogen containing heterocycles which are widely used in medicinal [1-5] and pharmaceutical field and in [illegible]. Quinoxaline derivatives have wide range of biological and pharmacological properties [9-10] such as antibacterial [11], antifungal [12], anti-HIV [13-14], anti-parasitic agents and animal growth promoter [15-16], anti-cancer [17], kinase inhibitors [18], anti-bacterial [19] and cleaving agents of DNA [20]. The quinoxalinyl residues are also present in biologically active polypeptides such as levomycin and echinomycin [21].

By considering the above important facts, the researchers have tried various methods from various drawbacks such as the use of expensive catalysts, hazardous reaction media, critical reaction conditions and tedious separation of title compound [22-31].

Glycerol acts as an H-donor solvent and easily forms strong hydrogen-bond networks. Glycerol shows a wide range of solubility for organic and inorganic compounds. Glycerol is known as "organic water" like water because it is polar, easily available, non-toxic, biodegradable, and inexpensive medium. Glycerol is non-toxic, non-volatile solvent, easily removes from the reaction mixture and it is easily prepared from renewable feed-stock [32]. Nowadays, various silicon-based acidic reagents have attracted interest as they are inexpensive and readily available. TMSCl is reactive towards nucleophiles, consequential to the substitution of the chloride by the development of alkylation, polar functional groups, such as amines, and alcohols readily undergo reaction with trimethylsilyl chloride (TMSCl), resulting in trimethylsilyl amines and trimethylsilyl ethers. These new intermediates protect the original functional group by replacing the labile protons and increasing the basicity of the heteroatom. Trimethylsilyl chloride (TMSCl) has been used as efficient promoter for various organic reactions and it is the ultimate catalyst for acid-catalyze reactions [33-34]. The [illegible] feature of the method includes the [illegible] reaction [illegible]. Trimethylsilyl chloride is used as an efficient catalyst for the synthesis of quinoxalines. In this method, phenacyl bromide prepared in-situ from the reactions of acetophenone and NBS is a more hydrolytically stable of phenacyl bromides. The experimental method required more time and gave less yield. Hence Ultrasonication was used.

2. EXPERIMENTAL

The solvents and reagent were analytical grades. The melting point was taken on micro-controller based melting point apparatus (CL-726) and it was uncorrected. The formation of products was monitored by thin-layer chromatography (TLC). ^{1}H NMR and ^{13}C NMR were determined by dissolving product in dimethyl sulfoxide (DMSO) solvent on a Bruker 300-MHz spectrometer. IR Spectra were recorded on a JASCO-FT IR-4100 Instrument.

2.1. Scheme-1 Procedure

2.1.1. Procedure for the Synthesis of 2,3-Diphenylquinoxaline

Phenacyl bromide (0.5 mole) in glycerol-water (10 ml) and then 1,2-phenylene diamine (0.1 mol) was added slowly at 70-75 °C temperature under Ultrasonication with 2-3 drops of TMSCl catalyst. The progress of the reaction was monitored by thin-layer chromatography. The reaction was completed within 2 minutes. After that, the reaction mask was poured in crush ice which was basified with ammonia. The obtained precipitate was filtered, dried and recrystallized with aqueous ethanol (Fig. 1).

*Address correspondence to this author at the Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India;
E-mail: shaikh_mujahed@rediffmail.com

1875-6255/20 $65.00+.00 © 2020 Bentham Science Publishers

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

JOURNAL FOR INNOVATIVE RESEARCH IN MULTIDISCIPLINARY FIELD ISSN: 2455-0620 Special Issue : 21, Jan – 2021
Reviewed, Refereed, Indexed Journal with IC Value: 86.87 Impact Factor: 6.719 Publication Date: 31/01/2021

ıty constant of binary and ternary complexes of some medicinal ligand with metal ion in aqua-organic media

Shalini Dengle [1], Nishat Parveen [2], Mohd. Mohsin [3], Ayesha Durrani [3]*
[1] Vivekanand College, Aurangabad
[2] Sir Sayyed College of Arts, Science & Commerce, Aurangabad
[3] Dr. Rafiq Zakaria College for Women, Aurangabad
Email: drayeshanuzhat101@gmail.com
Associate Professor, Dr. Rafiq Zakaria College for Women, Aurangabad. (M.S.)-India

Dr. Rafiq Zakaria College for Women * Aurangabad *

Abstract:
pH-metric studies were used for the simultaneous equilibrium of Nickel (II) and Copper (II) with Ranitidine as medicinal ligand and Glycine amino acid. In present study Glycine is used as primary ligand and Ranitidine as secondary ligand. Stability constant of these complexes were measured at 25 ± 0.5°C in aqua-organic media. Result of stability constant of complexes were calculated by using SCOGS software program.

Key Words: pH-metric studies, Medicinal ligand, aqua-organic media.

Introduction:
pH-metric studies have been used from decades for the determination of stability constant. pH-meter is a very simple set-up of the instrument, so it is very frequently used technique. The present study deals with the stability constant of Ranitidine and Glycine with metal ion in aqua-organic media. Metal ions play very important role in the formation of stable complexes and also of interest to the analytical chemists and bio-inorganic researchers.

J. Bjerrum and Ido Leden's work enlightened the interest in the investigation of equilibrium of metal-chelates. Schwarzenback and Ackermann[1] found that the stability of chelates decreases with increase of the size of ring. In similar way the stability of complexes increases with basicity of the substituted ligands due to steric effect [2-4].

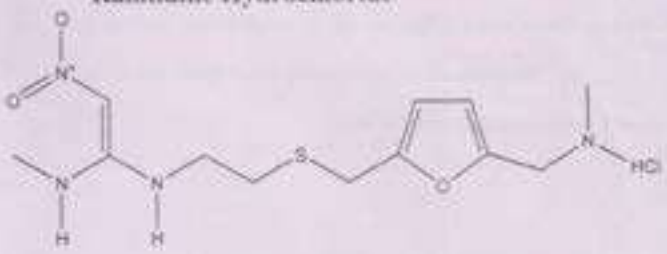
Literature Survey: Solvent mixtures are important reactions media. The solvent can effect on the chemical reactions in a pure solvent as well as the binary mixture is entirely different. Therefore, we decided to study the effect of the solvent on the stability of the metal-ligand complexes [5], using different acids with Cu (II) as metal ion.

The metal ions Mn, Fe and Ni with amino acids Histidine, Glutamic acid, proline and L-aspartic acid using aqua-organic solvents [6].

For the present study, an attempt has been made for the determination of the stability constant of binary and ternary complexes of Ni (II) and Cu (II) with Ranitidine and Glycine.

Material and Method:
All the chemicals used were of Sd-fine chemical ltd. The metal nitrates as well as Glycine and Ranitidine from pharmaceuticals. The solution prepared for pH-metric titrations in glass distilled water and standardized. The titration was carried out at constant temperature, similarly the glasswares used are calibrated by standard method described in Vogel [7].

Ranitidine Hydrochloride



Glycine

$H_2N - CH_2 - COOH$

Glycine was first amino acid isolated from a protein. It is important in the biosynthesis of amino acid serine, the co-enzyme glutathione, purines and heme a vital part of hemoglobin.

The ranitidine is in a class of medications called H_2 blockers. It decreases the amount of acid in stomach.

All the pH-metric titrations were carried out by LI – 612 ELICO INDIA. pH-meter (accuracy 0.01 unit), in an inert atmosphere, which was obtained by bubbling oxygen free nitrogen gas.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

2021-22

160 2020-

ISSN(Online): 2456-8805

Aarati Bobade et al., International Journal of Advanced Research in Innovative Discoveries in Engineering and Applications[IJARIDEA]
Vol.6, Issue 5,27 October 2021; pg. 1-15

A Review on Heavy Metal Pollution of River Ganga in India

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

Aarati Bobade*, Santosh Rankhamb** Ayesha Durrani***

*Department of Chemistry, Late Ramesh Warpudkar College, Sonpeth Dist. Parbhani (MS) India – 431516

** Department of Zoology Late Ramesh Warpudkar ACS College, Sonpeth, Dist. Parbhani (MS) India - 431516

** Department Of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (MS) India 431001

Email: santosh.rankham@gmail.com

Abstract-

Indian people consider Ganga River as a holy river. The river provide water for survival of humans on earth. Water quality has become major issue because of growing industrial and urban development. Due to the sewage discharge and many other anthropogenic activities river water get polluted with heavy metals like Cr, Mn, Fe, Co, Ni, Cu, Cd Zn and Ar. The carcinogenic and bioaccumulative nature of the heavy metals causes certain lethal diseases and create hazardous effect on environment. The abundance of these toxic heavy metals found highly near industrialized and urbanized area in Ganga river water in Uttar Pradesh, Bihar and Uttarakhand with order of occurrence Fe > Zn > Cr > Cu > Pb in different season. The present review focus on the toxicity of heavy metals as pollutants, their sources and risk to environment and suggest some strategies for heavy metal pollution management.

Key Words: Environment, Heavy Metal, Pollution, River Ganga, Toxic, Water

I. INTRODUCTION:

Ganga has been a cradle of human civilization since time immemorial. Ganga is the holiest and sacred river in India. Ganga river has great importance and place in Indian civilization that why the National river Ganga is

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jalbiee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Aurangabad

e-ISSN : 2582 - 4376
Open Access

INTERNATIONAL RESEARCH JOURNAL ON ADVANCED SCIENCE HUB
RSP SCIENCE HUB

(The Hub of Research Ideas)
E-mail: editor.irjash@rspsciencehub.com
Available online at www.rspsciencehub.com

Dr. Rafiq Zakaria College for Women * Aurangabad *

IRJASH is hereby awarding this certificates to

Ayesha Nuzat Durrani

In Recognition the publication of the manuscript Entitled

Stability constants of Nicotinic acid (vitamin B3) complexes with transition metal ions

Published in Volume 02 *Issue* 07 July *2020*

Editor in Chief
Dr. R. RANJITH

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

INTERNATIONAL JOURNAL FOR INNOVATIVE RESEARCH IN MULTIDISCIPLINARY FIELD
Monthly, Peer-Reviewed, Refereed, Indexed Journal with IC Value: 86.87
ISSN: 2455-0620
Impact Factor: 6.719
Special Issue : 21, Jan – 2021
Publication Date: 31/01/2021

Stability constant of binary and ternary complexes of some medicinal ligand with metal ion in aqua-organic media

Shalini Dengle [1], Nishat Parveen [2], Mohd. Mohsin [3], Ayesha Durrani [3]*
[1] Vivekanand College, Aurangabad
[2] Sir Sayyed College of Arts, Science & Commerce, Aurangabad
[3] Dr. Rafiq Zakaira College for Women, Aurangabad
Email: drayeshanuzhat101@gmail.com
Associate Professor, Dr. Rafiq Zakaria College for Women, Aurangabad. (M.S.)-India

Dr. Rafiq Zakaria College for Women * Aurangabad

Abstract:
pH-metric studies were used for the simultaneous equilibrium of Nickel (II) and Copper (II) with Ranitidine as medicinal ligand and Glycine amino acid. In present study Glycine is used as primary ligand and Ranitidine as secondary ligand. Stability constant of these complexes were measured at $25 \pm 0.5^{0}C$ in aqua-organic media. Result of stability constant of complexes were calculated by using SCOGS software program.

Key Words: pH-metric studies, Medicinal ligand, aqua-organic media.

Introduction:
pH-metric studies have been used from decades for the determination of stability constant. pH-meter is a very simple set-up of the instrument, so it is very frequently used technique. The present study deals with the stability constant of Ranitidine and Glycine with metal ion in aqua-organic media. Metal ions play very important role in the formation of stable complexes and also of interest to the analytical chemists and bio-inorganic researchers.

J. Bjerrum and Ido Leden's work enlightened the interest in the investigation of equilibrium of metal-chelates. Schwarzenback and Ackermann[1] found that the stability of chelates decreases with increase of the size of ring. In similar way the stability of complexes increases with basicity of the substituted ligands due to steric effect [2-4].

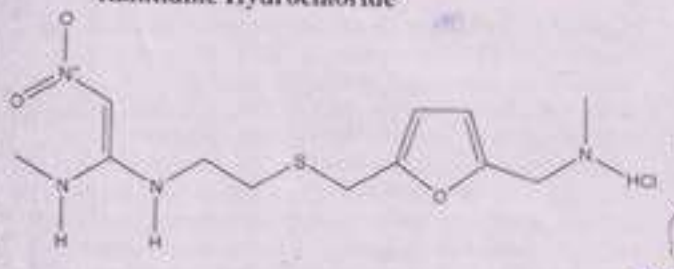
Literature Survey: Solvent mixtures are important reactions media. The solvent can effect on the chemical reactions in a pure solvent as well as the binary mixture is entirely different. Therefore, we decided to study the effect of the solvent on the stability of the metal-ligand complexes [5], using different acids with Cu (II) as metal ion.

The metal ions Mn, Fe and Ni with amino acids Histidine, Glutamic acid, proline and L-aspartic acid using aqua-organic solvents [6].

For the present study, an attempt has been made for the determination of the stability constant of binary and ternary complexes of Ni (II) and Cu (II) with Ranitidine and Glycine.

Material and Method:
All the chemicals used were of Sd-fine chemical ltd. The metal nitrates as well as Glycine and Ranitidine from Pharmaceuticals. The solution prepared for pH-metric titrations in glass distilled water and standardized. The titration was carried out at constant temperature, similarly the glasswares used are calibrated by standard method described in Vogel [7].

Ranitidine Hydrochloride



Glycine

$H_2N - CH_2 - COOH$

Glycine was first amino acid isolated from [illegible]. It is important in the biosynthesis of amino acid serine, the co-enzyme glutathione, purines and heme a vital part of hemoglobin.

The ranitidine is in a class of medications called H2 blockers. It decreases the amount of acid in stomach.

All the pH-metric titrations were carried out by LI – 612 [illegible] INDIA. pH-meter (accuracy 0.01 unit), in an inert atmosphere, which was obtained by bubbling oxygen free nitrogen gas.

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Roshanpura, Jubilee Park, Aurangabad
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Roshanpura, Aurangabad (M.S.)

2020-2021

0036-0236, Russian Journal of Inorganic Chemistry, 2020, Vol. 65, No. 14, pp. 2046–2052. © Pleiades Publishing, Ltd., 2020

COORDINATION COMPOUNDS

Complexation Study of Synthesized Pharmacological Organic Ligands with Samarium

Zamzam Taher Omar (Al-Ahdal)[a], Shivaji Jadhav[b, *], Mohamad Mohsin[c], A. Saif Faizaa[c], and Megha Rai[a]

[a] Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India
[b] Department of Chemistry, Tarai College Paithan, Aurangabad, 431001 India
[c] Department of Physics, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001 India
*e-mail: dr.shivaji1985@gmail.com

Received May 12, 2020; revised June 30, 2020; accepted July 2, 2020

Abstract—This research describes the formation of samarium complexation with organic ligands (Schiff bases of anti-mycobacterial agent isonicotinic acid hydrazide) through pH-metric technique at 25, 35, and 45°C in 70% (v/v) ethanol/water medium at 1M ($NaClO_4$) ionic strength. Organic ligands have been synthesized and their structures have been confirmed by various characterization techniques such as TLC, MP, IR, ^{1}H NMR, ^{13}C NMR, UV-Vis spectroscopies and elemental analysis. They have been evaluated for biological activity against gram positive, gram negative bacteria, and fungi showing moderate to significant results. Complexation study of these binary complexes has been evaluated and calculated using Calvin–Bjerrum technique. The order of stability constant has been found to be as follows *N*-[(*E*)-(4-hydroxy-3-methoxyphenyl)methylene]isonicotinohydrazide (L_2) < *N*-[(*E*)-(4-chlorophenyl)methylene]isonicotinohydrazide (L_1) < *N*-[(*E*)-(4-hydroxyphenyl)methylen]isonicotinohydrazid (L_4) < *N*-[(*E*)-(2-hydroxyphenyl)methylen]isonicotinohydrazid (L_5) < *N*-[(*E*)-(2-nitrophenyl)methylen]isonicotinohydrazide (L_3). Thermodynamic parameters associated with the samarium complexation have been observed to be negative in ΔH and ΔG. This indicates the exothermic reaction in complexation.

Keywords: pH-metric technique, organic ligands, samarium, Gibbs free energy change, enthalpy change

DOI: 10.1134/S0036023620140053

INTRODUCTION

Metal complexes play important role to improve the stability of medicinal drugs [1]. It's also useful to identify the suitable form of the drug and their effect with blood stream as well as to measure the strength of metal ligand bonds [2]. Pharmacological field is mainly established upon the coordination chemistry of metal ligand complexes; therefore, most of the researchers have their interest to carry out complexation study of marketly available medicinal drugs with transition metal ions [3–5].

d-Block elements rapidly coordinated to nitrogen and oxygen containing compounds [6–8]. Meanwhile *f*-block, i.e lanthanides, has appreciable capacity to form complexes with active ligands due to its vacant *f*-orbital. Samarium(III) has great capacity to form complexes with nitrogen and oxygen containing compounds such as piperidin-4-ones [9]. Lanthanide containing samarium (Sm) is a silvery-white metal has been noted to stimulate metabolism in living organism. Samarium is act as a catalyst in complexation. Samarium complexes of coumarin-3-carboxylic acid (HCCA) exhibited potent antiproliferative activity [10].

Schiff bases form stable complexes with transition and lanthanide elements which have variety of applications in biological, clinical, and analytical fields [11, 12]. Due to its pharmacological importance most of the medicinal chemist has targeted their goal to perform its complexation [13]. Isoniazid, i.e isonicotinic acid hydrazide (INZ), is one of the most significant anti-tuberculosis drugs, primarily used as a tuberculostatic agent [14, 15]. Complexation of INZ also reflects prominent results regarding stability. In view to these valuable findings, authors were carried out the synthesis of Schiff bases of INZ through condensation with aromatic aldehyde and evaluate it for antibacterial and antifungal activity. Synthesized organic ligands (L_1–L_5) observed favorable pharmacological outputs, so it was selected as ligands for present complexation study. Metal complexes from drugs are to be more potent than drug itself [16].

Dr. Rafiq Zakaria College for Women Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2020-2021.

FINAL

Send Orders for Reprints to reprints@benthamscience.net

Anti-Infective Agents, 2021, 19, 1-10 1

RESEARCH ARTICLE

Bioactive Chemical Compounds Identified in Extracts of *Reseda sphenocleoides* Leaves and Evaluation of Antiamoebic Activity *In Vitro*

Dr. Rafiq Zakaria College for Women * Aurangabad *

Mansour Abdulnabi H. Mehdi[1,2,*], Mohammad Mohsin[3], Fadel Y. S. Alarabi[1,2], Gozif Mohammed N. Omar[1,4], Mazahar Farooqui[5] and Vidya Pradhan[6]

[1]Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen; [2]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001India; [3]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001India; [4]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001, India; [5]Maulana Azad College of Art, Science, and Commerce, Aurangabad, India

Abstract: ***Background:*** *Entamoeba histolytica* is a causative agent of amoebiasis, estimated to cause more than 100,000 deaths per year. Metronidazole is used to treatment of *E. histolytica* infection. However, this drug has several untoward side effects, the current study was designed to analysis of the bioactive chemical products in extracts of *Reseda sphenocleoides* leaves and evaluation of anti-amoebic activity *in vitro*.

Methods: Bioactive chemical compounds were tested by GC-MS and FT-IR. *Entamoeba histolytica* was cultured under xenic conditions in Locke's egg (LE) medium and different concentrations of extracts of *R. sphenocleoides* were added to cultivated parasites.

Results: 11 and 18 bioactive phytochemical compounds were shown in the ethanolic and aqueous extracts of *R. sphenocleoides* leaves, respectively, by GC-MS analysis. FT-IR analysis of extracts of *R. sphenocleoides* leaves proved the presence of many functional groups for various phytocompounds. The ethanolic extract of *R. sphenocleoides* leaves was inhibited the growth of *E. histolytica in vitro* at concentrations 5 and 10 mg/ml after 96 hrs of incubation. At the same time, the highest concentration 20 mg/ml used in this study, inhibited the *E. histolytica* at all times of incubation. The aqueous extract showed that there was no growth of *E. histolytica* at the concentrations of 5 and 10 mg/ml after 72 and 48 hrs, respectively. However, the higher concentrations (15 and 20 mg/ml) of the aqueous extract were on the growth of *E. histolytica* parasite during the period of incubation. It was found that the minimum inhibitory concentration (MIC) for ethanolic and aqueous extracts of *R. sphenocleoides* leaves was <15 mg/ml and <10 mg/ml, respectively.

Conclusion: The results specify that the extracts of *R. sphenocleoides* has a higher capacity of reducing *E. histolytica* number *in vitro*. Moreover, these results showed that the extracts of *R. sphenocleoides* contain various bioactive compounds and therefore have various medicinal properties that can be used for the treatment of various diseases.

ARTICLE HISTORY

Received: August 31, 2020
Revised: August 31, 2020
Accepted: October 10, 2020

DOI:
10.2174/2211352519999201012170146

Keywords: *Reseda sphenocleoides*, *Entamoeba histolytica*, *in vitro*, FT-IR, GC-MS.

1. INTRODUCTION

Amoebiasis is a human disease that spreads worldwide, especially among children and it is an infection caused by protozoan parasite *E. histolytica* [1]. *E. histolytica* is an intestinal parasite that inhabits the large intestine of man but can also be found in the liver, lungs, and brain, causing serious consequences [2], about 50 million cases of dysentery and about 40,000 to 110,000 deaths per year [3]. Amoebiasis disease is ranked third on the list of parasitic protozoan infections leading to death after malaria and schistosomiasis [4]. The most effective and most used drug for the treatment of *E. histolytica* infection is metronidazole. However, it has been reported that this drug has very unpleasant side effects such as metallic taste in the mouth, dry mouth, vomiting, headaches as well as neurotoxicity and to a lesser extent nausea, pruritus, and dark colored urine [5, 6]. In addition, carcinogenic effects in embryos have been documented [7]. Due to the side effects of metronidazole, there is a necessity to search for an alternative for the treatment of amoebiasis with high activity, low toxicity, cheaper, and more effective and safer antiprotozoal agents is still a necessary goal.

Reseda sphenocleoides Defflers belonging to the family Resedaceae is endemic to southwest Arabia, Hadramaut, and Aden - Yemen [8, 9]. Yemeni people in the countryside treat

* Address correspondence to these authors at the Department of Biology, Faculty of Education-Rdfan, Aden University, Aden, Yemen; Tel: +917709623233; E-mail: mansourabdulnabi@gmail.com

2211-3525/21 $65.00+.00

© 2021 Bentham Science Publishers

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

2020-21

INTEGRATED FERROELECTRICS
2020, VOL. 205, 88–94
https://doi.org/10.1080/10584587.2019.1675003

Taylor & Francis
Taylor & Francis Group

Check for updates

Potentiometric and Thermodynamic Studies of (*N*-[-(4-Chlorophenyl) Methylene]Nicotinohydrazide) and Its Transition Metal Complexes

Zamzam Taher Omar (Al-Ahdal), Shivaji Jadhav, and Megha Rai

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, MS, India

Rafiq Zakaria College for Women * Aurangabad

ABSTRACT

Pharmacologically active organic ligands (*N*-[-(4-chlorophenyl) methylene] nicotinohydrazide) synthesized through the condensation of equimolar mixture of anti-mycobacterial agent (nicotinohydrazide) with aromatic aldehyde. The reaction progress and purity of organic ligands were verified by thin layer chromatography. Formation of organic ligands was confirmed with the help of MP, IR, ^{1}H NMR, ^{13}C NMR and elemental analysis. Further formation of complexes of transition elements such as Mn(II), Co(II), Ni(II), Cu(II) and Zn(II) with organic ligand (Schiff base) *N*-[-(4-chlorophenyl)methylene] nicotinohydrazide were studied by the pH-metric technique at 25 °C, 35 °C and 45 °C in 70% (v/v)ethanol – water medium at 1 M ($NaClO_4$) ionic strength. The stability constants of these binary complexes were evaluated and order of stability constant found as Co (II) < Mn (II) < Ni (II) < Cu (II) < Zn (II). The thermodynamic parameters associated with the complexation reactions also were calculated. It is found that the change in enthalpy (ΔH) and change in Gibb's free energy (ΔG) were negative for all of the systems which suggested that all of the reactions were exothermic. The change in entropy (ΔS) found positive for most of the complexes which indicate in metal-ligand binding process is entropy favorable.

ARTICLE HISTORY
Received 1 October 2018
Accepted 16 September 2019

KEYWORDS
Binary complexation; *N*-[-(4-chlorophenyl) methylene] nicotinohydrazide; enthalpy; entropy; Gibb's free energy

1. Introduction

Schiff bases are now attracting the attention of medicinal chemist. Schiff base containing an azoline group (–N=C–N–) are commonly formed by the intensification of an initial amine with an active carbonyl [1]. Schiff bases perform an important function in coordination chemistry, because they easily form stable complexes with most transitional metal ions and in the field of coordination chemistry. Metal ions perform vital roles in biological processes [2]. Schiff bases and their complexes have a variety of applications in biological clinical and analytical fields and have a broad assortment of applications in different regions such as biological chemistry, organic, and inorganic chemistry [3,4]. In the field of coordination chemistry, metal ions perform vital roles in biological processes and the mineral complexes have been studied with the Schiff bases links to be utilized in the biological, clinical, analytical, and pharmacological fields [5]. Isoniazid becomes a

CONTACT Megha Rai drmegha08@gmail.com
Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/ggfe.
© 2019 Taylor & Francis Group, LLC

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

178
20.21
154

POLYCYCLIC AROMATIC COMPOUNDS
https://doi.org/10.1080/10406638.2021.2015397

Taylor & Francis

Check for updates

Dr. Rafiq Zakaria College for Women * Aurangabad *

Synthesis, Magnetic Susceptibility, Thermodynamic Study and Bio-Evaluation of Transition Metal Complexes of New Schiff Base Incorporating INH Pharmacophore

Zamzam Taher Omar (Al-Ahdal)[a], Shivaji Jadhav[b], Rashmi Pathrikar[c], Sumit Shejul[a], and Megha Rai[a]

[a]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India; [b]Department of Chemistry, Taral College Arts and Science, Aurangabad, Maharashtra, India; [c]Department of Chemistry, Rajshri Shahu College, Aurangabad, Maharashtra, India

ABSTRACT

Transition metal complexes of synthesized organic ligands incorporating INH were successfully investigated by potentiometrically. The stability constants of these binary complexes were evaluated and order of stability constant found as above Zn(II) > Co(II) > Ni(II) > Mn(II) > Cu(II). Magnetic moment value clearly indicates that newly prepared transition metal complexes of N-[(E)-(2-Hydroxyphenyl)methylen]isonicotinohydrazid are paramagnetic in nature. The stability constants for complexes decrease with an increasing temperature, indicating that the composition equilibrium is exothermic in nature. Also the change in enthalpy (ΔH) and change in Gibb's free energy (ΔG) were negative for all of the systems which suggested that all of the reactions were exothermic. The change in entropy (ΔS) found positive for most of the complexes which indicate in metal-ligand binding process is entropy favourable. Metal complexes of organic ligand shows moderate antibacterial activity against gram positive and gram negative bacteria. It also possesses prominent antifungal activity for Nickel (II) complex. Biological evaluation results of transition metal complexes show superior pharmacological applications as compared to organic ligand.

ARTICLE HISTORY
Received 29 June 2021
Accepted 1 December 2021

KEYWORDS
INH Schiff base; transition metal ion; paramagnetic; exothermic; antibacterial; antifungal

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Maulana Azad Nagar, Jalna Road,
AURANGABAD. (M.S.)

CONTACT Shivaji Jadhav drshivaji1985@gmail.com Department of Chemistry, Taral College Arts and Science, Aurangabad, Maharashtra, India; Zamzam Taher Omar (Al-Ahdal) zamzamomar1984@gmail.com Department of Chemistry, Dr.Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Supplemental data for this article is available online at https://doi.org/10.1080/10406638.2021.2015397.

© 2021 Taylor & Francis Group, LLC

2020-2021.

ISSN 0036-0236, Russian Journal of Inorganic Chemistry, 2020, Vol. 65, No. 14, pp. 2046–2052. © Pleiades Publishing, Ltd., 2020

COORDINATION COMPOUNDS

Complexation Study of Synthesized Pharmacological Organic Ligands with Samarium

Zamzam Taher Omar (Al-Ahdal)[a], Shivaji Jadhav[b, *], Mohamad Mohsin[a], A. Saif Faizan[c], and Megha Rai[c]

[a]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India
[b]Department of Chemistry, Tansi College Paithan, Aurangabad, 431001 India
[c]Department of Physics, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001 India
*e-mail: dr.shivaji1985@gmail.com

Received May 12, 2020; revised June 30, 2020; accepted July 2, 2020

Abstract—This research describes the formation of samarium complexation with organic ligands (Schiff bases of anti-mycobacterial agent isonicotinic acid hydrazide) through pH-metric technique at 25, 35, and 45°C in 70% (v/v) ethanol/water medium at 1 M ($NaClO_4$) ionic strength. Organic ligands have been synthesized and their structures have been confirmed by various characterization techniques such as TLC, MP, IR, ^{1}H NMR, ^{13}C NMR, UV-Vis spectroscopies and elemental analysis. They have been evaluated for biological activity against gram positive, gram negative bacteria, and fungi showing moderate to significant results. Complexation study of these binary complexes has been evaluated and calculated using Calvin–Bjerrum technique. The order of stability constant has been found to be as follows *N*-[(*E*)-(4-hydroxy-3-methoxyphenyl)methylene]isonicotinohydrazide (L_3) < *N*-[(*E*)-(4-chlorophenyl)methylene]isonicotinohydrazide (L_1) < *N*-[(*E*)-(4-hydroxyphenyl)methylen]isonicotinohydrazid (L_4) < *N*-[(*E*)-(2-hydroxyphenyl)methylen]isonicotinohydrazid (L_2) < *N*-[(*E*)-(2-nitrophenyl)methylen]isonicotinohydrazide (L_5). Thermodynamic parameters associated with the samarium complexation have been observed to be negative in ΔH and ΔG. This indicates the exothermic reaction in complexation.

Keywords: pH-metric technique, organic ligands, samarium, Gibbs free energy change, enthalpy change

DOI: 10.1134/S0036023620140053

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

INTRODUCTION

Metal complexes play important role to improve the stability of medicinal drugs [1]. It's also useful to identify the suitable form of the drug and their effect with blood stream as well as to measure the strength of metal ligand bonds [2]. Pharmacological field is mainly established upon the coordination chemistry of metal ligand complexes; therefore, most of the researchers have their interest to carry out complexation study of marketly available medicinal drugs with transition metal ions [3–5].

d-Block elements rapidly coordinated to nitrogen and oxygen containing compounds [6–8]. Meanwhile *f*-block, i.e lanthanides, has appreciable capacity to form complexes with active ligands due to its vacant *f*-orbital. Samarium(III) has great capacity to form complexes with nitrogen and oxygen containing compounds such as piperidin-4-ones [9]. Lanthanide containing samarium (Sm) is a silvery-white metal has been noted to stimulate metabolism in living organism. Samarium is act as a catalyst in complexation. Samarium complexes of coumarin-3-carboxylic acid (HCCA) exhibited potent antiproliferative activity [10].

Schiff bases form stable complexes with transition and lanthanide elements which have variety of applications in biological, clinical, and analytical fields [11, 12]. Due to its pharmacological importance most of the medicinal chemist has targeted their goal to perform its complexation [13]. Isoniazid, i.e isonicotinic acid hydrazide (INZ), is one of the most significant anti-tuberculosis drugs, primarily used as a tuberculostatic agent [14, 15]. Complexation of INZ also reflects prominent results regarding stability. In view to these valuable findings, authors were carried out the synthesis of Schiff bases of INZ through condensation with aromatic aldehyde and evaluate it for antibacterial and antifungal activity. Synthesized organic ligands (L_1–L_5) observed favorable pharmacological outputs, so it was selected as ligands for present complexation study. Metal complexes from drugs are to be more potent than drug itself [16].

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

170

2020-21.

POLYCYCLIC AROMATIC COMPOUNDS
https://doi.org/10.1080/10406638.2020.1825005

Taylor & Francis
Taylor & Francis Group

Check for updates

Rafiq Zakaria College for Women, Aurangabad

$ZnFe_2O_4$ Nano-Catalyzed One-Pot Multi-Component Synthesis of Substituted Tetrahydropyranoquinoline under Neat Ultrasonic Irradiation

Shivaji Jadhav[a], Mazahar Farooqui[b], Pravin Chavan[c], Sayyed Hussain[d], and Megha Rai[e]

[a]Department of Chemistry, Tarai College of Arts and Science, Paithan, Aurangabad, Maharashtra, India; [b]P.G. Department of Chemistry, Higher Learning and Research Institute, Maulana Azad College, Aurangabad, Maharashtra, India; [c]Department of Chemistry, Doshi Vakil College, Goregaon, Raigad, Maharashtra, India; [d]Department of Chemistry, Sir Sayyed College, Aurangabad, Maharashtra, India; [e]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

ABSTRACT

$ZnFe_2O_4$ nano-catalyzed facile synthesis of tetrahydropyranoquinoline derivatives (4a–f) via one-pot multi-component Povarov's inverse-electron-demand hetero Diels–Alder reaction of substituted aromatic aldehyde (1), aromatic amine (2) with dihydrofuran (3) under ultrasonic irradiation. This may be helpful to society to get more active pharmaceutical ingredients. In the present study, a series of tetrahydroquinoline (4a–f) were synthesized and confirmed with several spectral characterization techniques. Synthetic approach of present research toward the synthesis of THQ was significantly shown that $ZnFe_2O_4$ plays a vital role in highly efficient, eco-friendly, recyclable heterogeneous nano-catalysts. This resulted in enhancing reaction rate, solvent-free reaction, easy to carry, simple isolation, and high yielded product.

ARTICLE HISTORY
Received 27 June 2020
Accepted 13 September 2020

KEYWORDS
Neat condition; Povarov's reaction; THQ; ultrasonic irradiation; $ZnFe_2O_4$

Introduction

Multi-component reactions (MCRs) under ultrasonic irradiation are most widely used in advanced technique for the expeditious synthesis of immensely selective products and heterocyclic compounds. Furthermore, formation of numerous new bonds in most significant commercial approach via one-pot synthesis. Consequently, it reduced the reaction time, energy, and work-up and improves the purity of compounds by avoiding the formation of several biproducts.[1–4]

Tetrahydropyranoquinoline (THQ) ring is one of the predominant classes of heterocyclic compounds found in many natural products.[5–7] THQ scaffold plays a vital role in various therapeutic agents such as anti-arrhythmic, cardiovascular, anticancer drugs, etc.[8] They also possess significant pharmacological activities such as antitumor, anti-malarial, antiasthma, anti-allergic, and psychotropic activity.[9] It is found in various medicinal drugs such as (−)-Galipinine (1), (−)-Angustureine (2), Torcetrapib (3), and Eudistomes A (4). Compound (5) as an antitumor agent and compound (6) as a HLE inhibitor exhibited THQ scaffold (Figure 1).[10]

Several methods, synthetic route, and approaches have been made to synthesize THQ ring. But Povarov's inverse-electron-demand hetero Diels–Alder reaction[11] has gained

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda Jubilee Park,
AURANGABAD. (M.S.)

CONTACT Shivaji Jadhav dr.shivaji1985@gmail.com Department of Chemistry, Tarai College of Arts and Science, Paithan, Aurangabad-431001, Maharashtra, India; Megha Rai drmegha08@gmail.com

Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/gpol.

Supplemental data for this article is available online at https://doi.org/10.1080/10406638.2020.1825005.

© 2020 Taylor & Francis Group, LLC

http://www.epitomejournals.com Vol. 6, Issue 10, October 2020, ISSN: 2395-6968

Epitome : International Journal of Multidisciplinary Research

ISSN : 2395-6968

Dr. Rafiq Zakaria College for Women * Aurangabad *

EXTRACTION AND SPECTROPHOTOMETRIC STUDY OF RUTHENIUM (III)



*Uzma Parveen K. Shaikh**
Department of Chemistry,
Dr. Rafiq Zakaria College for Woman,
Aurangabad (431004) M.S. India
* Correspondence author E-mail: upshaikh@gmail.com

ABSTRACT

Investigation was made on the extraction and spectrophotometric determination of Ruthenium(III) with 4-(4-dimethylaminobenzylideneimino)-5-methyl-4H-1, 2, 4-triazole-3-thiol (DMABIMTT) in chloroform from hydrochloric acid medium. In this method Ruthenium(III) is extracted by using solvent extraction technique with DMABIMTT as an extractant which is stripped and determined spectrophotometrically. The method affords quantitative binary separation of Ruthenium(III) and is applicable to the analysis of synthetic mixtures and alloys. The method is highly selective, simple and reproducible. The effect of diverse ions on the quantitative extraction of Ruthenium(III) has also been studied. The method is applicable for the separation of Ruthenium(III) from binary mixtures, alloys, synthetic mixtures and commercially available samples.

KEYWORDS

Ruthenium(III), Solvent extraction, DMABIMTT, Binary mixtures.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad.

International Journal of Global Science Research
Vol. 7, Issue. 2, October 2020, pp. 1438-1440
Available Online at www.ijgsr.com
© Copyright 2014 | ijgsr.com | All Rights Reserved
ISSN: 2348-8344 (Online)
DOI: 10.26540/ijgsr.v7.i2.2020.167

IJGSR
International journal of global Science Research

Research Paper

Highly Efficient Extraction of Rhodium (III) from Hydrochloric Acid Solution with DMABIMTT

Uzma Parveen Shaikh
Department of Chemistry, Dr. Rafiq Zakaria College for Woman, Aurangabad, Maharashtra, India
Email: upshaikh@gmail.com

Received: 16/09/2020
Revised: 22/09/2020
Accepted: 30/09/2020

Abstract: Extraction of Rh (III) from a HCl solution with DMABIMTT was investigated. Rh (III) can be readily back-extracted using 10 M HCl solution possessing a high selectivity over similarly loaded Pd (II) and Pt (IV). The extraction was fast with short shaking time (30 seconds). The results obtained showed that the average recovery of Rh (III) from an aqueous solution containing 100mg/ml of analyte was 99% with a relative standard deviation of 0.95. The method is applicable to the analysis of synthetic mixtures. It is highly selective, simple and rapid.

Keywords: Rhodium, DMABIMTT, Solvent extraction, Mineral acid

INTRODUCTION:

Liquid-liquid extraction is one of the most efficient methods used to separate, and purify metal ions and organic compounds (Dhakha, 1974). Extraction has become a technique used to recover and separate precious metals, including Rhodium (III). This method is proposed for extraction of microgram amounts of Rhodium (III) from hydrochloric acid medium using DMABIMTT dissolved in chloroform as an extractant.

DMABIMTT is a sulphur containing ligand, showed promising effects in the field of analytical chemistry for the separation and estimation of platinum group metals, the electronegativity also plays an important role in the stability of the complexes containing sulphur as donor atoms. The transition metals normally tend to form covalent bonds and does not form emulsion at the time of extraction.

The effectiveness of DMABIMTT has been evaluated as an extractant for Rhodium (III) from different materials. The important features of this method are that, it permits selective separation of Rhodium (III) from other platinum group metals and base metals which are generally associated with it. It is free from interference from a large number of foreign ions, low reagent concentration is required and equilibration time needed for is very short, about 30 seconds. We report here the use of DMABIMTT as an efficient extractant for DMABIMTT from hydrochloric acid medium.

Dr. Rafiq Zakaria College for Woman ★ Aurangabad ★
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)
ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

Conclusion

The high academic achievement would score significantly high than the boys of low academic achievement on 16 PF. The two groups of boys of H.A.A. & L.A.A. did differ on all the factors of 16 PF. The H.A.A. boys scored significantly high on all the factor. So hypothesis is accepted.

Reference Book

1. Allport, G.W. (1937) - The functional autonomy of motives Amar J. Psychol.
2. Allport, G.W. (1937) - "A Psychological interpretation." Newyark Halt & Co. 1937
3. Anastasi A. (1976) - "Psychological testing Newyark, Mc-Millan.
4. Pandey, R.S. (1965) - Our Adolescent and their interest Agra India.
5. Bride, R.E. - "Attitude achievement, interest and personality test : A Longitudinal Comparison." J.L. of Applied Psychology - 1955

❑❑❑

03

PHYSICO-CHEMICAL STUDY OF WATER SAMPLES FOR DRINKING PURPOSE

Uzma Parveen Shaikh
Dr. Rafiq Zakaria College for Woman,
Navkhanda, Aurangabad M.S. India

Abstract:

The water samples from two open well, two bore welland one municipal water sample was assessed for different quality parameters. The results were compared with standards prescribed by World Health Organization Bureau of Indian Standards and Indian Council of Medical Research guidelines. Total 20 parameters were analyzed. It was found that the underground water (open well) was contaminated. The bore well water contains excessive halides while municipal water showed physicochemical parameters within the water quality standards and the quality of water is good and is suitable for drinking purpose. The correlation coefficients were calculated for water quality assessment.

Keywords: Physicochemical properties, Water samples, ground water,Drinking water.

Introduction:

Water is one of the most important of all natural resources known on earth. The safety of drinking water is important for the health. The safety of drinking water is affected by various physicochemical factors. The major water quality parameters considered for the examination in this study are pH, Odour, Colour, Taste, Temperature, Turbidity, Total Dissolved Solids (TDS), Dissolved oxygen (DO), Dissolved carbon dioxide, Metals and Metalloids, Total Hardness and Alkalinity. The physicochemical

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

149

ume: 07, Issue: 01, Jan. – Feb. 2020 eISSN NO. 2394-5362
Impact Factor (SJIF) – 5.266

جنگ آزادی میں علماء کا حصہ

(JUNG-E-AZADI MEIN MUSALMANO KA HISSA)

ڈاکٹر عبداللہ چاؤش
اسسٹنٹ پروفیسر
صدر، شعبہ، تاریخ
ڈاکٹر رفیق زکریا کالج فار ویمن
اورنگ آباد (مہاراشٹر) انڈیا

Dr. Rafiq Zakaria Colle... Aurangab...

فضول سمجھ کر بجھا دیا ہے جن چراغوں کو
وہی چراغ جلاؤ تو روشنی ہوگی

جو قوم اپنے ماضی سے کٹ جاتی ہے وہ کبھی بھی مستقبل میں کامیابی کے نقوش ثبت نہیں کر پاتی۔ کامیاب منصوبے ہمیشہ ماضی کی تاریخ سامنے رکھ کر ہی بنائے جاتے ہیں اور جب ماضی کو بھلا دیا جائے یا تاریخ کو مسخ کر دیا جائے یا اس سے دانستہ تجاہل برتا جائے تو پھر اخلاقی زوال قوم کا مقدر بن جاتا ہے۔ اس کا وجود بحیثیت ایک قوم کے صفحۂ ہستی سے مٹ جاتا ہے۔ کیونکہ اس کے امتیازات، اس کی خصوصیات و کمالات غیرت وخواداری کے جذبات اور عظمت و شرافت کا سرچشمہ تھا۔ اس سے رشتہ ٹوٹ گیا تو اس کی رگوں میں وہ گرم خون کہاں سے آئے گا جو اس کے جسم آئے گا جو اس کے جسم میں زندگی کی توانائیاں اور اپنی عزت و اقتدار پر کٹ مرنے کا حوصلہ اور جذبہ پیدا کرتا تھا۔ اسی لئے ہر زندہ اور حوصلہ مند قوم اپنی قومی تاریخ بہت عزیز بنائے رکھتی ہے۔ (۱)

مسلمان ہند ہندوستان میں تاریخ کے جس دور میں آئے اس وقت یہاں کا ماحول اور حالات آج سے زیادہ امید افزا نہیں تھے۔ لیکن وہ حالات اور ماحول کی شکایت میں نہیں لگ گئے بلکہ خود عزم و ہمت کو ہم رکاب لیکر انھوں نے حالات کو سازگار بنایا۔ اپنی عظمت و شرافت، اصول پرستی، عدل و مساوات اور انسانیت نوازی کے کارناموں سے یہاں کے لوگوں کو روشناس کرایا، اپنے بلند اخلاق، رواداری کے مخلصانہ جذبات کا مظاہرہ کر کے اتنا متاثر کیا کہ ہندوستان کی سرزمین نے ان کیلئے اپنی آغوش محبت کھول دی اور ان کو عزت و احترام کے بلند مقام پر بٹھایا۔ تاریخ کی ایک لمبی مسافت ہے۔ انہوں نے اس سرزمین میں عظمت و سربلندی کے لہراتے ہوئے پرچم کے سایہ میں طے کی ہے۔ یہاں کی گریز وادیوں نے ان کے پاؤں جوئے اور سنگلاخ پہاڑیوں نے جھک کر ان کے قدموں کو بوسے دئے۔ تاریخ کے اس پورے دور میں انہوں نے اپنے آپ کو یہاں کی آب و ہوا کے موافق بنایا۔ ان کے ذہن و فراج میں ایک جنگ آزما قوم ہونے کی وجہ سے درشتی (سختی) کو کرختگی (سخت) تھی۔ اس میں یہاں کی نرم رو اور ہواؤں نے اعتدال پیدا کیا، انہوں نے اپنے ساتھ ادب و تہذیب، اخوت و مساوات کا سرمایہ لے کر آئے تھے۔ اس کو انہوں نے یہاں کی ذرخیز زمین نے علم حکمت کے جو ذخیرے محفوظ رکھے تھے، ان کے قدموں میں ڈال دیئے، انہوں نے یہاں کے ذرے ذرے سے محبت کی یہاں کا چپا چپا کو اپنے جذبہ عشق کی سجدہ گاہ بنایا، یہاں کی محبت ریز سرزمین نے ان کے دلوں کو جیت لیا اور وہ بہت جلد بھول گئے، کے وہ کہاں سے آئے تھے اور کونسی سرزمین ان کا وطن تھی، ٹھیک ویسے ہی جیسے ان سے پہلے آنے والی آرین قوم اپنے وطن کو فارموش کر کے یہاں رہ پڑی تھی، انہیں اس نئے وطن نے وہ محبت دی اور شفقت و عنایت کا ہاتھ ان کے سروں پر رکھا۔ ان کے حوصلوں نے ان کی امنگوں کو وہ رعنائیاں اور شادابیاں دیں کہ انہوں نے چند ہی دنوں بعد اس کو مادر وطن کا پر عظمت مقام دے دیا۔ اس کی خدمت ہی ان کی سعادت بن گئی، اس کی حفاظت اور اس کا احترام ان کے لئے سرمایہ افتخار بن گیا۔ اس کی آغوش شفقت و محبت بن گئی۔ آج ان ساری حقیقتوں اور صداقتوں پر ڈیڑھ ہزار سال کی طویل مدت گزر چکی ہے، اور ماضی کے اسکرین پر ان مناظر کی تصویر مرتسم (نشان کیا گیا، مہر لگایا گیا) ہیں۔ جو ہمیں تمہارے ماضی کی یاد دلاتی رہیں گی انھیں بھول جانا ہماری قومی زندگی کا سب سے بڑا حادثہ ہوگا۔ (۲)

Abdullah

Dr. ABDULLAH CHAOUSH
HEAD
Department of History

PRINCIPAL
Dr. Rafiq Zakaria College For Wom...
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
Volume: 06, Issue: 06, Nov. - Dec. 2019 eISSN NO. 2394-53
Impact Factor (SJIF) - 5.266

Rafiq Zakaria College for Women * Aurangabad

MAULANA AZAD KALAM AZAD AS A REVOLUTIONARY JOURNALIST

Dr. Abdullah Basit Chaoush
Assistant Professor
Head, Department of history
Dr. Rafiq Zakaria College for Women
Aurangabad (Maharashtra) India

Introduction:

Maulana Abdul Kalam Azad was born on Nov. 11, 1888 in Macca. His real name was Feroz Bakht and few authors wrote Abul Kalam Ghulam Muhiyddin, but he adopted pen name Azad. Hence popularly known as Maulana Azad Kalam Azad. His father's name was Maulana Khairuddin. His mother was an Arab, her name was Aliya, niece of one of his (father's) teacher Sheikh Mohammed Zaher Vatri. His forefather's came from Heart (a city in Afghanistan) IN Mughal Emperor Babar's days. Azad was a descendent of a lineage of learned Muslim scholar's or Maulvis. He had in him Afghan origins. His father left India during Sepoy Muting and proceeded to Mecca and Settled and married there. Afterwards his father came back to Calculate when Azad was about six years old Maulana Khairuddin Dehalvi was a Sufi peer of the Quadri and Naqshabandi order. Whose disciples include a number of wealthy merchants of the Shutrati Nakhudra community in Calculate, Mumbai and elsewhere? When Azad was fifteen year's old he completed the "Dars-e-Nizami" (1903) or the study of Islamic course a feat ordinary student cloud seldom attain even much latter age. (1)

Abdullah
DR. ABDULLAH CHAOUSH
HEAD

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad

2019-20

151

ISSN 0036-0236, Russian Journal of Inorganic Chemistry, 2020, Vol. 65, No. 3, pp. 390–396. © Pleiades Publishing, Ltd., 2020.

PHYSICAL METHODS OF INVESTIGATION

Potentiometric Studies of Binary and Ternary Complexes of Transition Metal Ions with Ceftriaxone Sodium and Esomeprazole

A. V. Sonone[a], M. Shaikh[b, *], M. Farooqui[b], and A. Durrani[c]

[a]Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India
[b]Maulana Azad college, Aurangabad, 431001 India
*e-mail: shkh_mujahed@rediffmail.com

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

Received August 19, 2018; revised October 9, 2019; accepted October 31, 2019

Abstract—The present paper deals with potentiometric study for formation of binary (1 : 1) and ternary (1 : 1 : 1) complexes of transition metals Ni(II), Cu(II), Co(II), and Zn(II) with Ceftriaxone Sodium and Esomeprazole in aqua-organic medium. The proton–ligand stability constant and metal–ligand stability constant has been calculated using Calvin–Bjerrum technique. The ionic strength has been maintained by 1.0 M $NaClO_4$ and ternary complexes have been calculated by Thomson–Loraas method to determine log K_{AMC} for all the ternary chelates.

Keywords: potentiometric titration, Ceftriaxone Sodium, Esomeprazole, binary, ternary

DOI: 10.1134/S0036023620030016X

INTRODUCTION

The biological system mainly based upon the coordination chemistry of metal ligand complexes; hence, the complexation of transition metal ions with biologically active ligand develops an increasing interest of researchers in a potential pharmaceutical and cosmetics [1–3]. Transition metals have vacant *d* orbital, smaller size, and coordination numbers, which enable them to form the complexes. The first transition series metal ions can be easily coordinated to nitrogen and oxygen atoms [4–6]. The determination of the stability constant is most important for the study of chelates [7]. Stability constant for the formation of metal complex are more important to understand the metabolism of drug substance in human body fluid and to develop new analytical methods and technological process for estimation of it [8]. In the present study pH-metry method used for the determination of stability constant of binary and ternary complexes in Ceftriaxone Sodium (L_1) and Esomeprazole (L_2), which are antibacterial drugs. Drugs have many functional groups, which are present in its skeleton, which binds to metal ions already present in the body [9, 10]. Metal complexes from drugs are to be more potent than drug itself [11].

$C_{18}H_{16}N_8Na_2O_7S_2 \cdot 5H_2O$ is the molecular formula of Rocephin, which is commonly known as Ceftriaxone Sodium (Fig. 1). Rocephin [12] is used to treat bacterial infection, such as middle ear infections, endocarditis, meningitis, pneumonia, bone and joint infections, intra-abdominal infections, skin infections, urinary tract infections, gonorrhea, and pelvic inflammatory disease. The bactericidal activity of ceftriaxone results from inhibition of cell wall synthesis. Ceftriaxone has a high degree of stability in the presence of beta-lactamases, both penicillinases and cephalosporinases has broad-spectrum activity of gram-negative and Gram-positive bacteria. Ceftriaxone Sodium is act as an antibiotic of third generation from cephalosporin family [13].

$C_{17}H_{19}N_3O_5S$ is the molecular formula for Nexium, commonly known as Esomeprazole (Fig. 2). It is (*S*)-(−)-enantiomer of Omeprazole and high value anti-ulcer drug, which reduces the gastric acid secretion and leads to, inhibits gastric acid secretion than Omeprazole. The treatment of Esomeprazole gives higher erosive esophagitis healing effect [14–16]. Recently there are fewer reports of studies of medicinally important compounds with different metal ions.

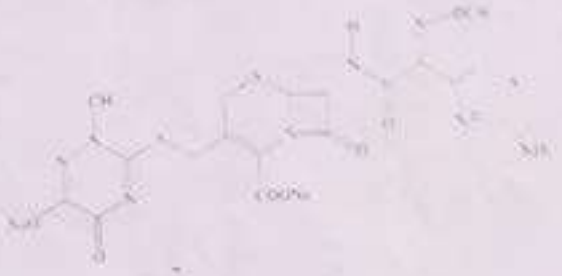


Fig. 1. Structural formula of ligand (L_1).

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Curr. Pharm. Res. **2019**, *407*, 58-65

Current Pharma Research
ISSN-2230-7842
CODEN-CPRUE6
www.jcpronline.in/

Research Article

Theme- *New horizons in chemical sciences.*
Guest Editor- *R.P. Pawar*

pH-metric Study of Metal-ligand Stability Constant of Transition Metal Complexes with Pharmacologically Active Ligand N-[(E)-(4-Hydroxy-3-methoxyphenyl)methylene] Isonicotinohydrazide.

Zamzam Taher Omar (Al-Abdal)[1], Shivaji L. Jadhav[2], D. D. Kayande[3], Megha J. Rai*[1]

[1]Dr. Rafiq Zakaria College for Women, Aurangabad-431001, Maharashtra, India.

[2]Tarai College Paithan, Aurangabad-431001, Maharashtra, India.

[3]S.B.E.S. College, Aurangabad-431001, Maharashtra, India.

Received 12 March 2019, received in revised form 07 August 2019; accepted 14 August 2019

***Corresponding author E-mail address:** drmegha08@gmail.com*

ABSTRACT

The interaction of Mn (II), Co (II), Ni (II), Cu (II) and Zn (II) metal ions with organic ligand N-[(E)-(4-Hydroxy-3-methoxyphenyl) methylene] isonicotinohydrazide have been studied by pH-metric technique at 27±1°C in 70% (v/v) ethanol – water medium at 1M ($NaClO_4$) ionic strength. Organic ligand was synthesized by condensation of equimolar mixture of Anti-mycobacterial agent with aromatic aldehyde. The reaction progress and purity of organic ligands were confirmed by thin layer chromatography. Formation of organic ligands was confirmed with the help of MP, IR, ^1H NMR, ^{13}C NMR and elemental analysis. The stability constants of these binary complexes were evaluated and order of stability constant found as Cu (II) > Co (II) > Mn (II) > Ni (II) > Zn (II).

KEYWORDS

pH-metric technique, Binary complexation, N-[(E)-(4-Hydroxy-3-methoxyphenyl) methylene] isonicotinohydrazide, transition metals.

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

169
2019-2020

Received: 14 February 2020 | Revised: 24 May 2020 | Accepted: 30 May 2020

DOI: 10.1002/jhet.4048

ARTICLE

WILEY

Dr. Rafiq Zakaria College for Women * Aurangabad *

Synthesis of substituted pyrimidine using $ZnFe_2O_4$ nanocatalyst via one pot multi-component reaction ultrasonic irradiation

Pravin Chavan[1] | Sachin Bangale[2] | Dattatraya Pansare[3] | Rohini Shelke[4] | Shivaji Jadhav[5] | Shrikrushna Tupare[6] | Dhanraj Kamble[7] | Megha Rai[8]

[1]Department of Chemistry, Doshi Vakil College, Raigad, India

[2]Department of Chemistry, G. M. Vedak College of Science Tala, Raigad, India

[3]Department of Chemistry, Deogiri College, Aurangabad, India

[4]Department of Chemistry, Sadguru Gadage Maharaj College Karad, Satara, India

[5]Department of Chemistry, Tarsi College of Arts and Science, Aurangabad, India

[6]Department of Chemistry, K.R.S. Anandibhai Pradhan Science College, Raigad, India

[7]Department of Chemistry, S. B. College of Science, Aurangabad, India

[8]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, India

Correspondence
Pravin Chavan, Department of Chemistry, Doshi Vakil College, Goregaon, Raigad, Maharashtra, India.
Email: chemistrypc141286@gmail.com
Dattatraya Pansare, Department of Chemistry, Deogiri College, Aurangabad-431005, Maharashtra, India.
Email: dspansare74@gmail.com

Abstract

A highly efficient, eco-friendly, recyclable heterogeneous $ZnFe_2O_4$ nano-catalyzed synthesis of 2-amino-4-substituted 1,4-dihydrobenzo[4,5]imidazo [1,2-a]pyrimidine-3-carbonitrile (**4a-j**) derivatives via one pot multicomponent reaction of benzimidazole (**1**), substituted aromatic aldehyde (**2a-l**) and malononitrile (**3**) under ultrasonic irradiations. Significance of this synthetic approach is short reaction time, easy handling, simplicity, efficiency, high yield, and recoverable catalyst.

1 | INTRODUCTION

Multi-component reactions (MCRs) are efficient and powerful protocols for the rapid synthesis of highly selective products and organic components, as well as multiple and diverse new bonds have been created in highly efficient and atom-economical manner through one pot synthesis. Thus it saved time, energy and evaded multistep purification of various intermediates.[1] Benzo[4,5]imidazo [1,2-a]pyrimidines have recently attracted attention as important fused nitrogen heterocyclic scaffolds in the field of drugs and pharmaceuticals. These heterocycles have been widely used as Antifungal,[2] hepatoprotective,[3] antihypertensive,[4] antitumour,[5] and cardiotonic agent.[6]

Pyrimidine ring is one of the most important class of heterocyclic compounds found in many natural products,

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

© 2020 Wiley Periodicals LLC

ASSISTANT PROFESSOR
Dr. rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

POLYCYCLIC AROMATIC COMPOUNDS
https://doi.org/10.1080/10406638.2020.1764983

Taylor & Francis
Taylor & Francis Group

Check for updates

Biological Significance of Ultrasound Assisted Synthesized Polycyclic Azetidine Derivatives

Pravin Chavan[a], Shivaji Jadhav[b], Mazahar Farooqui[c], and Megha Rai[c]

[a]Department of Chemistry, Doshi Vakil College, Goregaon-Raigad, India; [b]Department of Chemistry, Tarai College, Paithan, Aurangabad, India; [c]Department of Chemistry, Dr. Rafiq Zakaria College for Woman, Aurangabad, India

ABSTRACT

Synthesized N-(7-*R*)-2-oxa-6-azabicyclo[4.2.0]octan-8-yl)isonicotinamide derivatives (**4a-n**) and N-(2,4-dioxo-3-oxa-6-azabicyclo[3.2.0]heptan-6-yl)isonicotinamide derivatives (**5a-m**) were screened for biologically activity. Both azetidine derivatives (**4a-n**) and (**5a-m**) were screened for antibacterial activity by 'Disk Diffusion method' using *Escherichia coli* (ATCC 25922), *Pseudomonas aeruginosa* (ATCC 27853) and *Staphylococcus aureus* (ATCC 25923) and antifungal activity using *candida sp.* Similar series of azetidine derivatives (4a-n) and (5a-m) were screened for *in vitro* antituberculosis activity by 'Clairo Combi method' using *Mycobacterium tuberculosis* and *in vitro* anti-inflammatory activity was evaluated using 'HRBC membrane stabilization method'. Experimented azetidine derivatives excellent biological activities, (N-(7-R)-2-oxa-6-azabicyclo [3.2.0] heptan-6-yl) isonicotinamide derivatives (**4a-n**) against *S. aureus* bacteria and N-(2,4-dioxo-3-oxa-6-azabicyclo[3.2.0] heptan-6-yl) isonicotinamide derivatives (**5a-m**) against *M. tuberculosis* (T.B.). Both series of azetidine derivatives (**4a-n**) and (**5a-m**) show potent anti-inflammatory activity. All synthesized azetidine derivatives (**4a-n**) and (**5a-m**) were characterized by IR, ^{1}H NMR, 13C NMR and elemental analysis.

ARTICLE HISTORY
Received 14 March 2019
Accepted 30 April 2020

KEYWORDS
Anti-inflammatory; antituberculosis activity; azetidine; microbial activity

Introduction

Heterocyclic drugs are the king of medicinal and pharmaceutical fields because more than 85% drugs have heterocycles. Four-membered nitrogen containing heterocycles such as azetidinone derivatives play vital role in medicinal field.[1] Azetidine heterocycles possess a wide variety of biological activities such as antituberculosis, antibacterial, antifungal, anti-inflammatory, anticonvulsant, antimalarial, anticancer, antiviral, antioxidant, and cardiovascular activities.[2–13] β-Lactam derivative of azetidine displays strong antibiotic property against tuberculosis, fungal, bacteria, etc.[14] Tuberculosis disease is caused by *Mycobacterial tuberculosis*.

Synthesis of azetidine derivatives through multistep reactions involved hazardous chemicals which may produce several toxic side products that will effect leaving organisms. Keeping the view of importance of biological significance of azetidine derivatives and their concerned environmental pollution issues, herein, we have reported the synthesized series of azetidine derivatives through conventional/greener (one pot multicomponent reaction, cycloaddition reaction and ultrasonic irradiation) method and study its biological activities such as antitubercular and anti-inflammatory. Synthesized N-(7-*R*)-2-oxa-6-azabicyclo[3.2.0]heptan-6-yl)isonicotinamide (**4a-n**)[15] and N-(2,4-dioxo-3-oxa-6-azabicyclo[3.2.0]heptan-6-yl)isonicotinamide (**4a-m**)[16] derivatives were

CONTACT Shivaji Jadhav drshivaji1985@gmail.com Department of Chemistry, Tarai College, Paithan, Aurangabad, India.
© 2020 Taylor & Francis Group, LLC

Dr. Rafiq Zakaria College for Women, Aurangabad

ASSISTANT PROFESSOR
Dr. rafiq Zakaria College for Women
Nirkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nirkhanda, Jubilee Park,
AURANGABAD. (M.S.)

19-20

Rafiq Zakaria College for Women

ECB

SYNTHESIS AND BIOLOGICAL ACTIVITIES OF NEW TETRAHYDROQUINOLINE AND PYRIMIDINE DERIVATIVES

Pravin N. Chavan,[a] Dattatraya N. Pansare,[b] Shivaji L. Jadhav[c] and Megha J. Rai[d]*

Keywords: Tetrahydroquinoline, pyrimidine, biological activity.

A series of new tetrahydroquinoline derivatives (4a-j) were prepared by one-pot multicomponent, [4+2] cycloaddition route from 4-aminonaphthalene, aromatic aldehydes and dihydrofurane (DHF) by using $InCl_3$ catalyst under reflux temperature and also, pyrimidine derivatives (5a-n) were prepared by the same route from benzimidazole, aromatic aldehydes and maleic anhydride by using piperidine catalyst under ultrasonic irradiations. The synthesized tetrahydroquinoline and pyrimidine derivatives were characterized (IR, ^{1}H NMR, ^{13}C NMR). The synthesized tetrahydroquinoline and pyrimidine derivatives have been evaluated for antimicrobial, anti-tuberculosis and anti-inflammatory activities.

* Corresponding Authors
Fax: +91 02140 250348
E-Mail: chemistry1412864@gmail.com
[a] Department of Chemistry, Doshi Vakil College, Goregaon, District-Raigad, (MS), India.
[b] Department of Chemistry, Deogiri College, Station road Aurangabad, (MS), India.
[c] Department of Chemistry, Tarai College, Paithan, Aurangabad, (MS), India.
[d] Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, (MS), India.

INTRODUCTION

Now a day, a huge number of a heterocyclic compound discovered through various eco-friendly methods like one-pot multicomponent reaction, ultrasonic irradiations technique or Diels-Alder reactions.[1-3] Tetrahydroquinoline and pyrimidine derivatives are broadly used in medicinal chemistry. They showed a huge number of important biological properties such as antimicrobial,[4-7] antimalarial,[8] analgesic,[9] anthelmintic,[10] anticancer,[11] anti-inflammatory,[12] antiviral[13-16] and anticancer[16] activity. Keeping the view of the biological importance of heterocyclic compounds,[17] we studied the biological activity of tetrahydroquinoline,[18] pyrimidine,[19] thiazolone,[20] and benzoxazolinone[21] derivatives.

EXPERIMENTAL

The starting materials and various solvents were commercially available (Sigma-Aldrich and Avra labs). Reaction courses were monitored by TLC on silica gel precoated F254 Merck plates. Developed plates were examined with UV lamps (254 nm). Melting points were recorded on SRS Optimelt melting point apparatus and are uncorrected. IR spectra were recorded on an FT-IR (Bruker). ^{1}H NMR spectra were recorded on a 400 MHz Bruker spectrometer and were recorded in DMSO-d_6 solvent. ^{13}C NMR spectra were recorded in DMSO-d_6 solvent on a 100 MHz Bruker spectrometer. Chemical shifts are reported as δ ppm units (TMS).

The following abbreviations are used: singlet (s), doublet (d), triplet (t), quartet (q), multiplet (m) and broad (br). Mass spectra were taken with Micromass-QUATTRO-II of WATER mass spectrometer.

General procedure for synthesis of tetrahydroquinoline derivatives

In around bottom flask, 4-aminonaphthalene (0.1 mol), aromatic aldehyde (0.1 mol), dihydrofurane (DHF) (0.1 mol) and catalyst - $InCl_3$ (20 mol %) in EtOH as solvent (5 mL) were refluxed at for 7 h. The reaction condition was checked by employing TLC technique, using ethyl acetate: hexane (5:5) as solvents. After completing reaction, reaction mixture was cooled at room temperature. For crystallization, 10 mL methanol was added to the reaction mixture and then cooled at 22 °C, following stirring for 20 minutes. Products were filtered using G_1 sintered crucible. Products were recrystallized from ethyl alcohol.

11-(2,5-Dimethoxyphenyl)-2,3,3a,10,11,11a-hexahydrobenzo[h]furo[2,3-c]quinoline (4e)

Blackish grey crystal, m.p. 215-218 °C. FT-IR (KBr cm^{-1}): 3324 (-NH), 2910 (-CH), 1503 (-C=C- aromatic), 1210 (ether). ^{1}H NMR 400 MHz, DMSO-d_6) 9.56 (s, 1H, D_2O exchangeable -NH), 8.32-7.45 (m, 6H, Ar), 6.9-7.10 (m, 2H, Ar), 6.75 (s, 1H, Ar), 4.8 (s, 1H, -CH), 4.38 (d, 1H, -CH), 3.77-3.85 (m, 2H, -CH$_2$), 3.8 (s, 6H, -CH$_3$), 2.43 (m, 1H, -CH), 1.1-1.7 (m, 2H, CH$_2$). ^{13}C NMR (100 MHz, DMSO-d_6): 159.51, 156.24, 153.76, 151.34, 127.12, 125.26, 124.96, 112.90, 111.50, 111.34, 110.34, 104.37, 93.19, 78.0, 76.0, 56.10, 40.0, 38.0, Mass (m/z): [M+1]$^+$: 361.16

11-(4-Cyanophenyl)-2,3,3a,10,11,11a-hexahydrobenzo[h]furo[2,3-c]quinoline (4h)

Light yellow crystals, m.p. 250-253 °C. FTIR (KBr cm^{-1}): 3372 (-NH), 2965 (-CH), 2193 (-CN), 1[illegible] aromatic), 1215 (ether).^{1}H NMR [illegible] DMSO-d_6) 10.14 (s, 1H, D_2O exchangeable -NH), [illegible]

PRINCIPAL
Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Received: 14 August 2019 | Revised: 18 November 2019 | Accepted: 2 December 2019

DOI: 10.1002/jhet.3880

WILEY

ARTICLE

Ultrasound assisted, synthesis of *N*-(7-(R)-2-oxa-8-azabicyclo [4.2.0]octan-8-yl)isonicotinamide derivatives and their biological evaluation

Pravin Chavan[1] | Amol Salve[1] | Shivaji Jadhav[2] | Dattatraya Pansare[3] | Megha Rai[4] ©

[1]Department of Chemistry, Dnsbl/Vakil College, Gangapur-Raigad, India

[2]Department of Chemistry, Tarai College, Paithan, Aurangabad, India

[3]Department of Chemistry, Deogiri College, Aurangabad, India

[4]Department of Chemistry, Dr. Rafiq Zakaria College for Woman, Aurangabad, India

Correspondence
Megha Rai, Department of Chemistry, Dr. Rafiq Zakaria College for Woman, Aurangabad, India.
Email: chemistryp141286@gmail.com; drmeghar@gmail.com

Abstract

In this study, new series of azetidine derivatives were synthesised (**4a-n**) from isoniazide (**1**), Aromatic aldehydes (**2a-n**), dihydropyran (**3**) using $SnCl_2$ catalyst, via one pot multicomponent reaction/cycloaddition reaction. The synthesized azetidine derivatives were characterized by IR, ^1H NMR and ^{13}C NMR and have been screened for antimicrobial, antituberculosis and anti-inflammatory activities. In relation to *Staphylococcus aureus* (ATCC 25923) promising antibacterial activity was shown, compounds **4e** and **4k**, followed by compounds **4h**, **4o**, **4f**, **4g** and **4l**. The synthesized azetidine derivatives, **4a**, **4e**, **4j** and **4m** (with zone 12 mm) displayed antituberculosis activity. But its lower potential than, the standard streptomycin (with zone 18 mm). Further **4d** compound alone displayed similar activity.

1 | INTRODUCTION

Many microbial infection problems cause by surgeries such as accidental, organ transformation, and so forth.[1,2] Natural and synthetic heterocyclic drugs have been used against infection diseases. In the world, microbial and fungal are responsible (80%) for deaths.[3,4] Last few past decades, bacterial resistance to antimicrobial, antifungal and antituberculosis agents has become one of the most challenging difficulties in the infections treatments. TB is world oldest (*Mycobacterium tuberculosis*) infectious disease[5], each year causes about 3 million deaths. Over the few past decades, researchers are continuous effort to fight against these kinds of diseases and various new chemotherapeutic drugs have been successively discovered.[6] Azetidine is a one of the chemotherapeutic agent, they possess a huge number of varieties of biological activities such as antibacterial, antifungal, antituberculosis, anti-inflammatory, antioxidant, antimalarial, antiviral, anticancer, anticardiovascular, and so forth.[7–23] Penicillin is one of the famous antibiotic drugs; it has strong antibiotic properties against M. tuberculosis bacteria (TB). But other major problem is route of synthesis, some of synthesis route cause environmental pollution such as water pollution, air pollution. These pollutions cause bacterial/viral infection diseases, however, we have used green synthetic route (one pot multicomponent reaction, cycloaddition reaction, ultrasonic irradiation) for synthesis of *N*-(7-(R)-2-oxa-8-azabicyclo[4.2.0]octan-8-yl)isonicotinamide derivatives (**4a-n**).[24] Synthesized derivatives of azetidine have been tested for antibacterial, antifungal, antituberculosis and anti-inflammatory activities.

2 | RESULT AND DISCUSSION

In our present work, we have synthesized *N*-(7-(R)-2-oxa-8-azabicyclo[4.2.0]octan-8-yl)isonicotinamide derivatives (**4a-n**) via one pot multicomponent (2 + 2) cycloaddition reaction from primary amines, different aromatic aldehydes and using stannous chloride catalyst (Scheme 1.

Dr. Rafiq Zakaria College for Women Aurangabad

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

INTEGRATED FERROELECTRICS
2020, VOL. 205, 88–94
https://doi.org/10.1080/10584587.2019.1675003

Taylor & Francis
Taylor & Francis Group

Potentiometric and Thermodynamic Studies of (*N*-[-(4-Chlorophenyl) Methylene]Nicotinohydrazide) and Its Transition Metal Complexes

Zamzam Taher Omar (Al-Ahdal), Shivaji Jadhav, and Megha Rai

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, MS, India

Dr. Rafiq Zakaria College for Women * Aurangabad *

ABSTRACT

Pharmacologically active organic ligands (*N*-[-(4-chlorophenyl) methylene] nicotinohydrazide) synthesized through the condensation of equimolar mixture of anti-mycobacterial agent (nicotinohydrazide) with aromatic aldehyde. The reaction progress and purity of organic ligands were verified by thin layer chromatography. Formation of organic ligands was confirmed with the help of MP, IR, ^{1}H NMR, 13C NMR and elemental analysis. Further formation of complexes of transition elements such as Mn(II), CO(II), Ni(II), Cu(II) and Zn(II) with organic ligand (Schiff base) *N*-[-(4-chlorophenyl)methylene] nicotinohydrazide were studied by the pH-metric technique at 25 °C, 35 °C and 45 °C in 70% (v/v)ethanol – water medium at 1 M ($NaClO_4$) ionic strength. The stability constants of these binary complexes were evaluated and order of stability constant found as Co (II) < Mn (II) < Ni (II) < Cu (II) < Zn (II). The thermodynamic parameters associated with the complexation reactions also were calculated. It is found that the change in enthalpy (ΔH) and change in Gibb's free energy (ΔG) were negative for all of the systems which suggested that all of the reactions were exothermic. The change in entropy (ΔS) found positive for most of the complexes which indicate in metal-ligand binding process is entropy favorable.

ARTICLE HISTORY
Received 1 October 2018
Accepted 16 September 2019

KEYWORDS
Binary complexation; *N*-[-(4-chlorophenyl) methylene] nicotinohydrazide; enthalpy; entropy; Gibb's free energy

1. Introduction

Schiff bases are now attracting the attention of medicinal chemist. Schiff base containing an amine group (–RC = N–) are commonly formed by the intensification of an initial amine with an active carbonyl [1]. Schiff bases perform an important function in coordination chemistry, because they easily form stable complexes with most transitional metal ions and in the field of coordination chemistry. Metal ions perform vital roles in biological processes [2]. Schiff bases and their complexes have a variety of applications in biological clinical and analytical fields and have a broad assortment of applications in different regions such as biological chemistry, organic, and inorganic chemistry [3,4]. In the field of coordination chemistry, metal ions perform vital roles in biological processes and the mineral complexes have been studied with the Schiff bases links to be utilized in the biological, clinical, analytical, and pharmacological fields [5]. Isoniazid becomes a

CONTACT Megha Rai drmegha08@gmail.com
Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/gint.
© 2019 Taylor & Francis Group, LLC

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

19-20

Curr. Pharm. Res. **2019**, *407*, 58-65

Current Pharma Research
ISSN-2230-7842
CODEN-CPRUE6
www.jcproline.in/

Research Article

Theme- New horizons in chemical sciences.
Guest Editor- R.P. Pawar

pH-metric Study of Metal-ligand Stability Constant of Transition Metal Complexes with Pharmacologically Active Ligand N-[(E)-(4-Hydroxy-3-methoxyphenyl)methylene] isonicotinohydrazide.

Zamzam Taher Omar (Al-Ahdal)[1], Shivaji L. Jadhav[2], D. D. Kayande[3], Megha J. Rai*[1]

[1]Dr. Rafiq Zakaria College for Women, Aurangabad-431001, Maharashtra, India.

[2]Tarai College Paithan, Aurangabad-431001, Maharashtra, India.

[3]S.B.E.S. College, Aurangabad-431001, Maharashtra, India.

Received 12 March 2019; received in revised form 07 August 2019; accepted 14 August 2019

***Corresponding author E-mail address:** *drmegha08@gmail.com*

ABSTRACT

The interaction of Mn (II), Co (II), Ni (II), Cu (II) and Zn (II) metal ions with organic ligand N-[(E)-(4-Hydroxy-3-methoxyphenyl) methylene] isonicotinohydrazide have been studied by pH-metric technique at 27±1°C in 70% (v/v) ethanol – water medium at 1M ($NaClO_4$) ionic strength. Organic ligand was synthesized by condensation of equimolar mixture of Anti-mycobacterial agent with aromatic aldehyde. The reaction progress and purity of organic ligands were confirmed by thin layer chromatography. Formation of organic ligands was confirmed with the help of MP, IR, ^1H NMR, ^{13}C NMR and elemental analysis. The stability constants of these binary complexes were evaluated and order of stability constant found as Cu (II) > Co (II) > Mn (II) > Ni (II) > Zn (II).

KEYWORDS

pH-metric technique, Binary complexation, N-[(E)-(4-Hydroxy-3-methoxyphenyl) methylene] isonicotinohydrazide, transition metals.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navabanda, Jubilee Park,
AURANGABAD. (M.S.)

19-20

Received: 14 August 2019 | Revised: 18 November 2019 | Accepted: 2 December 2019

DOI: 10.1002/jhet.3900

WILEY

ARTICLE

Ultrasound assisted, synthesis of *N*-(7-(R)-2-oxa-8-azabicyclo [4.2.0]octan-8-yl)isonicotinamide derivatives and their biological evaluation

Dr. Rafiq Zakaria College for Women * Aurangabad *

Pravin Chavan[1] | Amol Salve[1] | Shivaji Jadhav[2] | Dattatraya Pansare[3] | Megha Rai[4]

[1]Department of Chemistry, DoshiVakil College, Georgaon-Raigad, India

[2]Department of Chemistry, Taral College, Paithan, Aurangabad, India

[3]Department of Chemistry, Deogiri College, Aurangabad, India

[4]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, India

Correspondence
Megha Rai, Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, India.
Email: chemistryp141286@gmail.com; drmeghar86@gmail.com

Abstract

In this study, new series of azetidine derivatives were synthesised (4a-n) from isoniazide (1), Aromatic aldehydes (2a-n), dihydropyran (3) using $SnCl_2$ catalyst, via one pot multicomponent reaction/cycloaddition reaction. The synthesised azetidine derivatives were characterized by IR, ^1H NMR and ^{13}C NMR and have been screened for antimicrobial, antituberculosis and anti-inflammatory activities. In relation to *Staphylococcus aureus* (ATCC 25923) promising antibacterial activity was shown, compounds **4e** and **4k**, followed by compounds **4h**, **4n**, **4f**, **4g** and **4l**. The synthesised azetidine derivatives, **4a**, **4e**, **4j** and **4m** (with zone 12 mm) displayed antituberculosis activity. But its lower potential than, the standard streptomycin (with zone 18 mm). Further **4d** compound alone displayed similar activity.

1 | INTRODUCTION

Many microbial infection problems cause by surgeries such as accidental, organ transformation, and so forth.[1,2] Natural and synthetic heterocyclic drugs have been used against infectious diseases. In the world, microbial and fungal are responsible (80%) for deaths.[3,4] Last few year decades, bacterial resistance to antitubercular, antifungal and antituberculosis agents has become one of the most challenging difficulties in the infectious treatments. TB is world widest (*Mycobacterium tuberculosis*) infectious disease[5,6], each year causes about 3 million deaths. Over the few past decades, researchers are continuous effort to fight against these kinds of diseases and various new chemotherapeutic drugs have been successfully discovered.[7,8] Azetidine is a one of the chemotherapeutic agent, they possess a huge number of varieties of biological activities such as antibacterial, antifungal, antituberculosis, anti-inflammatory, antioxidant, antimalarial, antiviral, anticancer, anticardiovascular, and so forth.[9-21] Penicillin is one of the famous antibiotic drugs; it has strong antibiotic properties against M. tuberculosis bacteria (TB). But other major problem is route of synthesis, some of synthesis route cause environmental pollution such as water pollution, air pollution. These pollutions cause bacterial/viral infection diseases, however, we have used green synthetic route (one pot multicomponent reaction, cycloaddition reaction, ultrasonic irradiation) for synthesis of *N*-(7-(R)-2-oxa-8-azabicyclo[4.2.0]octan-8-yl)isonicotinamide derivatives (4a-n).[22-24] Synthesised derivatives of azetidine have been tested for antibacterial, antifungal, antituberculosis and anti-inflammatory activities.

2 | RESULT AND DISCUSSION

In our present work, we have synthesised *N*-(7-(R)-2-oxa-8-azabicyclo[4.2.0]octan-8-yl)isonicotinamide derivatives (4a-n) via one pot multicomponent (2 + 2) cycloaddition reaction from primary amines, different aromatic aldehydes and using stannous chloride catalyst (Scheme 1.

© 2020 Allen Publishers, Inc.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

© 2019 IJSRST | Volume 6 | Issue 6 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X
Themed Section: Science and Technology
doi : 10.32628/IJSRST207450

Analysis of Various tea Samples

Uzma Parveen K. Shaikh*
Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India
*Correspondence author E-mail: upshaikh@gmail.com

ABSTRACT

Tannins are water-soluble polyphenols that are present in many plant foods. The aim with this study was to give an overview on the amount of tannin present in various tea samples. A simple and accurate complexometric method is used to determine tannin. Most of the ingredients commonly found in tea samples do not interfere with the determination. Several tea samples were analysed for their tannin content in present study.

Keywords : Tea, Tannin, Polyphenolic Compounds, Calcium Tannate

I. INTRODUCTION

After water, tea is the most widely consumed beverage in the world. It has a cooling, slightly bitter, and astringent flavor that many people enjoy. Tea likely originated in China as a medicinal drink [1]. Tea beverage is prepared by pouring boiling water over processed tea leaves, of the tea plant, *Camellia sinensis* [2]. It was first introduced to Portuguese priests and merchants in China during the 16th century. Drinking tea became popular in Britain during the 17th century. The British introduced it to India, in order to compete with the Chinese monopoly on the product [3]. Tea is valued for its taste, aroma, health benefits, and form part of some cultural practices. Through the ages, tea consumption was associated with beneficial effects on human health. Most of the health-promoting effects of tea are attributed to its polyphenolic compounds and their antioxidant activity. Tannins play an important role and has wide applications. Tannins are water-soluble polyphenols that are present in many plant foods. Recent findings indicate that the major effect of tannins was not due to their inhibition on food consumption or digestion but rather the decreased efficiency in converting the absorbed nutrients to new body substances [4]. The anticarcinogenic and antimutagenic potentials of tannins may be related to their antioxidative property, which is important in protecting cellular oxidative damage, including lipid peroxidaton. The antimicrobial activities of tannins are well documented [5,6]. This study was conducted to estimate tannin content in commonly available tea samples in India.

II. METHODS AND MATERIAL

The data for the present work comprises all in all 05 samples out of which 4 samples are drawn from different brands of black tea available in India and one is green tea sample.(Sample-1 Red Label, Sample-2:Packed Local Brand, Sample-3:Assam tea, Sample-4: Loose Tea Powder, Sample-5: Lipton green tea.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
N. Shalimar Park,

Dr. Rafiq Zakaria College for Women, Aurangabad.

2019-20

http://www.klibjlis.com

eISSN No. 2394-2479

TEACHING TECHNIQUES USEFUL FOR LIBRARY & INFORMATION SCIENCE EDUCATION

Dr. Siddiqui Eraj Azeeza *

* Librarian,
Dr. Rafiq Zakaria College for Women
Aurangabad, Maharashtra, India

QR Code





Teaching:-

India has glorious tradition of teaching and learning, where education was pursued for the sake of knowledge and mukti and not for materialistic benefits. Knowledge is regarded as highest virtue of man. Institutions like Nalanda, Takshashila attracted scholars from abroad for their power of knowledge. There was closer relationship between teacher and taught and the instruction was individualized.

According to Radhakrishan Commission (1948) as cited by Sivaswaroop, P [1] our ancient teachers tried to teach subjects and impart wisdom to their respective disciples. Their idea was based on "Wisdom alongwith Knowledge." Plato emphasized that no amount of factual information would make ordinary man into educational man unless something is awaked in him.

Thus education is ancient times emphasized to impart values to students besides knowledge. The ideal was "Wisdom with Knowledge." The teaching was personalized with teacher and disciples used to imbibe the values of the teacher and treat him as "role model" (mentor). Teaching was regarded in high esteem.

Teaching is one major aspect of academic life, and it is the input from the personal scholarship and research expertise of the staff that give university teaching its special flavour. Teaching's major components are content, communication and feed back.

Here goes the saying of Adi Sankara, *"I bow down to my most adorable teacher who is all*

139

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Mavkhanda, Jubilee Park,
AURANGABAD. (M.S.)

19-20

Heterocyclic Letters
Vol. 10| No.2| |Feb–April| 2020
ISSN : (print) 2231–3087 / (online) 2230-9632
CODEN: HLEEAI
http://heteroletters.org

PEG-OSO_3H CATALYZED SYNTHESIS OF SCHIFF BASES OF ISONIAZIDE AND ITS ANTIBACTERIAL EVALUATION

Dr. Rafiq Zakaria College for Women * Aurangabad

Ayesha Durrani*

**Department of chemistry, Dr. Rafiq Zakaria College for Women,Aurangabad (M.S.), India*

Abstract
Schiff bases are widely used as a precursor of bio-active heterocycles and also applicable as a ligands in Co-ordination chemistry and gaining interest in the area of drug development. Hence, we have developed a highly efficient environmentally benign method to synthesis of biologically active Schiff bases from isoniazide and pyrazole-4-carbaldehyde in water under microwave irradiation PEG-OSO_3H used as a green catalyst to increase the reaction rate and yield of the corresponding Schiff bases.

Keywords: Pyrazole-aldehyde; PEG-OSO_3H; Green Chemistry; Microwave; water.

Introduction:-
The Cyclic-aldehyde especially with an effective conjugated system form stable Schiff bases whereas aliphatic aldehyde are unstable and readily polymerize [i]. A broad range of Schiff bases have extremely diversified and flexible structures [ii]. Schiff bases and amides derived from various heterocyclic compounds displayed broad range of pharmaceutical and biological activities such as antiviral, anticonvulsant, anticancer, antimicrobial, angiotensin-II receptor antagonist, anti-inflammatory and antidepressant activity. Schiff base containing heterocycles and their metal complexes have been widely investigated due to their wide range of applications as medicine [iii], catalysts [iv], antioxidant agent [v-vi]. A Schiff base behaves as a co-ordinates and Flexi-dentate ligand of azomethine group [vii]. Moreover, metal complexes of schiff base are important as an analgesic and antibacterial activity [viii]. Schiff bases have been reported in their biological properties, like, antibacterial, anti fungal activities[ix-xii]. Schiff bases and its metal complexes broadly show herbicidal and anticancer applications [xiii-xiv]. Green solvents and catalyst play an important role in modern heterocyclic synthesis to reduced the harm to the environment and economic cost [xv-xxi].

Herein, A new method has been developed for the preparation of series of Schiff bases of pyrazol-aldehyde and isoniazide using PEG-OSO_3H as a green and efficient catalyst in water.

Synthesis of Schiff bases:-

Ayesha Durrani
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020.

Dr. Rafiq Zakaria College for Women * Aurangabad *

ISSN 0974-3618 (Print)
0974-360X (Online)

www.rjptonline.org

RJPT

RESEARCH ARTICLE

Evaluation of haematological changes in *Entamoeba histolytica*-infected rats administered with extracts of *Ziziphus mauritiana* leaves

Mansour Abdulnabi H. Mehdi[1*], Fadel Y. S. Alarabi[1], Gozif Mohammed N. Omar[2], Khaled Nasher Q. Salem[3], Vidya Pradhan[1]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.
[2]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001, India.
[3]Department of Biology, Faculty of Science, Aden University-Yemen.
*Corresponding Author E-mail: **mansourabdulnabi@gmail.com**

ABSTRACT:
This study was designed to evaluate the changes in some heamatological parameters of *Entamoeba histolytica*-infected rats treated with ethanolic and aqueous extracts of *Ziziphus mauritiana* leaves. The ethanolic and aqueous extracts of the leave at 500mg/kg-1 body weight/day, while a standard antiamoebic drug, metronidazole, at a dose of 500mg/kg-1 body weight was administered on the positive control group for 10 days. The negative control group was uninfected and untreated. The haematological parametrats in the different groups were monitored throughout the period of study which was 10 days on three stages. The results show a significant increase at P≤0.05 in red blood cell count (RBC), haemoglobin (Hb), hematocrit (HCT), mean cell volume (MCV), red cell distribution width (RDW), procalcitonin test (PCT) and total white blood cell (WBC) in groups which treated with *Z. mauritiana* extracts compare with metronidazole drug and the control group during treatment stages. While the results show a significant decrease at P≤0.05 in platelet (PLT), mean platelet volume (MPV), platelet distribution width (PDW), monocyte (MO) and granulocytes (GR) when compared to the control groups of rats. The results also indicate no significant changes at P>0.05 in mean corpuscular haemoglobin (MCH), mean corpuscular haemoglobin concentration (MCHC) and count lymphocyte (LY) during treatment stages. Conclusion: The findings of this study, that the efficiency of *Z. mauritiana* extracts in improving blood standards through variations occurring in blood proportion and not adversely affect the haematological parameters.

KEYWORDS: *Entamoeba histolytica*, *Ziziphus mauritiana*, Haematological parameters.

INTRODUCTION:

Entamoeba histolytica affects millions around the world. It is the second leading cause of death in humans after malaria[1,2]. Despite decades of research, amoebiasis infection remains a major global health problem with high mortality and morbidity than any other infectious disease where the World Health Organization (WHO) estimates that the *E. histolytica* parasite causes approximately 50 million cases of dysentery and 100,000 deaths per year[3].

Despite decades of research, metronidazole remains a therapeutic drug of choice for the treatment of amoebiasis[4], but is experiencing drug resistance by *E. histolytica*, so that resulting in the need for increased doses to overcome the infection. In addition, this drug has several untoward side effects such as headaches, metallic taste in the mouth and vomiting as well as neurotoxicity[5,6]. The resistance of amoebiasis to drugs such as metronidazole has become a serious problem in developing countries[7]. Medicinal plants are popular for use especially in developing countries because their products are safe and widely available at low cost. There is also a need to provide reliable scientific data to determine whether the plants currently used to treat amoebiasis are actually effective and have no adverse effects on the system. This plant is found in most the countries including drought prone regions and has been

Received on 09.10.2019 Modified on 10.12.2019
Accepted on 23.01.2020 © RJPT All right reserved
Research J. Pharm. and Tech 2020; 13(9):4105-4110.
DOI: 10.5958/0974-360X.2020.00725.8

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020-

© 2020 IJRTI | Volume 5, Issue 1 | ISSN: 2456-3315

Assessment of Mycoflora of some Spices from Aurangabad

Baig Mumtaz

Dr.Rafiq Zakaria College for Women, Aurangabad

Abstract: **The present investigations were conducted during 2019-20 in the Department of Botany. Spices are most important agricultural commodities, commonly used to flavor the food preparations. For the study five spice were selected for screening the mycoflora. The seed-borne pathogens are one of the major causes of serious diseases in growing crops because of poor health and quality of seeds. To realize this aspect, the study has been undertaken of spices for seed mycoflora studies. The fungi detected from seeds were Aspergillus flavus, A. niger, A. fumigatus, Alternaria alternata, Curvularia lunata, Fusarium solani, F. chlamydosporum, Rhizopus stolonifer and Trichoderma virides. Among these Aspergillus flavus, A. niger and Fusarium were predominant. The agar plate method was found superior than blotter paper method.**

Keywords: **chlamydosporum. Curvularia lunata and Agricultural commodities etc.**

Introduction:

Spices constitute an important group of horticultural commodities which play a significant role in national economy. They are the plant substances from indigenous or exotic origin. According to the International organization for Standardization (ISO) the term 'spices and condiments' refer to an aromatic or pungent vegetable substances used for flavouring and also have several commercial uses. Spices includes leaves seeds (coriander, mint), flower (clove), , fruit (red chilli, black pepper), and other plant parts (Ram Kumar and Paranay Jain, 2010). They have been used as an integral part of our daily diet, medicine, religious rituals, cosmetics and perfumery. Spices are used as a raw material in folk medicine, as an ingredient in drug preparations of traditional medical systems, in pharmaceutical and as a supplement for dietetic products especially for self medication (Weiser et al., 1971). The therapeutic activity of spices is due to the presence of tartaric acid, acetic acid, citric acid, succinic acid, gums, pectin, sugars, tannins, alkaloids , flavinoids, glycosides and sesquiterpenes The earliest evidence of the use of spice by man was around 50,000 BC. The spice trade developed through the Middle East in around 2000 BC with cinnamon and pepper .Pepper was considered as the most valuable spice and a "sack of pepper" was said to be a worth a man's life. From time immemorial India is known as "The Home of Spices" and about 63 different spices are cultivated in the country (Divakar and Sharma, 2001). The spices contaminated by fungi might cause the health hazards for humans. The spoilage of spice quality and mycotoxin production mainly influenced by type of fungi, food composition and also handling and storage practices. Several other reports have shown fungal contamination of different spices and other agricultural commodities.

Material and Methods

Collection of Seed Sample: The five spice samples Viz Coriandrum sativum L. (Coriander), Cuminum cyminum L. (Cumin); Pepper nigrum L. (Pepper), Foeniculum vulgare (Fennel) ,Syzygium aromaticum (clove)were collected from Local market area Kirana merchant shops and spice sailors of Aurangabad etc. Samples were collected from during the period of April to October 2019. The selected spice samples of unknown variety was collected in sterile polyethylene bags separate.

Isolation of fungi from Spice seeds: For the detection of seed-borne fungi ISTA techniques were used (Anon., 1993). By using Standard blotter And Agar plate about hundred seeds of each sample were tested.

Standard blotter method: Untreated and seeds after treatment with 1% $HgCl_2$for 2 minutes were placed on three layers of moistened blotter paper. 20 seeds per Petri dish. The dishes were incubated for 5-7 days at 28±2°C under 12h, alternating cycle of artificial day light (ADL) and darkness (Anon., 1993).

Agar plate method: Untreated and seeds after treatment with 1% $HgCl_2$ for 2 minutes were placed on Potato dextrose agar (PDA), 20 seeds per Petri dish. The dishes were incubated for 5-7 days at 28 ± 2 °C under 12h, alternating cycle of artificial day light (ADL) and darkness (Anon., 1993).

Identification of fungi: Mycoflora growing on seeds were identified after referencing to Barnett and Hunter (1998), Domsch et al. (1980), Ellis (1971), Gilman (1950), Hanlin (1989), MycoBank (2013), Nelson et al. (1983), Raper et al. (1965) .

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-20

© 2020 IJRTI | Volume 5, Issue 1 | ISSN: 2456-3315

Fungitoxic Activity of *Sterculia foetida* L. against Some Plant Pathogenic Fungi

Dr. Baig Mumtaz

Dr. Rafiq Zakaria College for Women,
Aurangabad.(M.H)

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

***Abstract*: The extensive use of synthetic fungicides creates number of problems of pollution and toxicity. A modern trend to develop biofungicides has emerged recently. Sterculia foetida L. a well-known medicinal plant was screened for its fungi toxic activity against some plant pathogenic fungi by using methanol leaf extract. The extract seems to be more toxic against aspergillus niger and can be further investigated as potential biofungicide.**

***Keywords*: *Sterculia foetida* L... biocontrol, leaf extracts, pathogenic fungi.**

Introduction

The combat of man with fungi started from the dawn of agriculture as economic losses due to fungal disease are tremendous. The problem of pollution and toxicity of synthetic chemicals have provocated the search for herbal bio- fungicides. Various workers have screened number of angiospermic plant extracts for assay of fungi toxic activity (Verma et.al 1999. Singh and Singh, 2000 etal. 2000) and it is being done continuously.

Sterculia foetida L. is a common tree of Sterculiaceace occurring in many parts of India (Sharma and Sanjappa 1993) plant is useful in many respect its seeds are roasted and eaten like chestnusts, wood is used in making rough packages. The leaves are used as herbal medicine as aperient diuretic and insect repellent (Chopra atal 1992).

Pharmacological studies on leaves of this plant are conducted (Mujumdar etal 2000). The Chemical examination of leaf extract reveals the presence of taraxerol . B- sitosterol n-octacosanol (Anjeneyulu and Suryanarayan 1981). A Literature survey indicates lack of investigations on its fungi toxic activity. So the methanolic leaf extracts of this plant are tested against plant pathogenic fungi. Helminthosporium turcicum, Alternaria helianthi and saprophytic fungus Aspergillus niger.

A preliminary phytochemical investigation for presence of alkaloid also conducted.

Materials and methods:

The plant used in this study collected from Aurangabad city it was correctly identified botanically. The methanolic leaf extract was prepared by dissolving 10 gram of dried leaf powder in 100ml of 80% methanol. It was filtered and filtrate was used testing fungi toxic activity. Poisoned food technique was used to test the activity. The three fungi helminthosporium turcicum , Alternaria helianthi and Aspergillus niger obtained from pure cultures where inoculated in 250 ml conical flask in hundred ml. Glucose nitrate medium, 1 ml of methanolic leaf extract was added to each flask. Appropriate control was also maintained 4 replica of each treatment made. The flask where incubated at 37°C ± 1°C for 5 days. On 6th day the mycelial growth was filtered filter paper and the dry mycelial weight was determined. The leaf extract was also tested for presence of alkaloid by using Drangendrof reagent.

Result and Discussion:

The results of mycelial growth treatment of methanolic leaf extract of the test fungi are shown in table. No 2 The result shows that the methanolic leaf extract was considerable toxic to growth of all the three fungi but it was more toxic to Aspergillus niger seed borne fungus. The leaf extract has shown positive test for presence of alkaloid, which can be the cause of fungitoxicity. Further investigations are in progress to determine the potential of these plants as herbal bio fungicides.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-20

Journal of Association of Zoologists, India ISSN: 2229-6549

Dr. Rafiq Zakaria College for Women Aurangabad

Journal of Association of Zoologists, India. Vol. 7 (I), 29-32 (2019)

EFFECT OF FUNGICIDES ON IN-VITRO GROWTH OF *SCLEROTIUM CEPIVORUM* BERK.

Baig Mumtaz
Department of Botany, Dr. Rafiq Zakaria College for Women,
Navkhanda, Jubilee Park, Aurangabad (M.S.), India

Abstract:

White rot (Sclerotium cepivorum Berk), is one of the most destructive soil borne pathogens that pose significant threat to production of garlic and other Allium species in Ethiopia and all over the world. The effect of interaction of certain Metalaxyl –Dithane ,M-45 ,Benzoate were the most effective inhibitors on growth of Sclerotia (Georgiou etal,2000) .In present investigation four fungicides viz. Dithane M-45 ,benomyl, Thiovit, carbandazim and Mancozeb were tested against *Sclerotium cepivorum* by food poisoning technique .These fungicides were diluted with water and added to media, were evaluated for their efficacy against S.cepivorum in vitro.

Key words: *Sclerotium cepivorum*.Berk, fungicides , germination monocotyledonous.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

© 2020 IJRTI | Volume 5, Issue 1 | ISSN: 2456-3315

Morphometric study of Genus *Hibiscus* from family Malvaceae

[1]Sumia Fatima, [2]Minakshi Mahajan

Pesticides and Plant Protection Research Laboratory,
Dr. Rafiq Zakaria College for women, Aurangabad-431001 MH, India
Fergusson College, Pune-4

Dr. Rafiq Zakaria College for Women * Aurangabad

Abstract: **The herbarium specimen of 8 different species of *Hibiscus* deposited at BSI, Western circle, Pune namely *Hibiscus mannihot, Hibiscus collinus, Hibiscus tillaceus, Hibiscus suratensis, Hibiscus hipidissimus, Hibiscus solondra, Hibiscus panduraeformis, Hibiscus trionus*were studied. The quantitative characters were recorded by using scale in cms. Parameters like Principal component analysis (PCA) and cluster analysis applied to the data. The results of both leads to delimitation and closed relation of the taxa. Correlation between all quantitative characters showed that internode is the delimiting factor and petiole length and leaf length are close to each other.Analysis refers to cluster analysis and dendrogram on the basis of farthest neighbour mean characters difference and constrained clustering strategy exhibits dissimilarities in between the species. Eigen value table showed that Internode is actually the main factor and leaf length can also delimit the taxa. Value of scree plot is above one. Internode and leaf length have eigen values above 1. In the morphometric studies it has been observed by the Most allied species are *Hibiscus mannihot* and *Hibiscus collinus* both are closely related and node 6 and node 4 species is the most diverse from the other group.**

Keywords: **Morphometric studies, 8 species of *Hibiscus*, PCA, Cluster analysis**

Introduction

Genus *Hibiscus* belongs to the family Malvaceae. (Fryxell, 1997). Near about 200 species of Hibiscus have been recorded. All the species may be herb, shrub or trees. (Bailey, 1950; Bates,1965; Beers and Howie, 1992; Sumia Fatima 2018).The medicinal uses of flowers, roots and buds are in burning sensation, skin disease and constipation. (Ivan, 1999; Kirtikar and Basu, 1999; Pullaiah, 2006). The extract of flower is very much effective in hair fall. (Burkill, 1995).stages of cancer development (Sharma and Sultana, 2004).Many taxonomist made their contribution on numerical taxonomy. Deshmukh, (2011), Deshmukh & et.al.(2012), Deshmukh& et.al. (2013), and Puhuaand Ohashi, (2010), Puhua, et. al, (2010), Sonibare & et.al, (2004).

Material and Methods

Herbarium of 8 different species like *H. mannihot, H. collima, H. tillaceus, H. suratensis*

*H. hipidissimus, H. solondra, H. panduraeformis, H. trionus*were selected for taking observations on the characters like length of internode, leaf length, breadth of leaf at three part of a leaf.(base, middle and apex) and petiole length. Measurements were taken six characters quantitative characters. Mean values were calculated and processed for principal component analysis The principal component analysis (PCA) was performed following the method described by Sneath and Sokal (1973) and cluster analysis done. Similarity matrix and tolerance of Eigen values calculated by keeping standardized data. Eigen values and variance of the characters were calculated and scree plot graph plotted. (Kovach, 1999, Minakshi Mahajan and Sumia Fatima ,2014). The objectives of all the calculationswas to determine the character that contributed strongly to the delimitation of the taxa and their close relationship on the basis of cluster analysis.

Result and Discussion

Morphometric studies of any taxa are based on Principal Component Analysis and cluster analysis. (Soladoye, et. al., 2010). The study was carried out for 8 species of Hibiscus for 6 characters.

Table 1. Voucher specimen of Herbarium
Fig 2.Dendrogram showing clusters
Table 3. Text Dendrogram
Fig 4. Scree plot on the basis of Eigen value percentage
Table 5. Similarity matrix
Table 6 Eigen value percentage
Tabe 7. Variance in quantitative characters
Table 8 Euclidean distance

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Journal of Drug Delivery and Therapeutics

Pharmacognostic Study of Leaves of *Kigelia pinnata* (Lam) Benth

Sumia Fatima*, P.D.Lokare

Dr. Rafiq Zakaria College for Women Aurangabad

ABSTRACT

Keywords:

Article Info

Cite this article as:

Address for Correspondence:

INTRODUCTION:

ISSN: 2250-1177

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Naykhanda, Jubilee Park
AURANGABAD. (M.S.)

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 8, Issue 12, 762-770. Research Article ISSN 2277– 7105

SYMPTOMS AS AN IDENTIFICATION KEY OF POST HARVEST DISEASES OF APPLE (*MALUS DOMESTICA*)

***Sumia Fatima**

Pesticides and Plant Rotection Research Laboratory Dr. Rafiq Zakaria College for Women, Aurangabad-431001, (M.S.) India.

Dr. Rafiq Zakaria College for Women * Aurangabad *

Article Received on
22 August 2019,
Revised on 12 Sept. 2019,
Accepted on 02 Oct. 2019,
DOI: 10.20959/wjpr201912-15908

***Corresponding Author**
Sumia Fatima
Pesticides and Plant Rotection Research Laboratory Dr. Rafiq Zakaria College for Women, Aurangabad-431001, (M.S.) India.

ABSTRACT

Apple is highly delicious fruit which is very commonly grown in the countries of temperate regions of the world. The injured fruits get injured by saprophytic fungi which cases fruit rot disease during transportation. Sometimes, the pathogenic fungi remain inside fruit tissue and develop into rot of fruit during storage periods. Total 36 types of post harvest fungi which causes different types of symptoms that help as identification key of post harvest diseases of apple.

KEYWORDS: *Malus Domestica,* saprophytic fungi.

INTRODUCTION

In India apple growing areas are limited. The Himachal Pradesh, Simla, Kashmir are the main regions growing apple in large scale. It is the best source of energy, minerals, and vitamins. There are many varieties of apple occur in world. Patel, et, al. (1949) reported about 500 varieties of apple occur in the world. The important varieties of apple which occur in India are Golden delicious, Ambri, Lal Ambri, Maharaji, Red delicious, red June, king of pippins, starking delicious, Benonic, Irish, Peach and Sunchari.

MATERIAL AND METHOD

Collection of infected Apple

The Apple fruits were collected from different fruit store houses of different go downs of Aurangabad. The infected fruits of each type of infection collected in separate polythin bag and from the same lot 10 immature healthy fruits were collected in a sterile polythin bag and from the same lot 10 immature healthy Apples brought to the laboratory in an another

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 8, Issue 12, 757-761. Research Article ISSN 2277– 7105

STUDY OF INCIDENCE OF TWO MAJOR POST HARVEST DISEASES OF STRAWBERRY (*FRAGARIA INDICA* L.) IN MARATHWADA

***Sumia Fatima**

Pesticides and Plant Protection Research Laboratory Dr. Rafiq Zakaria College for Women, Jubilee Park, Aurangabad-431001.

Dr. Rafiq Zakaria College for Women * Aurangabad *

Article Received on
22 August 2019,
Revised on 12 Sept. 2019,
Accepted on 02 Oct. 2019,
DOI: 10.20959/wjpr201912-15883

***Corresponding Author**
Sumia Fatima
Pesticides and Plant Protection Research Laboratory Dr. Rafiq Zakaria College for Women, Jubilee Park, Aurangabad-431001.

ABSTRACT

The fruits of Strawberry (*Fragaria indica* L.) are highly perishable fruits due to their extreme tenderness, vulnerability to mechanical damage, high level of respiration and their susceptibility to fungal spoilage. It has noted that 53.4% strawberries were infected by *Fusarium oxysporum f.sp. fragariae*. The percentage of infected strawberries due to growth of *Rhizopus stolonifer* was 34% respectively. This indicates that these two post harvest fungi such as *Fusarium oxysporum f.sp. fragariae* and *Rhizopus stolonifer* were economically important fungi causing major losses of strawberries in Marathwada region.

KEYWORDS: Strawberry (*Fragaria indica* L.), two major post harvest diseases.

INTRODUCTION

The fruit is highly nutritious. It is the best source of minerals such as Phosphorous, Calcium, and Iron. It also consist of vitamin –C, niacin, carotene, thiamine, riboflavin, and crude fiber. It is very commonly cultivated in the tropical and subtropical regions of world. Major loss of harvested fruits is caused due to fungi. The diseases caused before harvest of fruits also responsible for degradation of quality and cost of fruits in market. Post – harvest loss of fruits may be due to susceptibly of fruits to the fungal growth, Bhaskara, et. al, 1998). The physiology and morphology of fruit is also responsible for susceptibility of fruit to diseases. The soft skinned fruits are more susceptible than tough skinned fruits. Sumia Fatima, et. al,

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Download full-text PDF | Read full-text | Download citation | Copy link

Article | PDF Available

Antifungal Activity of Medicinal Plants Cymbopogon sprenge L., Mentha spicata L., and Murraya koenigii L. against Growth of Fungi Aspergillus niger and Mucor spp.

December 2019

Authors:

Sumia Fatima
Dr Rafiq Zakaria College for Women, Aurangabad-431001

Priya Lokare
Lokmete Ramdas Patil Chumal Arts, Science and Commerce College, Ralegaon

Dr. Rafiq Zakaria College for Women * Aurangabad *

References (13)

Abstract

Medicinal plants are distributed all over the world. Plants are affected by the various types of the diseases as bacterial, nematodal, viral, fungal etc. These all are the infectious diseases caused to any part of plants and damage it. These medicinal plants extracts are used to stop the fungal infection hence; it is called as 'antifungal'. An antifungal is a drug produced from the extract of the medicinal plants and use to cure the fungal infections. From the above result it concludes that M. koenigii and C. sprenge has highly antifungal activity in aqueous extract than n-butanol solvent against A. niger and Mucor spps. Therefore, now a days use of natural plant derived fungicide is evolved as an alternative to synthetic fungicides.

Discover the world's research

- 20+ million members
- 135+ million publications
- Tools for projects

Join for free

Sponsored videos

Public Full-text (1)

Content uploaded by Priya Lokare Author content
Content may be subject to copyright.



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nyakhanda, Jubilee Park,
AURANGABAD (M.S.)

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

2019-20

Dr. Rafiq Zakaria College for Women
Aurangabad

International Journal of Research in Pharmacy and Life Sciences

Journal Home Page: www.pharmaresearchlibrary.com/ijrpls

RESEARCH ARTICLE

Impact of environmental factors on growth and sporulation of fungi causing market diseases of fruits and vegetables

Sumia Fatima

Pesticides & Plant Protection Research Laboratory, Dr. Rafiq Zakaria College for Women, Aurangabad (Maharashtra) MS, India.

ABSTRACT

The environmental factors such as factor temperature, light and pH plays a very important role on growth and sporulation of fungi. The change in temperature, pH and pH directly affect the growth and sporulation of fungi. The optimum temperature of each type of fungus is different. At very low temperature several fungi get inhibited and at very high temperature inhibits the growth and development of fungus. The interesting aspect optimum temperature for growth and sporulation. Most of the fungi of tropical region responsible for great harvest diseases of fruits and vegetables grow and sporulation takes place at temperatures from 25°C to 30°C. The highest growth of Alternaria alternata, Aspergillus niger, Aspergillus flavus, Aspergillus fumigatus, Colletotrichum gloeosporioides and Penicillium citrinum was observed at 30°C temperature, pH 6.5 to 7.5 sporulation was good seen in Alternaria alternata, Aspergillus niger, Aspergillus flavus, Colletotrichum gloeosporioides and Penicillium citrinum. pH range 5 to 8 were found suitable for the growth of all the pathogens. Four different ordinary soils selected to observe the effect of different soil on the growth of the pathogens.

Keywords: Environmental factors

ARTICLE INFO

Corresponding Author
Sumia Fatima
Pesticides & Plant Protection Research Laboratory
Dr. Rafiq Zakaria College for Women
Aurangabad (Maharashtra) MS, India.

MS-ID: IRPLS4060

PAPYROLOGY

ARTICLE HISTORY: Received 15 March 2019; Accepted 1 April 2019; Available Online 22 May 2019

Copyright© 2019 Sumia Fatima, Pesticides and Plant Protection Research Laboratory. All rights reserved.

This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

Citation: Sumia Fatima. Impact of the environmental factors on growth and sporulation of fungi causing market diseases of fruits and vegetables. Int. J. Res. Pharm. Life Sci. 2019;4(3):1-5.

CONTENTS

1. Introduction
2. Materials and Methods
3. Results and Discussion
4. References

1. Introduction

The environmental factors greatly affect the growth and sporulation of fungi causing great harvest diseases of fruits and vegetables. Depletion of physical factors directly impact on growth and sporulation of fungi. Temperature, humidity, light and pH are important factors which affect the growth and sporulation of fungi. Temperature is considered one of the most important factors affecting fungal growth and sporulation. Similar results have been reported by several workers [1] Ahmad and Sumbreen [2] Ahmad [3] Ahmad and Sumbreen [4] Ahmad [5] Ahmad and Sumbreen [6] Ahmad [7] Ahmad and Sumbreen [8] Ahmad [9] Ahmad and Sumbreen [10] Ahmad [11] Ahmad and Sumbreen [12] Ahmad [13] Ahmad and Sumbreen [14] Ahmad [15] Ahmad and Sumbreen [16] Ahmad [17] Ahmad and Sumbreen [18] Ahmad [19] Ahmad and Sumbreen [20] Ahmad [21] Ahmad and Sumbreen [22] Ahmad [23] Ahmad and Sumbreen [24] Ahmad [25] Ahmad and Sumbreen [26] Ahmad [27] Ahmad and Sumbreen [28] Ahmad [29] Ahmad and Sumbreen [30] Ahmad [31] Ahmad and Sumbreen [32] Ahmad [33] Ahmad and Sumbreen [34] Ahmad [35] Ahmad and Sumbreen [36] Ahmad [37] Ahmad and Sumbreen [38] Ahmad [39] Ahmad and Sumbreen [40] Ahmad [41] Ahmad and Sumbreen [42] Ahmad [43] Ahmad and Sumbreen [44] Ahmad [45] Ahmad and Sumbreen [46] Ahmad [47] Ahmad and Sumbreen [48] Ahmad [49] Ahmad and Sumbreen [50] Ahmad [51] Ahmad and Sumbreen [52] Ahmad [53] Ahmad and Sumbreen [54] Ahmad [55] Ahmad and Sumbreen [56] Ahmad [57] Ahmad and Sumbreen [58] Ahmad [59] Ahmad and Sumbreen [60] Ahmad [61] Ahmad and Sumbreen [62] Ahmad [63] Ahmad and Sumbreen [64] Ahmad [65] Ahmad and Sumbreen [66] Ahmad [67] Ahmad and Sumbreen [68] Ahmad [69] Ahmad and Sumbreen [70] Ahmad [71] Ahmad and Sumbreen [72] Ahmad [73] Ahmad and Sumbreen [74] Ahmad [75] Ahmad and Sumbreen [76] Ahmad [77] Ahmad and Sumbreen [78] Ahmad [79] Ahmad and Sumbreen [80] Ahmad [81] Ahmad and Sumbreen [82] Ahmad [83] Ahmad and Sumbreen [84] Ahmad [85] Ahmad and Sumbreen [86] Ahmad [87] Ahmad and Sumbreen [88] Ahmad [89] Ahmad and Sumbreen [90] Ahmad [91] Ahmad and Sumbreen [92] Ahmad [93] Ahmad and Sumbreen [94] Ahmad [95] Ahmad and Sumbreen [96] Ahmad [97] Ahmad and Sumbreen [98] Ahmad [99] Ahmad and Sumbreen [100] Ahmad [101] Ahmad and Sumbreen [102] Ahmad [103] Ahmad and Sumbreen [104] Ahmad [105] Ahmad and Sumbreen [106] Ahmad [107] Ahmad and Sumbreen [108] Ahmad [109] Ahmad and Sumbreen [110] Ahmad [111] Ahmad and Sumbreen [112] Ahmad [113] Ahmad and Sumbreen [114] Ahmad [115] Ahmad and Sumbreen [116] Ahmad [117] Ahmad and Sumbreen [118] Ahmad [119] Ahmad and Sumbreen [120] Ahmad [121] Ahmad and Sumbreen [122] Ahmad [123] Ahmad and Sumbreen [124] Ahmad [125] Ahmad and Sumbreen [126] Ahmad [127] Ahmad and Sumbreen [128] Ahmad [129] Ahmad and Sumbreen [130] Ahmad [131] Ahmad and Sumbreen [132] Ahmad [133] Ahmad and Sumbreen [134] Ahmad [135] Ahmad and Sumbreen [136] Ahmad [137] Ahmad and Sumbreen [138] Ahmad [139] Ahmad and Sumbreen [140] Ahmad [141] Ahmad and Sumbreen [142] Ahmad [143] Ahmad and Sumbreen [144] Ahmad [145] Ahmad and Sumbreen [146] Ahmad [147] Ahmad and Sumbreen [148] Ahmad [149] Ahmad and Sumbreen [150] Ahmad [151] Ahmad and Sumbreen [152] Ahmad [153] Ahmad and Sumbreen [154] Ahmad [155] Ahmad and Sumbreen [156] Ahmad [157] Ahmad and Sumbreen [158] Ahmad [159] Ahmad and Sumbreen [160] Ahmad [161] Ahmad and Sumbreen [162] Ahmad [163] Ahmad and Sumbreen [164] Ahmad [165] Ahmad and Sumbreen [166] Ahmad [167] Ahmad and Sumbreen [168] Ahmad [169] Ahmad and Sumbreen [170] Ahmad [171] Ahmad and Sumbreen [172] Ahmad [173] Ahmad and Sumbreen [174] Ahmad [175] Ahmad and Sumbreen [176] Ahmad [177] Ahmad and Sumbreen [178] Ahmad [179] Ahmad and Sumbreen [180] Ahmad [181] Ahmad and Sumbreen [182] Ahmad [183] Ahmad and Sumbreen [184] Ahmad [185] Ahmad and Sumbreen [186] Ahmad [187] Ahmad and Sumbreen [188] Ahmad [189] Ahmad and Sumbreen [190] Ahmad [191] Ahmad and Sumbreen [192] Ahmad [193] Ahmad and Sumbreen [194] Ahmad [195] Ahmad and Sumbreen [196] Ahmad [197] Ahmad and Sumbreen [198] Ahmad [199] Ahmad and Sumbreen [200] Ahmad [201] Ahmad and Sumbreen [202] Ahmad [203] Ahmad and Sumbreen [204] Ahmad [205] Ahmad and Sumbreen [206] Ahmad [207] Ahmad and Sumbreen [208] Ahmad [209] Ahmad and Sumbreen [210] Ahmad [211] Ahmad and Sumbreen [212] Ahmad [213] Ahmad and Sumbreen [214] Ahmad [215] Ahmad and Sumbreen [216] Ahmad [217] Ahmad and Sumbreen [218] Ahmad [219] Ahmad and Sumbreen [220] Ahmad [221] Ahmad and Sumbreen [222] Ahmad [223] Ahmad and Sumbreen [224] Ahmad [225] Ahmad and Sumbreen [226] Ahmad [227] Ahmad and Sumbreen [228] Ahmad [229] Ahmad and Sumbreen [230] Ahmad [231] Ahmad and Sumbreen [232] Ahmad [233] Ahmad and Sumbreen [234] Ahmad [235] Ahmad and Sumbreen [236] Ahmad [237] Ahmad and Sumbreen [238] Ahmad [239] Ahmad and Sumbreen [240] Ahmad [241] Ahmad and Sumbreen [242] Ahmad [243] Ahmad and Sumbreen [244] Ahmad [245] Ahmad and Sumbreen [246] Ahmad [247] Ahmad and Sumbreen [248] Ahmad [249] Ahmad and Sumbreen [250] Ahmad [251] Ahmad and Sumbreen [252] Ahmad [253] Ahmad and Sumbreen [254] Ahmad [255] Ahmad and Sumbreen [256] Ahmad [257] Ahmad and Sumbreen [258] Ahmad [259] Ahmad and Sumbreen [260] Ahmad [261] Ahmad and Sumbreen [262] Ahmad [263] Ahmad and Sumbreen [264] Ahmad [265] Ahmad and Sumbreen [266] Ahmad [267] Ahmad and Sumbreen [268] Ahmad [269] Ahmad and Sumbreen [270] Ahmad [271] Ahmad and Sumbreen [272] Ahmad [273] Ahmad and Sumbreen [274] Ahmad [275] Ahmad and Sumbreen [276] Ahmad [277] Ahmad and Sumbreen [278] Ahmad [279] Ahmad and Sumbreen [280] Ahmad [281] Ahmad and Sumbreen [282] Ahmad [283] Ahmad and Sumbreen [284] Ahmad [285] Ahmad and Sumbreen [286] Ahmad [287] Ahmad and Sumbreen [288] Ahmad [289] Ahmad and Sumbreen [290] Ahmad [291] Ahmad and Sumbreen [292] Ahmad [293] Ahmad and Sumbreen [294] Ahmad [295] Ahmad and Sumbreen [296] Ahmad [297] Ahmad and Sumbreen [298] Ahmad [299] Ahmad and Sumbreen [300] Ahmad [301] Ahmad and Sumbreen [302] Ahmad [303] Ahmad and Sumbreen [304] Ahmad [305] Ahmad and Sumbreen [306] Ahmad [307] Ahmad and Sumbreen [308] Ahmad [309] Ahmad and Sumbreen [310] Ahmad [311] Ahmad and Sumbreen [312] Ahmad [313] Ahmad and Sumbreen [314] Ahmad [315] Ahmad and Sumbreen [316] Ahmad [317] Ahmad and Sumbreen [318] Ahmad [319] Ahmad and Sumbreen [320] Ahmad [321] Ahmad and Sumbreen [322] Ahmad [323] Ahmad and Sumbreen [324] Ahmad [325] Ahmad and Sumbreen [326] Ahmad [327] Ahmad and Sumbreen [328] Ahmad [329] Ahmad and Sumbreen [330] Ahmad [331] Ahmad and Sumbreen [332] Ahmad [333] Ahmad and Sumbreen [334] Ahmad [335] Ahmad and Sumbreen [336] Ahmad [337] Ahmad and Sumbreen [338] Ahmad [339] Ahmad and Sumbreen [340] Ahmad [341] Ahmad and Sumbreen [342] Ahmad [343] Ahmad and Sumbreen [344] Ahmad [345] Ahmad and Sumbreen [346] Ahmad [347] Ahmad and Sumbreen [348] Ahmad [349] Ahmad and Sumbreen [350] Ahmad [351] Ahmad and Sumbreen [352] Ahmad [353] Ahmad and Sumbreen [354] Ahmad [355] Ahmad and Sumbreen [356] Ahmad [357] Ahmad and Sumbreen [358] Ahmad [359] Ahmad and Sumbreen [360] Ahmad [361] Ahmad and Sumbreen [362] Ahmad [363] Ahmad and Sumbreen [364] Ahmad [365] Ahmad and Sumbreen [366] Ahmad [367] Ahmad and Sumbreen [368] Ahmad [369] Ahmad and Sumbreen [370] Ahmad [371] Ahmad and Sumbreen [372] Ahmad [373] Ahmad and Sumbreen [374] Ahmad [375] Ahmad and Sumbreen [376] Ahmad [377] Ahmad and Sumbreen [378] Ahmad [379] Ahmad and Sumbreen [380] Ahmad [381] Ahmad and Sumbreen [382] Ahmad [383] Ahmad and Sumbreen [384] Ahmad [385] Ahmad and Sumbreen [386] Ahmad [387] Ahmad and Sumbreen [388] Ahmad [389] Ahmad and Sumbreen [390] Ahmad [391] Ahmad and Sumbreen [392] Ahmad [393] Ahmad and Sumbreen [394] Ahmad [395] Ahmad and Sumbreen [396] Ahmad [397] Ahmad and Sumbreen [398] Ahmad [399] Ahmad and Sumbreen [400] Ahmad [401] Ahmad and Sumbreen [402] Ahmad [403] Ahmad and Sumbreen [404] Ahmad [405] Ahmad and Sumbreen [406] Ahmad [407] Ahmad and Sumbreen [408] Ahmad [409] Ahmad and Sumbreen [410] Ahmad [411] Ahmad and Sumbreen [412] Ahmad [413] Ahmad and Sumbreen [414] Ahmad [415] Ahmad and Sumbreen [416] Ahmad [417] Ahmad and Sumbreen [418] Ahmad [419] Ahmad and Sumbreen [420] Ahmad [421] Ahmad and Sumbreen [422] Ahmad [423] Ahmad and Sumbreen [424] Ahmad [425] Ahmad and Sumbreen [426] Ahmad [427] Ahmad and Sumbreen [428] Ahmad [429] Ahmad and Sumbreen [430] Ahmad [431] Ahmad and Sumbreen [432] Ahmad [433] Ahmad and Sumbreen [434] Ahmad [435] Ahmad and Sumbreen [436] Ahmad [437] Ahmad and Sumbreen [438] Ahmad [439] Ahmad and Sumbreen [440] Ahmad [441] Ahmad and Sumbreen [442] Ahmad [443] Ahmad and Sumbreen [444] Ahmad [445] Ahmad and Sumbreen [446] Ahmad [447] Ahmad and Sumbreen [448] Ahmad [449] Ahmad and Sumbreen [450] Ahmad [451] Ahmad and Sumbreen [452] Ahmad [453] Ahmad and Sumbreen [454] Ahmad [455] Ahmad and Sumbreen [456] Ahmad [457] Ahmad and Sumbreen [458] Ahmad [459] Ahmad and Sumbreen [460] Ahmad [461] Ahmad and Sumbreen [462] Ahmad [463] Ahmad and Sumbreen [464] Ahmad [465] Ahmad and Sumbreen [466] Ahmad [467] Ahmad and Sumbreen [468] Ahmad [469] Ahmad and Sumbreen [470] Ahmad [471] Ahmad and Sumbreen [472] Ahmad [473] Ahmad and Sumbreen [474] Ahmad [475] Ahmad and Sumbreen [476] Ahmad [477] Ahmad and Sumbreen [478] Ahmad [479] Ahmad and Sumbreen [480] Ahmad [481] Ahmad and Sumbreen [482] Ahmad [483] Ahmad and Sumbreen [484] Ahmad [485] Ahmad and Sumbreen [486] Ahmad [487] Ahmad and Sumbreen [488] Ahmad [489] Ahmad and Sumbreen [490] Ahmad [491] Ahmad and Sumbreen [492] Ahmad [493] Ahmad and Sumbreen [494] Ahmad [495] Ahmad and Sumbreen [496] Ahmad [497] Ahmad and Sumbreen [498] Ahmad [499] Ahmad and Sumbreen [500] Ahmad [501] Ahmad and Sumbreen [502] Ahmad [503] Ahmad and Sumbreen [504] Ahmad [505] Ahmad and Sumbreen [506] Ahmad [507] Ahmad and Sumbreen [508] Ahmad [509] Ahmad and Sumbreen [510] Ahmad [511] Ahmad and Sumbreen [512] Ahmad [513] Ahmad and Sumbreen [514] Ahmad [515] Ahmad and Sumbreen [516] Ahmad [517] Ahmad and Sumbreen [518] Ahmad [519] Ahmad and Sumbreen [520] Ahmad [521] Ahmad and Sumbreen [522] Ahmad [523] Ahmad and Sumbreen [524] Ahmad [525] Ahmad and Sumbreen [526] Ahmad [527] Ahmad and Sumbreen [528] Ahmad [529] Ahmad and Sumbreen [530] Ahmad [531] Ahmad and Sumbreen [532] Ahmad [533] Ahmad and Sumbreen [534] Ahmad [535] Ahmad and Sumbreen [536] Ahmad [537] Ahmad and Sumbreen [538] Ahmad [539] Ahmad and Sumbreen [540] Ahmad [541] Ahmad and Sumbreen [542] Ahmad [543] Ahmad and Sumbreen [544] Ahmad [545] Ahmad and Sumbreen [546] Ahmad [547] Ahmad and Sumbreen [548] Ahmad [549] Ahmad and Sumbreen [550] Ahmad [551] Ahmad and Sumbreen [552] Ahmad [553] Ahmad and Sumbreen [554] Ahmad [555] Ahmad and Sumbreen [556] Ahmad [557] Ahmad and Sumbreen [558] Ahmad [559] Ahmad and Sumbreen [560] Ahmad [561] Ahmad and Sumbreen [562] Ahmad [563] Ahmad and Sumbreen [564] Ahmad [565] Ahmad and Sumbreen [566] Ahmad [567] Ahmad and Sumbreen [568] Ahmad [569] Ahmad and Sumbreen [570] Ahmad [571] Ahmad and Sumbreen [572] Ahmad [573] Ahmad and Sumbreen [574] Ahmad [575] Ahmad and Sumbreen [576] Ahmad [577] Ahmad and Sumbreen [578] Ahmad [579] Ahmad and Sumbreen [580] Ahmad [581] Ahmad and Sumbreen [582] Ahmad [583] Ahmad and Sumbreen [584] Ahmad [585] Ahmad and Sumbreen [586] Ahmad [587] Ahmad and Sumbreen [588] Ahmad [589] Ahmad and Sumbreen [590] Ahmad [591] Ahmad and Sumbreen [592] Ahmad [593] Ahmad and Sumbreen [594] Ahmad [595] Ahmad and Sumbreen [596] Ahmad [597] Ahmad and Sumbreen [598] Ahmad [599] Ahmad and Sumbreen [600] Ahmad [601] Ahmad and Sumbreen [602] Ahmad [603] Ahmad and Sumbreen [604] Ahmad [605] Ahmad and Sumbreen [606] Ahmad [607] Ahmad and Sumbreen [608] Ahmad [609] Ahmad and Sumbreen [610] Ahmad [611] Ahmad and Sumbreen [612] Ahmad [613] Ahmad and Sumbreen [614] Ahmad [615] Ahmad and Sumbreen [616] Ahmad [617] Ahmad and Sumbreen [618] Ahmad [619] Ahmad and Sumbreen [620] Ahmad [621] Ahmad and Sumbreen [622] Ahmad [623] Ahmad and Sumbreen [624] Ahmad [625] Ahmad and Sumbreen [626] Ahmad [627] Ahmad and Sumbreen [628] Ahmad [629] Ahmad and Sumbreen [630] Ahmad [631] Ahmad and Sumbreen [632] Ahmad [633] Ahmad and Sumbreen [634] Ahmad [635] Ahmad and Sumbreen [636] Ahmad [637] Ahmad and Sumbreen [638] Ahmad [639] Ahmad and Sumbreen [640] Ahmad [641] Ahmad and Sumbreen [642] Ahmad [643] Ahmad and Sumbreen [644] Ahmad [645] Ahmad and Sumbreen [646] Ahmad [647] Ahmad and Sumbreen [648] Ahmad [649] Ahmad and Sumbreen [650] Ahmad [651] Ahmad and Sumbreen [652] Ahmad [653] Ahmad and Sumbreen [654] Ahmad [655] Ahmad and Sumbreen [656] Ahmad [657] Ahmad and Sumbreen [658] Ahmad [659] Ahmad and Sumbreen [660] Ahmad [661] Ahmad and Sumbreen [662] Ahmad [663] Ahmad and Sumbreen [664] Ahmad [665] Ahmad and Sumbreen [666] Ahmad [667] Ahmad and Sumbreen [668] Ahmad [669] Ahmad and Sumbreen [670] Ahmad [671] Ahmad and Sumbreen [672] Ahmad [673] Ahmad and Sumbreen [674] Ahmad [675] Ahmad and Sumbreen [676] Ahmad [677] Ahmad and Sumbreen [678] Ahmad [679] Ahmad and Sumbreen [680] Ahmad [681] Ahmad and Sumbreen [682] Ahmad [683] Ahmad and Sumbreen [684] Ahmad [685] Ahmad and Sumbreen [686] Ahmad [687] Ahmad and Sumbreen [688] Ahmad [689] Ahmad and Sumbreen [690] Ahmad [691] Ahmad and Sumbreen [692] Ahmad [693] Ahmad and Sumbreen [694] Ahmad [695] Ahmad and Sumbreen [696] Ahmad [697] Ahmad and Sumbreen [698] Ahmad [699] Ahmad and Sumbreen [700] Ahmad [701] Ahmad and Sumbreen [702] Ahmad [703] Ahmad and Sumbreen [704] Ahmad [705] Ahmad and Sumbreen [706] Ahmad [707] Ahmad and Sumbreen [708] Ahmad [709] Ahmad and Sumbreen [710] Ahmad [711] Ahmad and Sumbreen [712] Ahmad [713] Ahmad and Sumbreen [714] Ahmad [715] Ahmad and Sumbreen [716] Ahmad [717] Ahmad and Sumbreen [718] Ahmad [719] Ahmad and Sumbreen [720] Ahmad [721] Ahmad and Sumbreen [722] Ahmad [723] Ahmad and Sumbreen [724] Ahmad [725] Ahmad and Sumbreen [726] Ahmad [727] Ahmad and Sumbreen [728] Ahmad [729] Ahmad and Sumbreen [730] Ahmad [731] Ahmad and Sumbreen [732] Ahmad [733] Ahmad and Sumbreen [734] Ahmad [735] Ahmad and Sumbreen [736] Ahmad [737] Ahmad and Sumbreen [738] Ahmad [739] Ahmad and Sumbreen [740] Ahmad [741] Ahmad and Sumbreen [742] Ahmad [743] Ahmad and Sumbreen [744] Ahmad [745] Ahmad and Sumbreen [746] Ahmad [747] Ahmad and Sumbreen [748] Ahmad [749] Ahmad and Sumbreen [750] Ahmad [751] Ahmad and Sumbreen [752] Ahmad [753] Ahmad and Sumbreen [754] Ahmad [755] Ahmad and Sumbreen [756] Ahmad [757] Ahmad and Sumbreen [758] Ahmad [759] Ahmad and Sumbreen [760] Ahmad [761] Ahmad and Sumbreen [762] Ahmad [763] Ahmad and Sumbreen [764] Ahmad [765] Ahmad and Sumbreen [766] Ahmad [767] Ahmad and Sumbreen [768] Ahmad [769] Ahmad and Sumbreen [770] Ahmad [771] Ahmad and Sumbreen [772] Ahmad [773] Ahmad and Sumbreen [774] Ahmad [775] Ahmad and Sumbreen [776] Ahmad [777] Ahmad and Sumbreen [778] Ahmad [779] Ahmad and Sumbreen [780] Ahmad [781] Ahmad and Sumbreen [782] Ahmad [783] Ahmad and Sumbreen [784] Ahmad [785] Ahmad and Sumbreen [786] Ahmad [787] Ahmad and Sumbreen [788] Ahmad [789] Ahmad and Sumbreen [790] Ahmad [791] Ahmad and Sumbreen [792] Ahmad [793] Ahmad and Sumbreen [794] Ahmad [795] Ahmad and Sumbreen [796] Ahmad [797] Ahmad and Sumbreen [798] Ahmad [799] Ahmad and Sumbreen [800] Ahmad [801] Ahmad and Sumbreen [802] Ahmad [803] Ahmad and Sumbreen [804] Ahmad [805] Ahmad and Sumbreen [806] Ahmad [807] Ahmad and Sumbreen [808] Ahmad [809] Ahmad and Sumbreen [810] Ahmad [811] Ahmad and Sumbreen [812] Ahmad [813] Ahmad and Sumbreen [814] Ahmad [815] Ahmad and Sumbreen [816] Ahmad [817] Ahmad and Sumbreen [818] Ahmad [819] Ahmad and Sumbreen [820] Ahmad [821] Ahmad and Sumbreen [822] Ahmad [823] Ahmad and Sumbreen [824] Ahmad [825] Ahmad and Sumbreen [826] Ahmad [827] Ahmad and Sumbreen [828] Ahmad [829] Ahmad and Sumbreen [830] Ahmad [831] Ahmad and Sumbreen [832] Ahmad [833] Ahmad and Sumbreen [834] Ahmad [835] Ahmad and Sumbreen [836] Ahmad [837] Ahmad and Sumbreen [838] Ahmad [839] Ahmad and Sumbreen [840] Ahmad [841] Ahmad and Sumbreen [842] Ahmad [843] Ahmad and Sumbreen [844] Ahmad [845] Ahmad and Sumbreen [846] Ahmad [847] Ahmad and Sumbreen [848] Ahmad [849] Ahmad and Sumbreen [850] Ahmad [851] Ahmad and Sumbreen [852] Ahmad [853] Ahmad and Sumbreen [854] Ahmad [855] Ahmad and Sumbreen [856] Ahmad [857] Ahmad and Sumbreen [858] Ahmad [859] Ahmad and Sumbreen [860] Ahmad [861] Ahmad and Sumbreen [862] Ahmad [863] Ahmad and Sumbreen [864] Ahmad [865] Ahmad and Sumbreen [866] Ahmad [867] Ahmad and Sumbreen [868] Ahmad [869] Ahmad and Sumbreen [870] Ahmad [871] Ahmad and Sumbreen [872] Ahmad [873] Ahmad and Sumbreen [874] Ahmad [875] Ahmad and Sumbreen [876] Ahmad [877] Ahmad and Sumbreen [878] Ahmad [879] Ahmad and Sumbreen [880] Ahmad [881] Ahmad and Sumbreen [882] Ahmad [883] Ahmad and Sumbreen [884] Ahmad [885] Ahmad and Sumbreen [886] Ahmad [887] Ahmad and Sumbreen [888] Ahmad [889] Ahmad and Sumbreen [890] Ahmad [891] Ahmad and Sumbreen [892] Ahmad [893] Ahmad and Sumbreen [894] Ahmad [895] Ahmad and Sumbreen [896] Ahmad [897] Ahmad and Sumbreen [898] Ahmad [899] Ahmad and Sumbreen [900] Ahmad [901] Ahmad and Sumbreen [902] Ahmad [903] Ahmad and Sumbreen [904] Ahmad [905] Ahmad and Sumbreen [906] Ahmad [907] Ahmad and Sumbreen [908] Ahmad [909] Ahmad and Sumbreen [910] Ahmad [911] Ahmad and Sumbreen [912] Ahmad [913] Ahmad and Sumbreen [914] Ahmad [915] Ahmad and Sumbreen [916] Ahmad [917] Ahmad and Sumbreen [918] Ahmad [919] Ahmad and Sumbreen [920] Ahmad [921] Ahmad and Sumbreen [922] Ahmad [923] Ahmad and Sumbreen [924] Ahmad [925] Ahmad and Sumbreen [926] Ahmad [927] Ahmad and Sumbreen [928] Ahmad [929] Ahmad and Sumbreen [930] Ahmad [931] Ahmad and Sumbreen [932] Ahmad [933] Ahmad and Sumbreen [934] Ahmad [935] Ahmad and Sumbreen [936] Ahmad [937] Ahmad and Sumbreen [938] Ahmad [939] Ahmad and Sumbreen [940] Ahmad [941] Ahmad and Sumbreen [942] Ahmad [943] Ahmad and Sumbreen [944] Ahmad [945] Ahmad and Sumbreen [946] Ahmad [947] Ahmad and Sumbreen [948] Ahmad [949] Ahmad and Sumbreen [950] Ahmad [951] Ahmad and Sumbreen [952] Ahmad [953] Ahmad and Sumbreen [954] Ahmad [955] Ahmad and Sumbreen [956] Ahmad [957] Ahmad and Sumbreen [958] Ahmad [959] Ahmad and Sumbreen [960] Ahmad [961] Ahmad and Sumbreen [962] Ahmad [963] Ahmad and Sumbreen [964] Ahmad [965] Ahmad and Sumbreen [966] Ahmad [967] Ahmad and Sumbreen [968] Ahmad [969] Ahmad and Sumbreen [970] Ahmad [971] Ahmad and Sumbreen [972] Ahmad [973] Ahmad and Sumbreen [974] Ahmad [975] Ahmad and Sumbreen [976] Ahmad [977] Ahmad and Sumbreen [978] Ahmad [979] Ahmad and Sumbreen [980] Ahmad [981] Ahmad and Sumbreen [982] Ahmad [983] Ahmad and Sumbreen [984] Ahmad [985] Ahmad and Sumbreen [986] Ahmad [987] Ahmad and Sumbreen [988] Ahmad [989] Ahmad and Sumbreen [990] Ahmad [991] Ahmad and Sumbreen [992] Ahmad [993] Ahmad and Sumbreen [994] Ahmad [995] Ahmad and Sumbreen [996] Ahmad [997] Ahmad and Sumbreen [998] Ahmad [999] Ahmad and Sumbreen [1000] Ahmad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee P
AURANGABAD. (M.S.)

ISSN: 0976-3031

Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 10, Issue, 11(G), pp. 36205-36207, November, 2019

International Journal of Recent Scientific Research

DOI: 10.24327/IJRSR

Research Article

ALLELOPATHIC EFFECT OF PLANT EXTRACT OF *ANNONA SQUAMOSA, MAMMORDICA CARANTIA* AND *ARGIMON MAXICANA* ON POST HARVEST FUNGI OF *PISUM SATIVUM* L.

Borude Devika[1] and Sumia Fatima[2]

[1]Dr. Babasaheb Ambedakar University Aurangabad
[2]Dept of Botany, Dr. Rafique Zakaria College of Women, Aurangabad

DOI: http://dx.doi.org/10.24327/ijrsr.2019.1011.4879

Dr. Rafiq Zakaria College for Women * Aurangabad *

ARTICLE INFO

Article History:

Received 4th August, 2019
Received in revised form 25th September, 2019
Accepted 18th October, 2019
Published online 28th November, 2019

Key Words:

Post-harvest fungi, *Annona squamosa, Mammordica carantia* and *Argimon maxicana*, Plant extracts.

ABSTRACT

Post-harvest fungi of pea pod were isolated, identified and grow in medium. Effect of 10% leaf and stem extracts was studied against growth of 05 post harvest fungi of pods of pea. Leaves extract of *Annona squamosa, Momordica charantia and Argemone mexicana* were used against the post-harvest fungi. These plants were found antifungal activity. *Argemone mexicana* plant part extract highly inhibitory. These plant extracts can be used to control growth of fungi of pea pod after harvest.

Copyright © Borude Devika and Sumia Fatima, 2019, this is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Importance of pea (*Pisum sativum*) pod is uses of young pods have a swollen, fibre-free and very sweet-flavoured seedpod which is eaten when immature. The mature seeds are rich in protein and can be cooked as a vegetable Medicinaly importance of pea seeds are contraceptive, fungistatic and spermacidal. The pea plays important role in soil fertility restoration as a suitable rotation crop that fixes atmospheric nitrogen. But mostly losses of pea pods during post-harvest and storage. This is due to fungal pathogens occurrence during poor harvesting, storage and insect infestation.

Shetty (1989) also studied *Alternaria padwickii*, another important seed borne pathogen of rice, was also inhibited by aqueous extract of *Strychnosnux-vomica*, garlic bulbs, ginger rhizome, basil leaves and fruits of A. indica. Tribhavanaamala and Narishan (1998) studied leaf extracts of *Delonix regia, Pongamiaglabra* and *A. silotica* signify cantly inhibit spore germination, mycelia growth and spore production of *A. helianthi, M. Phaseolina* and *F. solani* from sunflower seeds.

Ahmad and Prasad (1995) evaluated that post-infection treatment of sponge-gourd fruits with the extracts of *Azadirachta indica, Lantana camara, Murraya exotica, O. sanctum, Datura fastulosa* and *Catharanthus roseus* almost fully inhibited the spread of disease caused by *Helminthosporium spiciferum* and *F. sciepi.*

Biological control of plant disease, is safe and sustainable (Cook and Baker, 1982) Recently Alkhail (2005) showed that aqueous extracts of plants viz., *Allium sativum, Cymbopogon proximus, Carum carvi, Azadirachta indica and Eugenia caryophyllus* had strong antifungal activity against fungi viz., *Fusarium oxysporum.*

In the present study the antifungal activity of aqueous leaf and stem extracts of plants against post-harvest fungi pathogens of *Pisum sativum* was studied *Annona squamosa , Mammordica carantia* and *Argimon maxicana*

MATERIALS AND METHODS

Fresh and healthy plant parts leaves and stem of three allelopathic plant species *Annona squamosa, Momordica charantia* and *Argemone mexicana* were collected from the surrounding area. Leaves were washed thoroughly with distilled water to remove any dust. Washed plant part were used in the preparation of leaf extract.

Corresponding author:* **Borude Devika
Dr. Babasaheb Ambedakar University Aurangabad

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Pt.,
AURANGABAD. (M.S.)

International Journal of Applied Research 2019; 5(1): 170-173



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2019; 5(1): 170-173
www.allresearchjournal.com
Received: 21-11-2018
Accepted: 23-12-2018

Shaikh Faruk Karim
Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Dr. Sumia Fatima
Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Jadhav Reena Girdharilal
Govt. Ashram School and Junior College, Nawapada, Tal.-Sakri, Dist-Dhule, Maharashtra, India

Correspondence
Shaikh Faruk Karim
Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Ethnobotanical investigation of underground rhizome bearing plants at Paachmauli village: Green fragment of Kondaibari forest, Taluka Sakri, Dhule, Maharashtra

Dr. Rafiq Zakaria College for Women Aurangabad

Shaikh Faruk Karim, Dr. Sumia Fatima and Jadhav Reena Girdharilal

Abstract
Paachmauli is a green fragment of Kondaibari forest area situated in Taluka Sakri dist. Dhule. Paachi pandava hill is famous and surrounded by dense vegetation. Local farmers, villagers, Bhagats, Maharaj, Boharies, and Vaidus are well known to the ethnomedicinal properties of the plants of this area. Many ethnomedicinal plants practiced in this region. Health of the natives is depending upon practice of the local healers. Rainy season favors growth of many types of underground rhizome bearing plants. These rhizomes collected from the forest area for the ethnomedicinal uses. Five important underground plants are studied in the present paper for their ethnomedicinal uses.

Keywords: Paachmauli area, underground rhizomes, ethnomedicinal plants

1. Introduction
Kondaibari forest and its green fragments is located at the end of Saihyadri. Paach mauli is a very small village and one of the green fragments of Kondaibari forest. It contains dense vegetation. Large trees like *Tectona grandis, Syzygium cumini, Terminalia sp., Pongamia pinnata, Holorrhena pubescens, Azadirachta indica, Holoptelea integrifolia, Madhuca indica etc.* were abundant in this area. Plants have always been the source of medicines and have many uses to mankind [4]. Numerous waterfalls, large forest trees, trenches, and small lakes makes it beautiful. The name of Paachmauli indicates residence of five gods in the area. The hilly area called Paachipandava is famous. The five gods called Paachi pandava along with devi mata worshiped by villagers. Fair is held on the hill top yearly. This is the unique example where epic personalities from Mahabharata are worshiped by the tribal people. Kokani, Bhill, Gavit, Gaurbanjara Pardhi, Thelari, Manchi, were different ethnic groups [5]. Agricultural activities along with farming and fishing are seen on large scale in this area. Pinjarzadi is the nearby post office. Autorikshaw can get from Pinjarzadi to Paachmauli. On Sunday local weakly market held at Pinjarzadi, here local vegetables, fruits, grains, rice, household utilities, cloths, fishes, meet, and medicinal plant parts sold as per availability.



Fig 1: Name of Pachmauli area five gods

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women * Aurangabad *

Home > Aspergillus > Eurotiales > Aspergillaceae > Aspergillus niger

Article | PDF Available

Ecofriendly Biosynthesis of Silver Nanoparticles from Aspergillus niger van Tieghem

February 2019

Authors:

Priya Lokare
Loknete Ramrao Patil Dhumal Arts, Science and Commerce College, Pahur

Sumia Fatima
Dr. Rafiq Zakaria College for Women, Aurangabad 431001

Citations (1)

Abstract

Nanoparticles are the clusters of atoms, size ranging from 1-100nm. 1 nanometer is equal to the 10 -9 meter. For the isolation and preparation of pure culture of A. niger standered procedure of serial dilution were followed. The pure culture of A.niger were maintained on potato dextrose agar medium (PDA).For the preparation of biomass A. niger were allowed to grow in potato dextrose broth (PDB) liquid medium. After that biosynthesis of AgNPs was done with cell filtrate of A.niger and AgNO3 solution (10mM). The synthesized AgNPs were characterized by the ultraviolet visible spectrophotometer. In this process AgNPs were synthesized extracellularly by A.niger at room temperature. Such green nanoparticles can be used for the various practices includes food storage, as a medicine etc.

ResearchGate

Discover the world's research

- 20+ million members
- 135+ million publications
- 700+ million projects

Join for free

Sponsored video

THREE GOLDEN RULES OF SUCCESSFUL ITEM MARKETING

Public Full-text

Content uploaded by Priya Lokare Author content

Content may be subject to copyright.

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ResearchGate

Dr. Rafiq Zakaria College for Women * Aurangabad *

Article PDF Available

Studies on Pollen Biology of Jatropha integerrima Jacq. and Calliandra calothyrsus Meisn.

February 2019

Authors:

Priya Lokare
Lokmata Ramdas Patil Dhumal Arts, Science and Commerce College, Rahuri

Sumia Fatima
Dr. Rafiq Zakaria College for Women, Aurangabad 431001

Download full-text PDF | Read full-text | Download citation | Copy link

Abstract

The study of pollen it is called as a Palynology. Pollen is a fine course of powdery substance, comprising the male gametophyte of seed plants. Pollen grain is microscopic structures that vary in size and shape. Some are tiny, while others are egg- shaped though too small to see individually they can be seen by the naked eye in large quantities. Pollen biology is one of the most important and exciting area of plant reproductive biology and play an important role in crop improvement programs. Study of basic mechanism of reproductive biology of species is very important to understand how to maximize the yield and quality of seed produce to improve desired traits and to develop new varieties. These studies are also useful for to conservation, management and recovery of threatened species. More studies with the two species used in this work will help increase the chance of creating a hybrid of high oil content. Studies of pollen viability and fertility are important for breeding programs. Pollen germination studies are essential for the estimation of the quantity of the pollen grains required for controlled pollination. In present investigation different parameters like micrometry, pollen production, pollen/ovule ratio, pollen viability, in-vitro pollen germination of Jatropha integerrima and Calliandra calothyrsus studied. In this study, Calliandra calothyrsus showed the poor pollen production and in-vitro germination. Therefore it is necessary to do more efforts for pollen production and its in-vitro germination for that better medium composition is to be needed while in case of Jatropha integerrima showed less pollen viability hence a better breeding program is needed to introduce a good variety. In case of in-vitro germination Jatropha integerrima, showed good result in germination percentage and pollen tube length also. Hence for commercial use of Jatropha integerrima in-vitro culture could be done commercially.

ResearchGate
Discover the world's research
- 20+ million members
- 135+ million publications
- 700k+ research projects
Join for free

Public Full-text

Content uploaded by Priya Lokare Author content
Content may be subject to copyright.



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

ISSN : 2348-7143
February 2019
RESEARCH JOURNEY International Multidisciplinary E-Research Journal
Impact Factor (SJIF) - 6.261 | Special Issue 120 : Recent Developments in Life Sciences for Human Welfare

The effect of medicinal plant extracts against guava wilt pathogen

Dr. Sumia Fatima & Uzma Quadri
Department of Botany,
Pesticide and Plant Protection Research Lab,
Dr. Rafiq Zakaria College for Women Campus-2,
Dist. Aurangabad - 431001 (M.S.) India.

Abstract :

Guava wilt pathogen was isolated from soil of guava orchards and identified as *Fusarium solani* on the basis of its morphological and cultural characteristics. The resistance of this pathogen to the wide variety of chemicals has stimulated the search of new alternatives for control measures. Use of plants extract is one of the most promising, effective, safer and eco- friendly method to eradicate the pathogens from soil. The present paper aims at the study on efficacy of four plant extracts viz., *Eugenia caryophyllata* (Clove), *Moringa oleifera* (Sehjan), *Trachyspermum captivum* (Ajwain) and *Zingiber officinale* (Zinger) against *Fusarium solani* at 10%, 25% and 50% concentrations. Among all four plant extracts tested, *Eugenia caryophyllata* was found to be most effective against *Fusarium solani* on 3rd, 5th and 7th day at 50% concentration and conquered the colony growth by 100% compared to control followed by *Trachyspermum captivum* and *Moringa oleifera*, 3rdday (91.70% and 67.42%), 5th day (92.74% and 72.35%) and 7th day (94.35% and 78.04%) respectively. *Zingiber officinale* has shown least efficiency to suppress the colony growth of *Fusarium solani* on 3rd day (60.65%), 5th day (63.55%) and 7th day (73.50%) after inoculation at 10%, 25% and 50% concentration over control.

Key words : Guava, *Fusarium solani*, plant extract, wilt, management.

Introduction :

The pathogen *Fusarium solani* is a widely distributed soil inhibiting fungus that causes diseases in several economically important crops including guava. Guava is grown almost in all the states of India. Guava crop is severely affected by wilt disease leading to substantial loss in the crop production. *Fusarium solani* is found as the most predominant pathogen causing wilt of guava. Since long the workers are using different chemicals and synthetic compounds against fungal pathogens to control it. Unfortunately, these chemicals are not readily biodegradable; tend to persist for years in the environment and developed new physiological races of the pathogens (Ocamb *et al.*, 2007; Siripornvisal, 2010). This led to the urgent need for development of novel fungicides that are more effective, economically feasible and eco- friendly than the conventional fungicides. Therefore, there is need of alternative methods to control phyto-pathogens which are safer and environment friendly.

Antifungal compounds from plants origin are most suitable being less toxic and more environmentally compatible by nature. From past many years number of plants have been extracted and screened for their antifungal activities and valuable results have been achieved (El. Shami *et al.*, 1986; Bansal and Gupta, 2000; Bajwa *et al.*, 2004; Abdulrahman, 2005; Gupta *et al.*, 2009; Zaker and Mosallanejad, 2010; Shukla and Dwivedi, 2012). In this respect the present investigation was undertaken to evaluate the antifungal activity of locally available plant extracts viz., *Eugenia caryophyllata*, *Moringa oleifera*, *Trachyspermum captivum* and *Zingiber officinale* against *Fusarium solani* causing guava wilt.

Review of Literature :

The bioactivity of *Eugenia caryophyllata* attributed to eugenol, oleic acid and lipids (Hammer *et al.*,1999), whereas *Trachyspermum captivum* extracts contains thymal (39.1%), oleic acid (10.4%), linoleic acid (9.6%), α-terpinene (2.6%), palmitic acid (1.6%) and xylene (0.1%) (Nagalakshmi and Shankaracharya, 2000; Singh *et al.*, 2004). *Zingiber officinale* has been shown to have a range of medicinal benefits and contains gingerols, gingerdiol and shagelol as the main antifungal compound. (Ficker *et al.*, 2003) while *Moringa oleifera* attributed two main phytochemicals viz., pterygospermin and benzyl isocyanate which have strong antifungal and antimicrobial activity (Jed and Fahey, 2005).

Material And Methods :

Assessment of plant extracts

Antifungal activity of four plant extracts (Table 1) *viz.*, *Eugenia caryophyllata* (Flower bud), *Zingiber officinale* (Stem), *Trachyspermum captivum* (Dried fruits), *Moringa oleifera* (Fresh leaves) were evaluated by "Poisoned food technique" (Thapliyal, 1993) and (Bansal and Gupta, 2000) for their efficacy against *Fusarium solani* which was isolated from wilt affected soil of guava orchards. The collected plant parts of *Eugenia*

Dr. Rafiq Zakaria College for Women Campus-2, Aurangabad
Dr. Sumia Fatima
Prof & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad
Dr. Rafiq Zakaria College For Women
Navkhandwa Park,

RESEARCH JOURNEY International Multidisciplinary E-Research Journal ISSN : 2348-7143
Impact Factor (SJIF) - 6.261 | Special Issue 120 : Recent Developments in Life Sciences for Human Welfare February 2019

A brief analysis for fungal pathogen Sclerotium rolfsii diseases in Maharashtra.

Sumia Fatima & Uzma Quadri
Pesticide and Plant Protection Research Laboratory,
Dr. Rafiq Zakaria College for Women,
Aurangabad - 431001 (MS), India.

Abstract :

Vegetables contain a great variety of other phytochemical (bioactive non-nutrient plant compounds), some of which have been claimed to have antioxidant, antifungal, antiviral and anticarcinogenic properties. Many diseases and disorders can affect the vegetables during the growing season. Diseases have been devastating the vegetables in Maharashtra result in low yield and economic losses to the farmers. The most common diseases are by fungi, especially fungal pathogen *Sclerotium rolfsii*.

Key worlds : Fungal pathogen, Vegetables, *Sclerotium rolfsii*, and Soil born Pathogen.

Dr. Rafiq Zakaria College for Women * Aurangabad *

Introduction :

Vegetables are cheapest and richest sources of calories, natural vitamins, minerals, dietary fibre and are, therefore, name as "protected foods" which are essentials to tackle the problems of malnutrition and improve quality of life (Chaudhary and Dhaker 2009). Most of the largest producer of vegetables about (35 per cent to the worlds vegetable production), India is the second and followed by USA, Turkey & Japan (Kabir T.K., et al 2000). The vegetables are cultivated in India and on a large scale in the region of Maharashtra with part of Marathwada including Aurangabad.

This soil-born basidiomycete is very polyphagous. The *Sclerotium rolfsii* is a very common soil-borne fungus infecting a wide range of vegetables, ornamental and field crops. It's most active during warm, wet weather in tropical and subtropical regions. Among the vegetables, it affects are chilli, eggplant, tomato, various lettuces, melon, cucumber, watermelon, beans, artichokes, beets, carrots, cauliflower, celery, garlic, onion, radish, turnip, and sweet potato. The *S.rolfsii* will survive for on plant debris in the form of aggregate mycelium, but the primary inoculums are sclerotia; these structures are found in the soil or associated with plant debris. Their persistence is greater in the first few centimeters of soil rather than deeper. The fungus also remains on different organic substrates in its mycelia from in a saprophytic stage. The fungus cause rots of the lower stem root and crown. It can also cause rot of fruit in contact with soil.

The *Sclerotium rolfsii* is a highly polyphagous pathogen that can attack and persist on some 500 plants, cultivated or not, belonging to a hundred or so botanical families. Among the vegetables, it affects are chilli, eggplant, tomato, various lettuces, melon, cucumber, watermelon, beans, artichokes, beets, carrots, cauliflower, celery, garlic, onion, radish, turnip, and sweet potato. Many ornamental plants are also likely to host the narcissus, lily, zinnia and chrysanthemum. Peanuts are soybeans are important potential hosts in the area where they are in they are grown. It is also found on apple.

The infections caused by fungi are reported on vegetables. They affected the stem, root and fruits. Some of the diseases caused serious damage in the field as well as in the storage. Therefore these fungal diseases have been paid much attention to different diseases. In the following fungal diseases were observed and they are described with respect to the causal organism and symptoms. The vegetable crop is cultivated on large scale in the region of Maharashtra. The main objective of the present research work is to survey of fungal diseases, especially *Sclerotium rolfsii* fungal pathogen. The specific objective of this study is to identify the problems of the farmer and give a recommendation on how to solve those problems.

Materials and Methods :

A investigate of fungal diseases causing pathogen *Sclerotium rolfsii* was carried out.

Collection and Isolation :

The infected plant infected samples were collected in airtight pre-sterilized polythene bags. The infected sample was brought to the laboratory for isolation of fungi. The diseased parts were cut into small pieces of 2-3 mm diameter with some healthy parts. The samples were washed in running tap water and sterilized by mercuric chloride solution and washed thrice with water. Again rinsed with sterile water and blotted to dry on clean tissue paper. After drying, three aseptically placed into Petri dishes containing Potato dextrose agar medium. Then, the inoculated Petri dishes have been marked and incubated at a temperature of 25°C for five days. Fungal growth was observed on Petri plate fungi were subcultured and pure culture was made with a single spore method.

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

Printed by CRESCENT PUBLICATIONS

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhan Colony Park
AURANGABAD. (M.S.)

© 2020 IJRTI | Volume 5, Issue 1 | ISSN: 2456-3315

To study the effect of different humidity level on dry weight of *Fusarium oxysporium, Rhizoctonia solani* and *Alternaria solani*

Dr. Rafiq Zakaria College for Women Aurangabad

Sumia Fatima[1], Shafu khan[2], Kamble R.A[3]

[1]Department of Botany, Dr.Rafiq Zakaria College for women's Naukhanda Aurangaabd.431001
[2]Department of Botany, Milliya college of Art Scieence and Management Science Beed. 431122.
[3]Department of Botany, Shri Hawagi Swami College Udigr Dist.Latur

Abstract*: The seedlings of different vegetables were collected in sterilized polythene bags from different sites in Beed in the year 2018 from January 2018 to December 2018 for the study of effects of humidity on the growth of fungi, isolation of fungi from the vegetables and dry weight of fungi. The mycoflora was isolated by food poisoning technique on P.D.A. (Potato Dextrose Agar) medium. The pathogenecity was tested according to Koch's postulates. There was variation in the mycoflora according to the type of Vegetables. The common fungi were Fusarium *oxysporium, Rhizoctonia solani* and *Alternaria solani.* There was highly significant difference in the growth of *A. Solani, Fusarium oxysporium* and *Rhizoctina solani* at different humidity level maximum growth of these fungi was observed at 90% humidity that was Alternaria 105 mg Fusarium 131 mg and *Rhizoctonia* 151mg .Followed by 50 % , 30% and 05 % humidity and least growth was obtained at 30 % humidity was *Alternaria* 22 mg, *Fusarium* 35 mg and *Rhizoctonia* 22 mg. The result of study indicated that the growth of fungi was high at humidity 90 % and was least at 30 % humidity. Therefore humidity is most important environmental factor for regulate vegetative and reproductive activity of fungi in the present study on the influence of humidity the maximum growth was at 90 % humidity.

***Keywords*: Vegetables, fungal spore and humidity.**

Introduction

Vegetable is recognized as an essential diet with its nutritional and medicinal value, having full of sources of vitamins and minerals. India has securing the second positions in the world with total production of vegetables are more than 91million tons in the country.

Though the productivity of vegetable per unit area is very low, that means the vegetable in India are produce on small scale and raised with principles of intensive farming, which leads to disease infection specially fungal infection.

Vegetable's either raised directly or through transplanted seedling get infected by variety of biotic, and abiotic causes. Vegetable seedlings are suffered from number of diseases caused by species of fungi, bacteria, viruses and nematodes. Among this fungal pathogens play important role in reducing yield and quality in vegetable crops.

Each vegetable seedling may be susceptible to several species and due to multiple soils born pathogen which persistent in soil for long period's symptoms of the seedling disease complex appears as patches emergence during the four weeks following seedlings, or up to the four leaf stages. Seedlings diseased damage contain seeds decay that is seed fail to germinate and become soft and pulpy and pre-emergence damping- off i.e. seed germinate but the developing seedling decay and fail to emerge sometime seedling could turn to seedling blight, wire stem or post emergence damping-off and even seedling root rot occurs.

Methodology

The seedlings of different vegetables were collected in sterilized polythene bags from different sites beed in the year 2018 from January 2018 to December 2018 for the study of effects of humidity on the growth of fungi. The diseased vegetables were collected separately in polythene bags to avoid contamination. The symptoms were carefully noted; completely rotten vegetables were avoided for isolation as they contained mostly secondary pathogens. If vegetable were present on the infected portions, slides were prepared by scraping the diseased portions. Isolations were made from the juncture of healthy and diseased regions on the peel of the infected vegetables. The diseased tissues were surface sterilized with 90% ethyl alcohol and transferred aseptically to Potato dextrose agar medium [200g Potato, 15g Dextrose 15-20 g Agar-agar and 1000 ml of distilled water] slants. After 8 to 10 days the hyphal tips coming out of the infected tissues were transferred to fresh slants. The fungi were identified with the help of standard monographs. Effect of the growth of fungi on different humidity level was also noted.

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020

IJCSE International Journal of Computer Sciences and Engineering Open Access
Review Paper Vol.-7, Issue-9, Sept 2019 E-ISSN: 2347-2693

Compiler Basic Designing and Construction

Khan Uzma Khatoon

Dept. of Computer Science, Dr. Rafiq Zakaria College for Women, Aurangabad, India

Corresponding Author: rzcw.uzma@gmail.com, Tel.: +009762144906

DOI: https://doi.org/10.26438/ijcse/v7i9.193194 | Available online at www.ijcseonline.org

Accepted: 14/Sept/2019, Published: 30/Sept/2019

Abstract— Compiler construction may be a wide used software engineering exercise, and therefore this paper presents a compiler system for accommodative computing. The final result of this paper is to produce a knowledge concerning compiler design and its implementation. In order to develop effective compilation techniques, it is important to understand the common characteristics of the programs during compilation. Although this paper concentrates on the implementation of a compiler, an overview that builds upon the compiler is additionally bestowed.

Keywords— Lexer-Parser, Competence development, Compilation, Lexical analysis, Syntactic analysis reconfigurable hardware

I. INTRODUCTION

Computer programs area unit developed in a very programming language and specify categories of computing processes. This paper provides AN introduction to the new learning technique for compiler construction and planning, which aims at learning compiler design. Computers but, interpret sequences of directions, but not the program texts. Therefore, the program text has to be understood into an appropriate instruction sequence before it's processed by a pc. This paper is geared toward folks curious about new learning approaches for understanding basis in technology engineering. Compilers and in operation systems represent the fundamental interfaces between a technologist and therefore the machine. Basically, Compiler may be a program that converts high level programing language into low level programing language or is converts ASCII text file into computer code [1]. The core compiler reads a program delineate in a very high-level programming language. The compiler then analyses the program, partitions it into hardware and software, and then generates data paths for the reconfigurable hardware. It focuses on the essential relationships between languages and machines. Therefore, the relationships ease the inevitable transitions to new hardware and programming languages. In parallel, the code half is instrumented with functions for configuring and exchanging with the reconfigurable hardware[2]. The term compilation denotes the conversion of an algorithmic rule expressed in during an exceedingly in a very human-oriented language to an algorithmic rule expressed in an exceedingly hardware-oriented target language. Also take into account typical programs provide priority to data during which competence is versatile and labile and can't be reduced to an algorithmic rule. Programming languages are the tools accustomed construct formal descriptions consists of finite computations (algorithms), in which each computation further consists of operations that transform a given initial state into the final state. In the context of factual information that can consist have, for example, a definition, a theorem, a hypothesis, a rule, or an algorithm. We shall be troubled with the engineering of compilers.

II. LEXICAL

The lexical taken or structure is processed by the lexer and the phrase, syntax is processed by the parser. The lexical syntax is typically an everyday language, whose alphabet consists of the individual characters of the ASCII text file text. The phrase syntax is typically a context-free language, whose alphabet consists of the tokens produced by the lexer. In computing, lexical analysis is the process of converting a sequence of characters into a sequence of tokens, i.e. meaningful character strings [3]. A program or perform that performs lexical analysis is named a lexical analyzer, lexer, tokenizer, or scanner, though "scanner" is also used for the first stage of a lexer.

III. COMPUTER PROGRAMME

Within linguistics the term is employed to seek advice from the formal analysis by a pc of a sentence or different string of words into its constituents, resulting in a analyze tree

© 2019, IJCSE All Rights Reserved

Dr. Rafiq Zakaria College for Women Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

H.O.D.
Computer Science Department

2019-20

IJEE International Journal of Electronics Engineering (ISSN: 0973-7383
Volume 11 • Issue 1 pp. 380-385 Jan 2019-June 2019 www.csjournals.com

Principal component analysis to reduce youth suicidal crime rate with different causes

Siddiqui Bushra Zareen[1], Dr. Mukta Dhopeshwarkar[2]
Research Scholar[1], Research Guide[2]
Dr. Babasaheb Ambedkar Marathwada, University Aurangabad

Dr. Rafiq Zakaria College for Women Aurangabad

Abstract: This paper mainly deals with the causes of youth suicide crime by using Principal Component Analysis (PCA). PCA is a statistical approach used for reducing the number of variables in causes of suicide. In PCA, every cause in the training set is represented as a linear combination of weighted eigenvectors called eigenvalues. These eigenvectors are obtained from covariance matrix of a training data set. The weights are found out after selecting a set of most relevant Eigenvalues. Various test is performed by projecting a different causes onto the subspace spanned by the eigenvalues and then classification is done by measuring minimum Euclidean distance. A number of experiments were done to evaluate the youth suicide for different causes. In this thesis, we used a training database of youth suicide for different states with their causes with gender and agewise.
Keywords:- PCA, Eigenvector, Co-relation Metrics.

Introduction:-

Over the last decades or so, youth suicide has become a popular area of research in computer vision and one of the most successful applications of suicide analysis and understanding. Because of the nature of the problem, not only computer science researchers are interested in it, but neuroscientists and psychologists also. It is the general opinion that advances in computer vision research will provide useful insights to neuroscientists and psychologists into how human brain works, and vice versa [1]. Thegoalisto implement the system (model) for a particular cause of suicide and distinguish it from a various causes with different states and to find out due to which cause in that particular state the youth are committing suicide. It gives us efficient way to find the lower dimensional space. Further this can be extended to recognize the causes of a youth suicide and that causes which relates with emotional intelligence. There are different 26 causes responsible for youth suicide and with that 26 causes we have only worked on sentimental causes. Principal component analysis has been done which finds that in which state the youth suicidal rate is increasing due to which cause.

I. PROCESS

One of the simplest and most effective PCA approachesused in youth suicidal crime systems is the so-called eigenvector approach. This approach transforms different causes into a small set of essential characteristics, eigenvectors, which are the main componentsoftheinitialset. PCA is a statistical approach to find the principal features of a distributed data set based on the total variance.

Principal components method

In principal components analysis.first finds the set of orthogonal eigenvectors of the correlation or covariance matrix of the variables. The matrix of principal components is the product of the eigenvector matrix with the matrix of independent variables. The first principal component accounts for the largest percent of the total data variation. The second principal component accounts the second largest percent of the total data variation, and so on. The goal of principal components is to explain the maximum amount of variance with the fewest number of components.

Non-uniqueness of coefficients

The coefficients for the principal components are unique (except for a change in sign) if the eigenvalues are distinct and not zero. If an eigenvalue is repeated, then the "space spanned" by all the

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

H.O.D.
Computer Science Department
Dr. Rafiq Zakaria College for Women,
Navkhanda, Jubilee Park,
Aurangabad (M.S.)

IMPACT FACTOR – 5.61

2019-20.

ISSN 2349-5189

LangLit

An International Peer-Reviewed Open Access Journal

Latar (MS) India

AIPROAJ

20.

ANIA LOOMNA'S DISCOURSE ON THE CONSTRUCTION OF FEMALE SUBJECTIVITY

Dr. Rafiq Zakaria College for Women Aurangabad

DR. KHAN MAHLAQA AFZAL
Asst. Prof. in English
Dr. Rafiq Zakaria College for Women,
Aurangabad

ABSTRACT

The postcolonial reading of history and literary text draws attention to the profound and inescapable effects of colonization of literary production along with anthropological accounts, historical records, administrative and scientific writing. The emphasis in the postcolonial reading is on the idea of texuality for it argues that the colonial text contradicts its underlying assumptions such as civilization, justice, aesthetics, sensibility and gender etc. Post-colonial critics offer a re- reading of the authoritative colonial text and interrogate their underlying assumptions about culture and identity in the terms of textuality. On the other hand a gender construction of female subjectivity is central issue in contemporary theorist of post coloniality. A very lucid account of the women as colonized subject is at the centre of Ania Loomba's work, Colonialism/Post colonialism (1998).Loomba argues that in various kinds of 16th century representation such as pictures, atlases, poetry and travel writings, sexual and colonial relationships become analogous to each other, women and their bodies are described in terms of the promise and fear of the colonial land. The colonial representations of women are characterized by discursive focus on the savage, the mysterious and the fantastic other. For postcolonial women authors, this tradition of portraying the nation as a woman and their female characters as to some degree symbolic of the nation and its pre-colonial culture is problematic. 'The pressure to behave' in certain ways, to perform certain roles, is exerted on male and female characters alike in Nervous Conditions, the female characters in the novel were liked and expressed in term of an assault on the body, a condition which is internalized and becomes indistinguishable from the daily cycle of consumption, digestion and evolution. The double colonization to which women are subjected is also experienced as a rejection of the female body by men.

The postcolonial reading of history and literary text draws attention to the profound and inescapable effects of colonization of literary production along with anthropological accounts, historical records, administrative and scientific writing. The emphasis in the

PRINCIPAL
Dr. Rafiq Zakaria College For Women,
Maulana Azad Road, Rauza Park,
AURANGABAD. (M.S.)

2019-20

2019-20

ijindex

ISSN 2277 - 7539 (Print)

Impact Factor - 5.631 (SJIF)

Excel's International Journal of Social Science & Humanities

An International Peer Reviewed Journal

January - 2020
Vol. I No. 13

PRINCIPAL

EXCEL PUBLICATION HOUSE
AURANGABAD

Nikita Singh's *Every Time It Rains*: A Portrayal of Self-Identity through Struggles

Dr. Khan Mahlaqa Afzal

The present research paper attempts to evaluate Nikita Singh's novel '*Every Time It Rains*' and brings out the struggle of women characters for self-identity. Nikita Singhis one of the emerging faces of young Indian women writers who wrote eleven books, some of her famous novels are *Like A Love Song, After This Time, Every Time It Rains* and *The Promise*. She is considered as one of the bestselling authors in India. For her implausible work she received a Live Indian Young Achiever Award in 2013, she was also nominated for a First International Young Author Award held in UAE in April 2018. The present research paper deals with one of her famous novel *Every Time It Rains*.

Every Time It Rains is a thorough urban novel, depicting the two basic concern of today's youth i.e. love and to establish themselves successfully in this world of competition. This novel is sequel of*Like A Love Song*in which the story revolveas around Mahi. In *Every Time It Rains* the friend and co-owner of Mahi's business partnerLailais the protagonist. She is 28 years old, owner of the bakery outlets in New Delhi. Her daily struggle to establish herself in the fastest growing business of urban city was one of the main themes of the novel. As a young entrepreneur she wants success by tying up with one of the reputed national level franchise of coffee house. She is open to new challenges in her business but also the one who has set up some basic rules for the growth of her business. As any young metropolitan girl she is financially independent and very strong headed individual. LailaKapoor is strong but lonely, her past continuously over shadows her working enthusiasm. She is a child of single parents.Lailais very mature and patient as compared to her business partner and friend Maahi.Maahi is young enthusiastic girl, ready to take up new opportunities and new relationship. She is active in dating site and goes on blind dates. She is full of hope when it comes to love and new business ventures like any young person. Hence she is unable understand the stoic behavior of Laila on both. Laila strongly objects on going and finding date as well as expanding or introducing new things in her cookie and cake business. It'snot that she isn't ready for challenges, but her secret past holds her back. It was later revealedthat she had been in love and married at very young stage. But her husband dies in car accident.The scar of her past haunts her till she meets JD, JayeshDiwakar young professional yet hard core fan of old Hindi songs.He represents Roust House with whom Laila and Maahi eagerly wanted to collaborate. The chaos and restlessness of personal and professional life in the novel is something young generation can easily relate to. There are no huge challenges in the novel in front of characters. Like today's youth they have small challenges before them which they face with enthusiasm. The character of Maahi is very relatable; she is an independent woman who wants to live on her own away from parents. But still she carries values of her tradition. She and Laila together are the best supporter for each other.

Laila and Mahi are the perfect examples of young Indian women. They have passion for life for and their craft i.e. making cookies and cakes unique and different than other bakeries.Even the hassle of winning the contract of collaboration with Roast House was projected brilliantly by Nikita Singh. It's not about winning; it's about fighting for it. Though Mahi and Laila knew that there are only twenty percent chancesthat they will get a contract of the bakeries, but still they didn't give up their dream. The passion that they have for their profession makes them wonder

PRINCIPAL
Maulana Azad College For Women
Near Jubilee Park,
AURANGABAD. (M.S.)

2019-20

IMPACT FACTOR – 5.61

ISSN 2349-3429

LangLit

An International Peer-Reviewed Open Access Journal

50.

CHALLENGES TO WOMEN AT WORKPLACE

DR NILOFER SHAKIR
Asst. Professor and Head,
Department of English
Dr. Rafiq Zakaria College for Women,
Aurangabad

ABSTRACT

Women are an important workforce. Research, surveys and facts have proved that they are efficient and sincere in performing their household duties and also handling work responsibilities. The workplace is an important sphere of a woman's life. For a woman it means a world because it adds meaning to her existence. Since years women never got a chance to prove their qualities, strengths and skills. Work or job is a means of securing respect, dignity and identity. The workplace defines her, provides her opportunities of growth, progress, recognition and identity. It gives her a voice, confidence to handle different situations. It helps her to form a network with people and connect with them. But compared with men, a woman has to face more problems at home and consequently more challenges and problems at the workplace. Where the distribution of wages is concerned, it has been found that women are paid low wages though they put in an equal amount of work as men, especially in the private sector. This segregation in terms of income highlights the fact that discrimination has not ended, which is unjust and degrading for a woman. These assumptions of inferiority obstruct the goal of empowering women. It also throws light upon the nature of societies that deprive the nation of an important resource i.e. women. Together with men, they can make an important contribution in its progress and upliftment. Respecting their potential, being fair to them in all respects can surely liberate and empower them in the true sense.To overcome this challenge women can form a strong network and launch protests in support with others to fight this injustice. A little support and concern for women can not only lead to the formation of an egalitarian society but it can also expedite the growth and progress of the nation.

Women are an important workforce. Research, surveys and facts have proved that they are efficient and sincere in performing their household duties and also handling work responsibilities. The workplace is an important sphere of a woman's life. For a woman it means a world because it adds meaning to her existence. Since years women never got a chance to prove their qualities, strengths and skills. Work or job is a means of securing respect, dignity and identity. The workplace defines her, provides her opportunities of growth, progress, recognition and identity. It gives her a voice, confidence to handle different situations. It helps her to form a network with people and connect with them. But compared

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-20

GLOBAL RESEARCHER VIEW ISSN : 245
An International Peer Reviewed Journal of Social Sciences and Humanities

Reviving Gandhian values on celluloid

Dr. Nilofer Shakir • Assistant Professor and Head, Dept. of English, Rafiq Zakaria College for Women, Aurangabad

Dr. Rafiq Zakaria College for Women Aurangabad

Contemporary Bollywoodcinema showcases the past to educate the audience about India's rich and glorious history. Films are an important medium of social change as they strongly influence and define modes of human behavior. Hence films inspire,influence mass psychology and have a tremendous mass appeal.Indian Movies also address the social evils prevalent in the Indian society. Classic and historical films recreate the golden era on the silver screen enthralling the audience with their interplay of song, narrative, dialogue and craftsmanship.

Filmsdealing with India's freedom struggle have always been popular and enjoyed wide viewership. They have enchanted the viewers with tales of love, sacrifice, courage, honour, bravery and patriotism. Films like Mother India, Kranti, 1942 – A love Story, Lagaan, etc., come to mind in this context. Characters ofnational heroes like Mahatma Gandhi, Nehru, Ambedkar, Bhagat Singh and many others have figured in Bollywood movies.

Contemporary cinema also projects the disintegration of contemporary society and the corruption of moral values. Many films today are made with the didacticpurpose to restore the traditional Indian and cultural values. Through cinema an attempt is made to remind the present generation of the universal human values of love, compassion and integrity and their credibility in all times. A remarkable film by Rajkumar Hirani, Lage rahoMunna Bhaiis a fine example of this genre that uniquely blends the past and the present. The film projects life in the metropolitan city of Mumbai with its unique cultural mesh of gangsters and businessmen, of its typical colloquialism, and the trials and tribulations of the common people. Amidst all this is the character of Mahatma Gandhi whose moving apparition appears frequently throughout the film.

While many films have been made on Mahatma Gandhi, Lage rahoMunna Bhai is landmark in many ways in that it discusses the philosophy of the mahatma and its relevance for all times.What makes the film different from others is that it is not clichéd. There are no explicit references in black and white about Gandhi's life and work.But then the viewer gets to know all that the father of nation stood for, fought against and ultimately got killed for talking humanism. The film is more about the Gandhi's spirit than he in flesh and blood.

The film is a light comedy with fine touches of humour but it conveys the serious message of the power of truth conviction and nonviolence. Itshows the harrowing dimensions of materialistic and complex metropolitan life of Mumbai. The protagonist is Murli Prasad, alias Munna, a local goon and his associate,sarkit. Both of them workfor the rich businessmen, looking after their shady dealings andthus making alivingby cheating people, forcefully throwing out their tenants, and using force and violence as their modus operandi.However all this is portrayed in a very comic manner with the colloquial expressions of lead characters adding to the fun. In the beginning the film introduces the pretty radio jockey, Jhanvi, who enchants the listeners every morning with her beautiful voice and unique narrative style on local radio. Munna is a diehard fan of Jhanvi. The fun begins when there is an announcement on the radio of a quiz on Mahatma Gandhi and the one who answers all the questions correctly would get a chance to meet Jhanvi.

PRIN.
Dr. Rafiq Zakaria C... For Wom...
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Sarkit kidnaps a few history professors who tell the correct answers to Munnaduring the quiz and soon Munna meets his ladylove. Munna tells a lie and introduces himself to Jhanvi as a history professor and Jhanvi is impressed and invites him to deliver a lecture to the inmates of the Second Innings house. She lives there with her grandfather with quite a few other old men who have been abandoned by their children. Munna agrees and reads literature on Gandhi ceaselessly for three days and three nights.

And while reading about the philosopher in the library, he sees the apparition that introduces himself as Mohandas Karamchand Gandhi ton rustic Munna who had known Mahatma so far as the notewallahbapu for his imprint on Rs. 500 note.The apparition helps Munna answer all the queries of the old men successfully. When an old man questions him about a statue of Gandhi which is damaged by someone and seeks a solution, a confused Munna immediately recalls the Mahatma whose apparition again appears with a solution. Accordingly Munna tells the gathering that all his statues be demolished, let Gandhi's name be erased, all his photos be removed from the walls. The only place where the mahatma must reside is in the hearts. Perhaps it is the time the nation remembered this message instead of erecting his statues and hanging his photos in public places and offices. The film reminds us to revive Gandhian spirit in practice and not through a false show of respect.

This is the beginning of a new journey in Munna's life. Gandhi promises to help him whenever Munna needed him. The Mahatma teaches him the first lesson- to speak truth no matter how difficult it is. He advises him to tell the truth to Jhanvi that he is not a history professor but Munna does not act upon it immediately.

Gandhi's appearance is symbolic as it not only builds our faith in Gandhian values but also reminds us that his ideals and values can be appropriated in all times.Materialism has taken a huge toll especially on the moral values of cooperation. Munna lives a life of deceit, cheating and falsehood. But gradually he is transformed into a more compassionate, understanding and a gentle human being. The ideals of Munna and those preached by Gandhi stand in stark contrast, yet Munna gives in to the advice of the Mahatma.... His encounters with Gandhi introduce him to philosophy of the great leader as he constantly guides him and influences him to avert acts of violence and instead practice non-violence or ahimsa.

It goes without saying that the Western values have somewhat negatively influenced the present generation. Growing professionalism and materialism have also affected the institution of the family. The inmates of the 2nd Innings House is ample proof of the growing trend among youngsters to send their parents to old age homes when they need them most. In such a sorry state of affairs, Gandhi's faith in spiritualism and religious values can be revived. His principles of tolerance, forgiveness and simplicity can be a great lesson to contemporary generation to preserve these ethical teachings and apply them to day to day situations of life.Munna has always practiced violence and slaps Sarkit in anger but at the behest of Mahatma Gandhi humbly asks his forgiveness. This shows the power that the mahatma's ideals have on ordinary people and can help them in transforming their lives for the better.

Gandhi confronted the British with nonviolence and Satyagraha, the principles he learnt in course of his campaign against discrimination in South Africa. An inspired Munnais then shown to startacampaign against Lucky Singh who wants to give away the 2nd Innings house in dowry to his daughter. Lucky Singh packs of the inmates along with Jhanvi and Munna to an unknown destination in Goa and hiresgoons in their absence to vacate the house. Munna starts the Satyagraha campaign and promises Lucky that he will claim the house through nonviolence and fair means. Day in and day out Munna along with Jhanvi and the old men stage a peaceful protest infront of his house and sends flowers to Lucky to strike peace with him. In the meanwhile, he co-hosts a show with Jhanvi on radio and addresses people using Gandhigiri. This is the word that is coined byMunna which stands for the

2018-20

"RESEARCH JOURNEY" International E- Research Journal
Impact Factor - (SJIF) - 6.625 (2019),
Special Issue - 262 : Translation Studies
Peer Reviewed Journal
E-ISSN : 2348-7143
Magale 2021

Dr. Rafiq Zakaria College for Women
Aurangabad

Translating History through *'Baburnama'*

Dr. Nilofer Shaikh
Asst. Professor and Head,
Dr. Rafiq Zakaria College for Women,
Aurangabad.

The present paper is a humble attempt to review certain important events of Indian history through an interpretation of Baburnama, the classic autobiography of the great Mughal emperor, Zahiruddin Mohammad Babur (1483- 1530). Originally written in Turkish language by Babur, the autobiography was translated in English by eminent scholars. Amitav Ghosh , the great Indian contemporary writer studied the latest translation of the Baburnama written by Wheeler M. Thackston. His essay, Empire and Soul: A Review of The Baburnama, one from his collection of essays, entitled Imam and the Indian is based on the translation of the Baburnama by Thackston. The text assumes great significance as it gives us an insight into the personality of the first Mughal king, Babur. The study of the Baburnama and his keen interest in history helped Ghosh to highlight some important facts of Indian history- the facts which are never mentioned anywhere in historical records.

Through history, we know about the frequent invasions of Indian nation in the past. Foreign rulers came and established their political rule over India. The Aryans, the Mongols, the Mughals, the British etc. established their political rule and departed, leaving behind the imprints of their culture, art and political systems on this huge Indian nation – a nation populated by people of varied religious, linguistic, and racial backgrounds and spread across its vast geographical boundaries. If we look back upon the past, we have examples of people fighting with each other to establish their religious supremacy- especially the two major Indian communities of Hindus and the Muslims. But the hatred and bitterness between the two was never as strong as it is in contemporary times. There are many factors responsible for this. This rivalry between them intensified with India's independence and the end of British rule. The post-Partition India saw an eruption of a series of riots between the two communities. However many important events of historical significance do not find a mention in historical records. Individual tales of heroism and the mass suffering of certain religious and ethnic groups are often skipped by historians. Hence the history we study is only partially true as it based upon manipulated historical records.

These gaps in history have been of serious concern to contemporary creative writers like Amitav Ghosh, Salman Rushdie, Rohinton Mistry and many others who question official history and highlight its missing parts in their writings. They create a parallel history through fiction and lend justification to those historical events which are deliberately excluded from mainstream history by vested interests.

Our perceptions of historical personages are based on received history. So our views on the Mughal rulers are often coloured with scorn because the available historical records paint the Mughal kings and their dynasty in a negative light. However Ghosh's study of this classic text distorts our views and perceptions of Mughal rulers. The history preserved in the Baburnama contradicts received records. Ghosh points out that if the Indians knew the real historical facts which adorn the Baburnama, a great tragedy and massacre of thousands of innocent Indians could have been averted. The tragic event referred to is the demolition of the Babri Masjid in

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women * Aurangabad *

Ayodhya in 1992 and the carnage that later followed across the country. If the historical facts which the writer highlights through the essay were known to common Indians, the religious divide between Hindus and Muslims, the two major religious groups in India would not have intensified. And this religious rivalry has become a handy weapon for the Indian political parties especially the Sangh Parivar, to divide the two communities to strengthen their vote banks.

Ghosh's writings powerfully depict the manner in which history is ruthlessly tampered by power structures and cruel political regimes. He questions received history through his writings and points out the important missing links in the chain of history that would truly reveal the past and also help us in understanding the present. He hints at the distortion of history by vested interests. He discusses medieval history to comment on the important details that have been missed by historiography. He unfolds this missing dimension of history in his writings.

In the article "Empire and Soul", Ghosh highlights the inadequacy of Indian historical records. He points out the demolition of the Babri Masjid in Ayodhya in 1992 which he says was a shameful act. The mosque was named after Emperor Babur, who laid the foundation of Mughal Empire in India. Following the demolition, the country witnessed violence and bloodshed which led to the death of thousands of innocent people. There are evidences of the Vishwa Hindu Parishad, the RSS and the other outfits of the Sangh Parivar who provoked Hindu fanatics to demolish the mosque. The Kar Sevaks thronged the mosque on the morning of 6 December, 1992 and pulled it down. The mosque named after Babur is in fact a metaphor for the bond of love and understanding between the Hindus and Muslims. The Baburnama reveals this. The very name Babur calls to mind a history of peaceful coexistence and religious tolerance. This becomes known through an enumeration of the qualities of Babur by the scholars who have interpreted the Baburnama.

The classic autobiography of Babur provides very candid reflections of the great ruler. It reveals important details of Babur's life and portrays him as a ruler who like his ancestors was committed to secularism and tolerance. The autobiography reveals the medieval period and also tells us about Babur- the poet, intellectual, a brave leader and above all a highly secular and sensitive soul. The book establishes that Babur came from a long line of literary rulers. He belongs to the lineage of Timur Lang and Jengis Khan. And what is remarkable about Jenjis Khan was his cultural and social adaptability which came to be inherited by his descendants, including Babur.

This highlights the fact that Babur and in fact all the Mughal rulers who were the descendants of Babur like Humayun, Shahjahan, Akbar etc. practised religious tolerance, peace and respect for all religions and cultures. It must be noted that this important fact is very systematically defied by Indian historians. Babur was reluctantly pushed to South-eastern Afghanistan and India when he failed to hold onto Samarkand and lost it. He ruled India but he had his heart in Samarkand, which was established as a great centre of art and literature by his ancestor, Timur Lang and Babur greatly valued and held his lineage in high esteem. The translation of the memoirs of Babur helped Ghosh to reveal some of the important details of the personality of Babur. He explains Babur's motive of writing the Baburnama:

"I have simply written the truth. I do not intend by what I have written to compliment myself. ....I have reported every good and evil I have seen of father and brother and set down the actuality of every fault and virtue of relative and stranger".

PRINCIPAL
Dr. Rafiq Zaka...
Navkhan...
AURANGA...

2019-2020

DOI : 10.33451/florafauna.v26i1pp88-92
FLORA AND FAUNA
ISSN 2456 - 9364 (Online)
2020 Vol. 26 No. 1 PP 88-92
ISSN 0971 - 6920 (Print)

Preliminary survey on diseases of Mango (*Mangifera indica*) under nursery conditions

***Priya Lokare and Sumia Fatima[1]**

Department of Botany,
Arts, Science and Commerce College,
RAHURI-413705 (M.S.) INDIA
[1]Pesticides and Plant Protection Research Laboratory,
Dr. Rafiq Zakaria College for Women, AURANGABAD 431001 (M.S.) INDIA
*Corresponding Author
Email- priyalokare2@gmail.com

Received : 25.02.2020; ***Accepted*** : 22.04.2020

ABSTRACT

Mango saplings go through the many insect pests, fungal, bacterial diseases during nursery condition and these symptoms will persist till flowering and fruiting period and result in the huge economic losses. Majority mango saplings couldn't reach upto flowering and fruiting stage it dies in the nursery conditions. This is major threat to the nursery owners because mango saplings having great demand all over the year, therefore buyers refuse to purchase diseased saplings. In the recent years the disease becomes severe in nursery plants, on young leaves, symptoms appear as irregular black necrotic spots on both sides. Pathogen present on the infected leaves, twig and fallen leaves serves as the major source of infection and spreads by rain splashed conidia. Survey was carried out to know the prevalence of diseases in nursery conditions for that Sanket Nursery Wakadi, Taluka Rahta was selected. There were 4 varieties of mango found in Sanket Nursery that were, Keshar, Payari, Mallika and Ratna. During the survey various fungal and insect pest diseases were observed. Anthracnose symptoms caused by *Colletotrichum gloeosporioides*, little leaf notcher, coconut scale, mango gall midge, white mango scale, stem blight, powdery mildew, hairy caterpillar etc. were found in large scale.

Figure : 01 References : 06
KEY WORDS : *Colletotrichum gloeosporioides*, Coconut scale, Hairy caterpillar, *Mangifera indica*, Mango gall midge

Dr. Rafiq Zakaria College for Women
Aurangabad

Introduction

Mango (*Mangifera indica*) commonly called as king of fruits, is the most important tropical and subtropical fruit crop[5]. It belongs to the flowering plant family Anacardiaceae. It is indigenous to India hence called as *Mangifera indica* which shows its Indian origin. Among, anthracnose caused by *Colletotrichum gloeosporioides*, is one of the most serious diseases in all mango growing regions of the world[5]. The disease was first identified in India in 1924. In the recent years the disease becomes severe in nursery plants, on young leaves, symptoms appear as irregular black necrotic spots on both sides. Pathogen present on the infected leaves, twig and fallen leaves serves as the major source of infection and spreads by rain splashed conidia.

Mango plants highly infected by disease caused by fungi, bacteria, insect pests, viruses *etc*. Very high amount of infection by various fungi and insect pests was found in Sanket Nursery Wakadi, Rahta tehsil, Dist. Ahmednagar (M.S.). The area of nursery was 7 acre. There were 4 varieties of mango grown in this nursery viz. Keshar, Payari, Mallika, Ratna Hapus. All saplings were about 1, 2, 3 and 6 years old. All varieties were affected by anthracnose (Colletotrichum blight), insect pest, leaf eaters, white coloured growth of insect (wooly white patches), brown-black coloured seasame sized insects eggs observed on leaves, stem blight, little leaf notcher weevil (*Artipus floridanus*), shrinkage of leaves, wooly growth on leaves is caused by *Orugas peludas* commonly called as hairy caterpillar. Early stage larvae of hairy caterpillars have long whitish hairs growing from the flanks of the body, feed on the leaves of mango. The little leaf notcher is a species of broad nosed weevil in the beetle family Curculionidae as well as the coconut scale-*Aspidotus destructor* is also found on leaves. The insect feeds on plant sap from leaves stem and fruits causing yellowing tissue distortion and die back. Coconut scale is known to be dispersed by birds, bats and insects as well as wind. Other common names are bourbon scale, transparent scale[4]. The leaves infected by the insect pest *Procontarinia postula* is a major pest of mango and is found in all mango growing countries of the world.

Mango gall midges (*Procontarinia* spp.) are a range

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020 145

Available online on 30.07.2019 at http://jddtonline.info

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

© 2011-18, publisher and licensee JDDT, This is an Open Access article which permits unrestricted non-commercial use, provided the original work is properly cited



Open Access

Research Article

Pharmacognostic Study of Leaves of *Kigelia pinnata* (Lam) Benth

Sumia Fatima[1], *P.D.Lokare[2]

[1] Pesticides and Plant protection Research Laboratory, Dr. Rafiq Zakaria College for Women, Aurangabad-431001, Maharashtra, India.

[2] Department of Botany, Shri Sai Nirman Arts, Commerce and Science College, Shirdi-423 109, Maharashtra, India.

Dr. Rafiq Zakaria College for Women Aurangabad

ABSTRACT

The *Kigelia pinnata* (Lam) Benth is a species of the Bignoniaceae family commonly known as *Kigelia africana* is locally known as waghat phul. The adult sausage tree has spectabular fruits these can weigh several kilogram hence the tree English common name worshoom. Wherever the trees grows it is usually evergreen especially places where rainfall occurs throughout the year but deciduous in places of long dry season. *Kigelia pinnata* is renowned for its traditional application as anti-inflammatory, anti-diabetic, anti-oxidant, anti -microbial, and anti-cancer effects. It contains chemical constituent like kigenol, kigelinone7, kigenol12, iso-kigenolls. In the present work pharmacognostic studies are carried out to investigate its medicinal properties. The study consists of macroscopic character of the plant *Kigelia pinnata* physico-chemical parameters like total ash, acid insoluble ash, thin layer chromatography etc.

Keywords- *Kigelia pinnata*, pharmacognostic studies, total ash, acid insoluble ash, thin layer chromatography

Article Info: Received 08 June 2019; Review Completed 12 July 2019; Accepted 18 July 2019; Available online 30 July 2019

Cite this article as:

Fatima S, Lokare PD, Pharmacognostic Study of Leaves of *Kigelia pinnata* (Lam) Benth, Journal of Drug Delivery and Therapeutics. 2019; 9(4):594-597 http://dx.doi.org/10.22270/jddt.v9i4.3593

***Address for Correspondence:**

Sumia Fatima, Pesticides and Plant rotection Research Laboratory, Dr. Rafiq Zakaria College for Women, Aurangabad-431001, (M.S.) India.

INTRODUCTION:-

The tree grows usually evergreen in places where rainfall occurs throughout the year. It is reasonably large trees attaining 20 m in height and grows in moist places such as river banks. The trees bark is grey and flakes. The flowers are pendulous sprays of 5-12 flowers, petals are a deep velvety red with yellow veining on the outside. The cylindrical fruit is pendulous on a long fruit stalk; the fruit can grow up to 1m long and 20cm wide and rounded at the apex. The sausage tree can grow rapidly and mature in 4-5 years mature fruit can weight 12kg. In view to its bulky characteristically shaped fruit has a variety of traditional uses where it grows as an endemic species in different habitats (Haughton P J, Gabriel O A, Olubunmi A) as well as in India and the middle East where the trees have been cultivated (Willam carey, M.Rao N.V.,Kumar B.R,Mohan). *Kigelia pinnata* is also called as Balam kheera. Anti - inflammatory and analgesic activities of methanolic extract of kigelia pinnata (Saini S, Kaur H et al) .Much of the studies on the biological activity of *Kigelia pinnata* have been concentrated on its anti-microbial (Higgains CA, Bell T, Delbederi Z). The research interest is realeted to the traditional uses of fruit extract as remedies for sexually transmitted diaseses, dysentery, leprosy, miscellaneous microbial, parasitic infection (M Soothi JO, Mangombol) 1983). Pharmacological effects including anti-fungal, anti protozoal, hepatoprotective, anti-fertility, anti-diarrheal, anti -diabetic (Meideen S.V, Haughton P J, Binutu O A, Okogun) Olaleye MT, Rocha B T). Stem bark methanolic extract in a panel of human tumor cell lines including leucamia, lymphoma derived cells. By means of bioactivity guided fraction nation it has been found that the extract contains cytotoxic agents such as lapachol regarded as a potential anti-cancer drug (Norvibaratinal, Jackson). The extract of the leaves of *Kigelia pinnata* has been confirmed to possess anti-diarrhoeal activity (Akah 1996). The extract of root and bark is used for the treatmeot of cancer of Uterus (Msouthi, 1983). Especially it has a being effective against solar keratosis which may develop into skin cancer (Hutchings et al 1996). Thus seems some evidence that the extracts of the roots and stem bark *Kigelia pinnata* against gentio-urinary infection. The scale of a potential marketing opportunity is large with new ethnic ingredients in cosmetics so-called cosmeceuticals being launched into western market. Mature fruit is applied as a dressing on the treatment of wounds, abscess and ulcers. Infusion from the root and bark is taken to treat of pneumonia. Extract of the leaves is used for the backbone, anti- malarial. The bark is used to treat syphilis and gonorrhoea and used to treat ulcers and as purgative

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhandi, Jubilee Park,
AURANGABAD (M.S.)

Journal of Drug Delivery & Therapeutics

Rafiq Zakaria College for Women * Aurangabad

Pharmacognostic Study of Leaves of *Kigelia pinnata* (Lam) Benth

Sumia Fatima*, P.D.Lokare

ABSTRACT

Cite this article as

*Address for Correspondence:

INTRODUCTION

ISSN: 2250-1177 CODEN [USA]: JDDTAO

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Jubilee Park,
AURANGABAD. (M.S.)

ISSN: 0976-3031

Available Online at http://www.recentscientific.com

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 10, Issue, 11(G), pp. 36205-36207, November, 2019

International Journal of Recent Scientific Research

DOI: 10.24327/IJRSR

Research Article

ALLELOPATHIC EFFECT OF PLANT EXTRACT OF *ANNONA SQUAMOSA, MAMMORDICA CARANTIA* AND *ARGIMON MAXICANA* ON POST HARVEST FUNGI OF *PISUM SATIVUM L.*

Borude Devika[1] and Sumia Fatima[2]

[1]Dr. Babasaheb Ambedakar University Aurangabad
[2]Dept of Botany, Dr. Rafique Zakaria College of Women, Aurangabad

DOI: http://dx.doi.org/10.24327/ijrsr.2019.1011.4879

Rafiq Zakaria College for Women * '10 * Aurangabad

ARTICLE INFO

Article History:

Received 4th August, 2019
Received in revised form 25th September, 2019
Accepted 18th October, 2019
Published online 28th November, 2019

Key Words:

Post-harvest fungi, *Annona squamosa, Mammordica carantia* and *Argimon maxicana*, Plant extracts.

ABSTRACT

Post-harvest fungi of pea pod were isolated, identified and grow in medium. Effect of 10% leaf and stem extracts was studied against growth of 05 post harvest fungi of pods of pea. Leaves extract of *Annona squamosa, Momordica charantia and Argemone mexicana* were used against the post-harvest fungi. These plants were found antifungal activity. *Argemone mexicana* plant part extract highly inhibitory. These plant extracts can be used to control growth of fungi of pea pod after harvest.

Copyright © Borude Devika and Sumia Fatima, 2019, this is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

nportance of pea (*Pisum sativum*) pod is uses of young pods have a swollen, fibre-free and very sweet-flavoured seedpod which is eaten when immature. The mature seeds are rich in protein and can be cooked as a vegetable Medicinaly importance of pea seeds are contraceptive, fungistatic and spermacidal. The pea plays important role in soil fertility restoration as a suitable rotation crop that fixes atmospheric nitrogen. But mostly losses of pea pods during post-harvest and storage. This is due to fungal pathogens occurrence during poor harvesting, storage and insect infestation.

Shetty (1989) also studied *Alternaria padwickii*, another important seed borne pathogen of rice, was also inhibited by aqueous extract of *Strychnosnux-vomica*, garlic bulbs, ginger rhizome, basil leaves and fruits of A. indica. Trbiuhavanaamala and Narishan (1998) studied leaf extracts of *Delonix regia, Pongamiaglabra* and *A. nilotica* signify cantly inhibit spore germination, mycelia growth and spore production of *A. helianthi, M. Phaseolina* and *F. solani* from sunflower seeds.

Ahmad and Prasad (1995) evaluated that post-infection treatment of sponge-gourd fruits with the extracts of *Azadirachta indica, Lantana camara, Murraya exotica, O. sanctum, Datura fistulosa* and *Catharanthus roseus* almost fully inhibited the spread of disease caused by *Helminthosporium* spicifernm and *F. sciipi.*

Biological control of plant disease is safe and sustainable (Cook and Baker, 1982) Recently Alkhail (2005) showed that aqueous extracts of plants viz., *Allium sativum, Cymbopogon proxims, Carum carvi, Azadirachta indica and Eugenia caryophyllus* had strong antifungal activity against fungi viz., *Fusarium oxysporum*

In the present study the antifungal activity of aqueous leaf and stem extracts of plants against post-harvest fungi pathogens of *Pisum sativum* was studied *Annona squamosa , Mammordica carantia* and *Argimon maxicana*

MATERIALS AND METHODS

Fresh and healthy plant parts leaves and stem of three allelopathic plant species *Annona squamosa, Momordica charantia* and *Argemone mexicana* were collected from the surrounding area Leaves were washed thoroughly with distilled water to remove any dust. Washed plant part were used in the preparation of leaf extract.

*Corresponding author: **Borude Devika***
Dr. Babasaheb Ambedakar University Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

International Journal of Research in Pharmacy and Life Sciences

Journal Home Page: www.pharmaresearchlibrary.com/ijrpls



RESEARCH ARTICLE

Impact of environmental factors on growth and sporulation of fungi causing market diseases of fruits and vegetables

Sumia Fatima

Pesticides & Plant Protection Research Laboratory, Dr. Rafiq Zakaria College for Women, Aurangabad-431001, M.S. India

ABSTRACT

The environmental factors such as factor temperature, light and pH plays a very important role in growth and sporulation of fungi. The change in temperature light and pH directly affect the growth and sporulation of fungi. The optimum temperature of each type of fungus is different. At very low temperature several fungi get inhibited, even high temperature restricts the growth and development of fungus. The mycoflora requires optimum temperature for growth and sporulation. Most of the fungi of tropical region responsible for post harvest diseases of fruits and vegetables grow and sporulation takes place at temperatures from 25°C to 30°C. The highest growth of *Alternaria alternata, Aspergillus niger, Aspergillus flavus, Colletotrichum gloeosporoides* and *Penicillium islandium* was observed at 30°C. Optimum pH 6.5 to 7.5 sporulation was good seen in *Alternaria alternata, Aspergillus niger, Aspergillus flavus, Colletotrichum gloeosporoides* and *Penicillium islandium*. pH range 5 to 8 were found suitable to the growth of all the pathogen. Four different colours were selected to effect of different light on the growth and sporulation of pathogen.

Keywords: Environmental factors, growth of mycoflora

ARTICLE INFO

Corresponding Author
Sumia Fatima
Pesticides & Plant Protection Research Laboratory,
Dr. Rafiq Zakaria College for Women,
Aurangabad-431001, M.S. India.
MS-ID: IJRPLS4060

PAPER QR-CODE

ARTICLE HISTORY: **Received** 15 March 2019, **Accepted** 18 April 2019, **Available Online** 24 May 2019

Copyright© 2019 *Sumia Fatima. Production and hosting by Pharma Research Library. All rights reserved.*

This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

Citation: *Sumia Fatima.* Impact of environmental factors on growth and sporulation of fungi causing market diseases of fruits and vegetables. *Int. J. Res. Pharm. L. Sci.*, 2019, 7(1): 25-27.

CONTENTS

1. Introduction 25
2. Materials and Methods 26
3. Results and Discussion 26
5. References 27

1. Introduction

The environmental factors greatly affect the growth and sporulation of fungi causing post harvest diseases of fruits and vegetables. Depletion of physical factors directly impact on growth and sporulation of fungi lowering and high temperature fungal growth will be retarded but at optimum temperature stimulating fungal growth and sporulation. Similar results have been reported by several workers Rangaswami and Sambandam (1961) suggested the

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 8, Issue 12, 762-770. Research Article ISSN 2277- 7105

SYMPTOMS AS AN IDENTIFICATION KEY OF POST HARVEST DISEASES OF APPLE (*MALUS DOMESTICA*)

***Sumia Fatima**

Pesticides and Plant Rotection Research Laboratory Dr. Rafiq Zakaria College for Women, Aurangabad-431001, (M.S.) India.

Dr. Rafiq Zakaria College for Women * Aurangabad

Article Received on
22 August 2019,
Revised on 12 Sept. 2019,
Accepted on 02 Oct. 2019,
DOI: 10.20959/wjpr201912-15908

***Corresponding Author**
Sumia Fatima
Pesticides and Plant Rotection Research Laboratory Dr. Rafiq Zakaria College for Women, Aurangabad-431001, (M.S.) India.

ABSTRACT

Apple is highly delicious fruit which is very commonly grown in the countries of temperate regions of the world. The injured fruits get injured by saprophytic fungi which cases fruit rot disease during transportation. Sometimes, the pathogenic fungi remain inside fruit tissue and develop into rot of fruit during storage periods. Total 36 types of post harvest fungi which causes different types of symptoms that help as identification key of post harvest diseases of apple.

KEYWORDS: *Malus Domestica*, saprophytic fungi.

INTRODUCTION

In India apple growing areas are limited. The Himachal Pradesh, Simla, Kashmir are the main regions growing apple in large scale. It is the best source of energy, minerals, and vitamins. There are many varieties of apple occur in world. Patel, et, al. (1949) reported about 500 varieties of apple occur in the world. The important varieties of apple which occur in India are Golden delicious, Ambri, Lal Ambri, Maharaji, Red delicious, red June, king of pippins, starking delicious, Benonic, Irish, Peach and Sunehari.

MATERIAL AND METHOD

Collection of infected Apple

The Apple fruits were collected from different fruit store houses of different go downs of Aurangabad. The infected fruits of each type of infection collected in separate polythin bag and from the same lot 10 immature healthy fruits were collected in a sterile polythin bag and from the same lot 10 immature healthy Apples brought to the laboratory in another

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Rauza Bagh, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

2019-2020

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 8, Issue 12, 757-761. Research Article ISSN 2277- 7105

STUDY OF INCIDENCE OF TWO MAJOR POST HARVEST DISEASES OF STRAWBERRY (*FRAGARIA INDICA* L.) IN MARATHWADA

***Sumia Fatima**

Pesticides and Plant Protection Research Laboratory Dr. Rafiq Zakaria College for Women, Jubilee Park, Aurangabad-431001.

Dr. Rafiq Zakaria College for Women * Aurangabad

Article Received on
22 August 2019,
Revised on 12 Sept. 2019,
Accepted on 02 Oct. 2019,
DOI: 10.20959/wjpr201912-15883

***Corresponding Author**
Sumia Fatima
Pesticides and Plant Protection Research Laboratory Dr. Rafiq Zakaria College for Women, Jubilee Park, Aurangabad-431001.

ABSTRACT

The fruits of Strawberry (*Fragaria indica* L.) are highly perishable fruits due to their extreme tenderness, vulnerability to mechanical damage, high level of respiration and their susceptibility to fungal spoilage. It has noted that 53.4% strawberries were infected by *Fusarium oxysporum f.sp. fragariae*. The percentage of infected strawberries due to growth of *Rhizopus stolonifer* was 34% respectively. This indicates that these two post harvest fungi such as *Fusarium oxysporum f.sp. fragariae* and *Rhizopus stolonifer* were economically important fungi causing major losses of strawberries in Marathwada region.

KEYWORDS: Strawberry (*Fragaria indica* L.), two major post harvest diseases.

INTRODUCTION

The fruit is highly nutritious. It is the best source of minerals such as Phosphorous, Calcium, and Iron. It also consist of vitamin –C, niacin, carotene, thiamine, riboflavin, and crude fiber. It is very commonly cultivated in the tropical and subtropical regions of world. Major loss of harvested fruits is caused due to fungi. The diseases caused before harvest of fruits also responsible for degradation of quality and cost of fruits in market. Post – harvest loss of fruits may be due to susceptibly of fruits to the fungal growth, Bhaskara, et. al, 1998). The physiology and morphology of fruit is also responsible for susceptibility of fruit to diseases. The soft skinned fruits are more susceptible than tough skinned fruits. Sumia Fatima, et. al,

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Rafiq Zakaria College For Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2016-2020

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 8, Issue 12, 762-770. Research Article ISSN 2277– 7105

SYMPTOMS AS AN IDENTIFICATION KEY OF POST HARVEST DISEASES OF APPLE (*MALUS DOMESTICA*)

***Sumia Fatima**

Pesticides and Plant Rotection Research Laboratory Dr. Rafiq Zakaria College for Women, Aurangabad-431001, (M.S.) India.

Article Received on
22 August 2019,
Revised on 12 Sept. 2019,
Accepted on 02 Oct. 2019,
DOI: 10.20959/wjpr201912-15908

***Corresponding Author**
Sumia Fatima
Pesticides and Plant Rotection Research Laboratory Dr. Rafiq Zakaria College for Women, Aurangabad-431001, (M.S.) India.

ABSTRACT

Apple is highly delicious fruit which is very commonly grown in the countries of temperate regions of the world. The injured fruits get injured by saprophytic fungi which cases fruit rot disease during transportation. Sometimes, the pathogenic fungi remain inside fruit tissue and develop into rot of fruit during storage periods. Total 36 types of post harvest fungi which causes different types of symptoms that help as identification key of post harvest diseases of apple.

KEYWORDS: *Malus Domestica*, saprophytic fungi.

INTRODUCTION

In India apple growing areas are limited. The Himachal Pradesh, Simla, Kashmir are the main regions growing apple in large scale. It is the best source of energy, minerals, and vitamins. There are many varieties of apple occur in world. Patel, et, al. (1949) reported about 500 varieties of apple occur in the world. The important varieties of apple which occur in India are Golden delicious, Ambri, Lal Ambri, Maharaji, Red delicious, red June, king of pippins, starking delicious, Benonic, Irish, Peach and Sunehari.

MATERIAL AND METHOD

Collection of infected Apple

The Apple fruits were collected from different fruit store houses of different go downs of Aurangabad. The infected fruits of each type of infection collected in separate polythin bag and from the same lot 10 immature healthy fruits were collected in a sterile polythin bag and from the same lot 10 immature healthy Apples brought to the laboratory in an another

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020.

RESEARCHERID
THOMSON REUTERS

[Fatima* 6(9): September, 2019]

ISSN 2349-4506
Impact Factor: 3.799

Global Journal of Engineering Science and Research Management

SYMPTOMS AS AN IDENTIFICATION KEY FOR POST HARVEST DISEASES OF GUAVA

Sumia Fatima
* Dr. Rafiq Zakaria College for Women, Aurangabad. (M.S.) India

Dr. Rafiq Zakaria College for Women * Aurangabad

DOI: 10.5281/zenodo.3465888

KEYWORDS: Guava, post-harvest mycoflora, rot symptoms.

ABSTRACT

The guava fruits are attacked by several types of fungi, bacteria and other agents during storage period causing different types of disease symptoms. Especially the injured guavas are more susceptible to disease that gets infected by fungal forms. Injury occurs during transportation and storage periods. Over 25 to 30 per cent loss of fruits are caused by fungal diseases in transit and storage. The common fungal forms easily penetrate into injured fruits in godown during storage period. The mycoflora isolated from infected fruits of guava collected from fruit store houses was Alternaria, Aspergillus, Colletotrichum, and Curvularia. Fusarium, Monilia, Penicillium, Pestalotia, Phytopthora and Rhizopus as noted in table. Each post-harvest fungus causes a particular type of symptoms. Different types of symptoms caused by post-harvest fungi observed and noted in table.

INTRODUCTION

Guava is the richest source of phosphorous and is a very important fruit of India. It is native of Tropical America. There are reports of its cultivation in India since 17th century. Guava grows as a wide range of environment. It is cultivated for its fruits in all states of India. It is fruit tree which can grow in poorly drained soils, it do not require more fertilizers. There are some wild species of guava occur at various places in India, its fruits are edible but those are not cultivated at commercial state. There are different colours of fruit occur in cultivated guava, that depends on its variety. The important commercial verities of guava are strawberry guava, yellow fruited which is common in southern parts of India, Guinea guava has small sized fruits with whitish pulp. In the hills of South India a pineapple guava is extensively cultivated for its elongated fruits. Safeda is a famous name of a variety of guava which is extensively cultivated at Allahabad. It is smooth walled spherical shaped guava, Panwar, K. S. and N. L. Vyas (1974). The Hafsi is a variety which consists of red pulp. Other important varieties which are cultivated in India are Dharwar which is commonly grown at Karnataka state. Nasik variety is famous in Maharashtra and Dholka is also cultivated in large scale at commercial basis. The fruit is susceptible for most of the mycoflora. The pathogenic organisms cause a variety of symptoms in the infected fruit. The injured guava gets infected by fungal forms during transit am storage. The common fungal farms grow on injured fruits in go down during storage are *Alternaria, Aspergillus, Colletotrichum, Curvularia, Fusarium, Monilia, Penicillium, Pestalotia, Physopthora* and *Rhizopus* etc. Soft or pulpy fruits undergo a soft or wet rot because of the abundance of water in their tissue.

MATERIALS AND METHODS

The infected fruits of each type rot disease of guava collected from godowns of fruit market. From the same lot 10 immature healthy fruits were collected in a sterile polyethylene bag and brought to the laboratory. A separate polyethylene bag was used for each fruit and each type of fruits. One infected fruit in one bag. A separate bag was used even for healthy immature fruits Sumia Fatima & M.C.Mahajan (2002). The fungus responsible for post-harvest rot of guava fruit was isolated on PDA (Potato Dextrose Agar) medium. Before inoculation the infected fruit was surface sterilized with the help of 0.1% HgCl2 solution and then rinsed with the solution of sterile distilled water for 4-5 times. Then a small piece of infected region of fruit was removed with the help of sterile knife or needle and the piece was kept on PDA (Potato Dextrose Agar) medium amended plates in sterile condition. The inoculated petriplates were incubated at room temperature 25+-1 C°. The fungus growing from the inoculated infected piece was inoculated on PDA medium. To get pure culture of the fungus a single hypha was removed from the inoculated petriplate and inoculated on freshly prepared PDA medium amended petriplate. To find out the pathogenecity of the isolated fungus, a 4mm disc of growing colony was removed by sterile borer in sterile condition and inoculated on respective fruit. A set of 5 fruits was used to confirm pathogenecity. The

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Julbise Park,
AURANGABAD. (M.S.)

2019-20

VOLUME - VIII, ISSUE - II - APRIL - JUNE – 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

27. India and her Neighbours : Trends and Transformations in Foreign Policy

Dr. Rafiq Zakaria College for Women * Aurangabad

Dr.Tanmay A. Paithankar
Assistant Professor & Head, Dept. of Political Science, Dr. Rafiq Zakaria College for Women, Navkhanda, Jubilee Park, Aurangabad

Indian Prime Minister Narendra Modi's charismatic personality and determined push for India's economic development have made him immensely popular at home. Modi's foreign policy initiatives are driven as much by his government's domestic political strength as by India's rising concern over rapid expansion of China's economic clout and military might in Asia.

India's rise is taking place in the shadow of China's even more dramatic rise. China's assertive, and often aggressive, behavior has been viewed as a huge challenge for India because it opens up the likelihood of China dominating India's immediate neighborhood. By focusing a great deal of energy in the neighborhood, the Modi government is demonstrating that India has the capability to promote regional peace and economic integration. Rather than merely complaining about external intervention in South Asia, New Delhi is developing a regional strategy based on India's natural geographical advantages, economic complementarities, shared cultural heritage, and preeminent strategic position. Modi is perfectly aware that New Delhi's ability to deal with Washington and Beijing can be significantly enhanced if India achieves greater strategic confidence in South Asian geopolitics.

The "neighborhood first" policy is the striking feature of Modi government's diplomatic approach. In his government's strategic imagination, India's relations with neighboring countries must receive topmost priority. If India does not resolve its differences with its small neighbors, it will only pave the way for China to exert growing influence in the region.

Modi often projects himself as an innovative and decisive leader who could make things happen. True to his style, he began his term as prime minister with a diplomatic first by inviting the leaders from the South Asian subcontinent to attend his inauguration in May 2014. After his first two years in office, Modi had already traveled to almost all of India's neighbors in an attempt to establish India as a dominant regional power. His successful visits to South Asian

Dr. Tanmay A. Paithankar
Associate Professor & Head
Dept. of Political Science
Dr. Rafiq Zakaria College For Women
Jubilee Park, Aurangabad -431001.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

VOLUME - VIII, ISSUE - IV – OCTOBER - DECEMBER - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 6.399 (www.sjifactor.com)

14. Development and Local Democracy in India

Dr. Tanmay A. Paithankar
Head and Associate Professor, Department of Political Science
Dr. Rafiq Zakaria College for Women, Jubilee Park, Navkhanda, Aurangabad.

Abstract

This paper is an attempt to underscore the pattern of local Or grassroots democracy and governance in India and the role of Panhayati Raj Institutions (PRIs) inthedevelopment of rural areas. The paper is concerned with the evolutionary perspective of the Panchayati Raj as well as the role of Panchayati Raj in socio-economic growth, socio-political awareness of rural people and the role of local leadership for strengthening the roots of democracy in India. The 73rd amendment to the Indian Constitution (1992) unequivocally prescribes that the Panchayats should be institutions of self-government through which powers are devolved to the people as to the participation in the process of planning for economic development and social justice, and implementation of schemes and programmes for these purposes. To strengthen and enhance the efficiency of local governance, PRIs were structured and designed as three tier system. The bedrock of this pyramidal structure is the *gram sabha* (or village assembly), composed of all citizens eligible to vote, and so the foundation of grassroots democracy. Whatever the case, the grass roots level institutions are important instruments in the process of development to lower levels and these processes are accelerated as and when common people identify themselves as active partners. There are so many facets to the issue of grassroots governance and development in India and it is very important because of more than 65 percent of India's population is rural and its fate and future are determined by these PRIs.

Keywords: Panchayati Raj Democracy

Introduction

The local or grassroots governance is an important role in the process of democratic decentralization in the developing world. India has been a welfare state ever since after Independence and the primary objective of all governmental endeavors has been the welfare of its millions. Elimination of poverty, ignorance, diseases and inequality of opportunities and providing a better and higher quality of life were the basic premises upon which all the

Dr. Tanmay A. Paithankar
Associate Professor & Head
Dept. of Political Science
Dr. Rafiq Zakaria College For Women
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

VOLUME - VIII, ISSUE - I - NOVEMBER - APRIL - 2019-20
GALAXY LINK - ISSN 2319 - 8508 - IMPACT FACTOR - 6.571 (www.sjifactor.com)

20. India's Foreign Policy: Influence of History and Traditions

Dr. Tanmay A. Paithankar
Head and Associate Professor, Department of Political Science
Dr. Rafiq Zakaria College for Women, Jubilee Park, Navkhanda, Aurangabad.

Abstract

History and traditions have significant impact on tenets of India's foreign policy. Real events and learnings from Mahabharata linked to bunch of aspects of India's relations with external world. Similarly, teachings of Buddha have paramount impact on foreign policy of India. Kautilya's thinking and worldview have strongly impacted on India's strategy. And personality driven administration of Mughal and their ideas of religious and cultural pluralism manifested in India's engagement with nations.

Keywords : Foreign policy, India, History, Buddhism, Mahabharata, Mughal, Kautilya

Introduction

India's foreign policy after independence evolved to foster new relationship with colonial and ex-colonial countries. India uses morality as an idea to connect with the world. Morality as tenet of foreign policy reflects national interest of India. And India's adoption of non- alignment policy after the independence was to do away with power politics during the cold war. It manifested the India's historic roots of the Buddhism. The policy of non-alignment also reflects India's scepticism of foreign power. Similarly, India's support of 'Asian century' connected with the teachings of Buddhism which has Pan-Asian presence. And India's close political, security and economic ties with the East and Southeast Asian economies linked to political philosophy of Ashoka. Shared culture of Buddhism will enhance the tourism and people to people connectivity within Asia. Further, elements of Mahabharata significantly reflects India's engagement with the world. Advice of Krishna and resolute action by Arjuna linked to tenets of India's worldview. Similarly, Kautilya's ideas of strategic thinking and power politics has a very prominent place in India's engagement with nations even in twenty first century. Moreover, Gandhi's views on morality, non-violence, idealism are also important elements of foreign policy of India.

Dr. Tanmay A. Paithankar
Associate Professor & Head
Dept. of Political Science
Jubilee Park, Aurangabad -431001.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

VOLUME - VIII, ISSUE - 1 - SEPTEMBER - FEBRUARY - 2019-20
IDEAL - ISSN - 2319 - 359X - IMPACT FACTOR - 6.601 (www.sjifactor.com)

18. Banjara Community and Human Rights

Dr. Tanmay A. Paithankar
Head and Associate Professor, Department of Political Science,
Dr. Rafiq Zakaria College for Women, Jubilee Park, Navkhanda, Aurangabad.

Dr. Rafiq Zakaria College for Women * Aurangabad *

Abstract

Human rights are intrinsically linked to the livelihood and dignity of the individual. Everyone has entitled to the human rights and they are universal, inalienable and fundamental in nature. They can also be seen through the perspective of ethics or moral obligation of the society as a whole. Human rights play pivotal role in protecting the universal values such liberty, equality and fraternity and also important for the well-being of society especially from the people belonging the downtrodden section of the society. In this context, banjara community in India faces widespread discrimination and abuse from mainstream society. The banjara community residing and scattered in various states of India and often faces the problem of misrecognition or non-recognition. This also leads to their gross human rights violations. The women from banjara community often have no place in socio-economic decision making and witnesses the severe hardships like sexual abuse, malnutrition, discrimination and other issues. Therefore, gender sensitisation and their equal rights in the welfare of the community is indispensable for overall wellbeing of the community. The recent situation like Covid 19 pandemic shattered the livelihood of the people from the banjara community who are already suffered the lot of discrimination, exploitation from landlords and economic hardships. The effort at the governmental and non- governmental is essential for the welfare of the banjara community.

Keywords : Banjara, Human Rights, Nomadic tribes, Covid 19, Patriarchy

Introduction

The de-notified and nomadic tribes are among the most disadvantaged communities of India. The large section of nomadic tribes are classified under the Criminal Tribes Act 1871. The nomads in India suffered the widespread discrimination due to this colonial and barbaric act and denied them basic human rights and dignified life in the society. However, after the independence of India, government replaced this act by habitual offenders act in 1952. Then slowly these communities finding place in the mainstream section of the society and still facing

Dr. Tanmay A. Paithankar
Head, Dept. of Political Science
Dr. Rafiq Zakaria College For Women
Jubilee Park, Aurangabad-431001.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020

Impact factors: 1.230

Mehdi et al., IJPSR, 2019; Vol. 10(7): 3250-3256. E-ISSN: 0975-8232; P-ISSN: 2320-5148

IJPSR (2019), Volume 10, Issue 7 **(Research Article)**

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 18 October 2018; received in revised form, 02 April 2019; accepted, 30 May 2019; published 01 July 2019

Dr. Rafiq Zakaria College for Women Aurangabad

THERAPEUTIC EFFECT OF *TAMARINDUS INDICA* EXTRACTS ON THE PATHOGENESIS OF *ENTAMOEBA HISTOLYTICA IN-VIVO*

Mansour Abdulnabi H. Mebdi [*1], Gozif Mohammed N. Omar [2], Mazahar Farooqui [3] and Vidya Pradhan [3]

Dr. Rafiq Zakaria College for Women [1], Aurangabad - 431001, Maharashtra, India.
Department of Biochemistry [2], Dr. Babasaheb Ambedkar Marathwada University, Aurangabad - 431001, Maharashtra, India.

Keywords:

Entamoeba histolytica, *Tamarindus indica*, Histopathology, Toxicity, *In-vivo*

Correspondence to Author:
Mansour Abdulnabi H. Mebdi

Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, Maharashtra, India.

E-mail: mansourabdulnabi@gmail.com

ABSTRACT: *Entamoeba histolytic* is a protozoan parasite which causes amoebiasis, about 50 million people are affected yearly, and it caused more than 100,000 deaths per year. The study investigates the therapeutic effect of ethanolic and aqueous *Tamarindus indica* leaves extracts on infected rats with *Entamoeba histolytica*. Twenty-one *Ratus norvegicus* rats were infected with *Entamoeba histolytica* and divided into seven groups (three rats in each group). Groups (1, 2, and 3) were treated with aqueous *Tamarindus indica* extracts at doses 125, 250, and 500 mg/kg respectively for ten days. Groups (4, 5 and 6) were treated with ethanolic extract of *Tamarindus indica* at doses 125, 250, and 500 mg/kg respectively for ten days. Group (7) was left untreated as a positive control group. The results showed a significant decrease at $p \leq 0.05$ in the numbers of parasite cell from the second day of treatment in all the groups treated with aqueous as well as ethanolic extract. This decrease gradually continued during the days of treatment until it reached zero on the last day of treatment for the dose of 500 mg/kg for both aqueous and ethanol extract. Histopathological study showed that *Entamoeba histolytica* causes mucosal damage, inflammation and necrosis for colon, while ethanolic extract of *Tamarindus indica* at dose 500 mg/kg repairs the parasite damage in comparison with a range of positive and negative control groups. Extracts of *Tamarindus indica* leaves indicated neither any toxic effect nor mortality up to the 1000 mg/kg.

INTRODUCTION: Approximately 50 million of the world populations are infected by *E. histolytica* and the reach a prevalence of 50% of the general population and it causes more than 100,000 deaths annually [1]. Metronidazole is used for the treatment of *E. histolytica* infection; this drug is resisted by drug resistance from *E. histolytica*, [2] however, this drug has some unwanted side effects such as headaches, metallic taste, nausea, vomiting as well as neurotoxicity, this makes it unpleasant to be taken by patients [3].

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.10(7).3250-56

The article can be accessed online on www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.10(7).3250-56

E. histolytic has registered some levels of resistance to most of the medicines rendering them ineffective [4]. In addition to that, the effective and safer antiprotozoal agents are urgently required [3]. In developing countries, plants are considered as popular because their products are safe and widely available at low cost [5]. This necessitates a search for a safer and effective alternative against *E. histolytica*. This study was performed to evaluate the efficacy of *T. indica* extracts against *E. histolytica* in rats and the study of histological changes after 10 days of treatment.

MATERIALS AND METHODS:

Collection and Identification of Plant: The leaves of *T. indica* were collected from the campus of Dr. Rafiq Zakaria College for Women. This plant was authenticated by herbarium of the Botany Department, Azad College, University of Dr.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

© 2019 IJSRST | Volume 6 | Issue 6 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X
Themed Section: Science and Technolog
doi : 10.32628/IJSRST207450

IJSRST

Analysis of Various tea Samples

Uzma Parveen K. Shaikh*
Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India
*Correspondence author E-mail: upshaikh@gmail.com

Rafiq Zakaria College for Women * Aurangabad *

ABSTRACT

Tannins are water-soluble polyphenols that are present in many plant foods. The aim with this study was to give an overview on the amount of tannin present in various tea samples. A simple and accurate complexometric method is used to determine tannin. Most of the ingredients commonly found in tea samples do not interfere with the determination. Several tea samples were analysed for their tannin content in present study.

Keywords : Tea, Tannin, Polyphenolic Compounds, Calcium Tannate

I. INTRODUCTION

After water, tea is the most widely consumed beverage in the world. It has a cooling, slightly bitter, and astringent flavor that many people enjoy. Tea likely originated in China as a medicinal drink [1]. Tea beverage is prepared by pouring boiling water over processed tea leaves, of the tea plant, *Camellia sinensis* [2]. It was first introduced to Portuguese priests and merchants in China during the 16th century. Drinking tea became popular in Britain during the 17th century. The British introduced it to India, in order to compete with the Chinese monopoly on the product [3]. Tea is valued for its taste, aroma, health benefits, and form part of some cultural practices. Through the ages, tea consumption was associated with beneficial effects on human health. Most of the health-promoting effects of tea are attributed to its polyphenolic compounds and their antioxidant activity. Tannins play an important role and has wide applications. Tannins are water-soluble polyphenols that are present in many plant foods. Recent findings indicate that the major effect of tannins was not due to their inhibition on food consumption or digestion but rather the decreased efficiency in converting the absorbed nutrients to new body substances [4]. The anticarcinogenic and antimutagenic potentials of tannins may be related to their antioxidative property, which is important in protecting cellular oxidative damage, including lipid peroxidaton. The antimicrobial activities of tannins are well documented [5,6]. This study was conducted to estimate tannin content in commonly available tea samples in India.

II. METHODS AND MATERIAL

The data for the present work comprises all in all 05 samples out of which 4 samples are drawn from different brands of black tea available in India and one is green tea sample.(Sample-1:Red Label, Sample-2:Packed Local Brand, Sample-3:Assam tea, Sample-4: Loose Tea Powder, Sample-5: Lipton green tea.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Jubilee Park, Aurangabad

2019-2020

ejpmr, 2020,7(2), 217-224

SJIF Impact Factor 6.222

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

Review Article
ISSN 2394-3211
EJPMR

SYNTHETIC ADVANCES FOR DIVERSIFIED PYRAZOLES AND PIPERIDINES

Abdul Ahad[3], Zaheer Shaikh[2], Showkat Patel[3] and Maqdoom Farooqui*[4]

[1]Post Graduate and Research Center, Maulana Azad College, Aurangabad.
[2]Wockhardt Ltd. MIDC, Chilkalthana, Aurangabad (M.S.) India.
[3]Adarsh College, Omerga Dist., Osmanabad (M.S), India.
[4]Dr. Rafiq Zakaria College for Women, Aurangabad.

*Corresponding Author: Dr. Maqdoom Farooqui
Dr. Rafiq Zakaria College for Women, Aurangabad.

Dr. Rafiq Zakaria College for Women Aurangabad

Article Received on 02/12/2019 **Article Revised on 22/12/2019** **Article Accepted on 12/01/2020**

ABSTRACT
Substituted pyrazoles and pyridines are important classes of heterocyclic compounds established as privileged scaffolds. The article describes biological importance and synthetic developments of these heterocycles and provides useful information by giving instant references of previous works and their importance.

KEYWORDS:

INTRODUCTION

Pyridines

The tetrahydropyridine ring is a fundamental structural unit of many natural products[1], preclinical and clinically trail drugs[2] and a number of bioactive molecules.[3] Some of the molecules having piperidine scaffold are useful drugs in the world market.[4] The tetrahydropyridine (piperidine) motif display anti-inflammatory & anticonvulsant[5], antihypertensive[6] and antibacterial[7] properties. Moreover, a few of them found to be inhibitors for enzymes of farnesyl tranferase[8] or dihydroorate dehydrogase(DHODH)[9] and also useful in Parkinson's disease.[10] Some of the established drugs which constituents' piperdine frameworks are shown in **Fig: 1.**

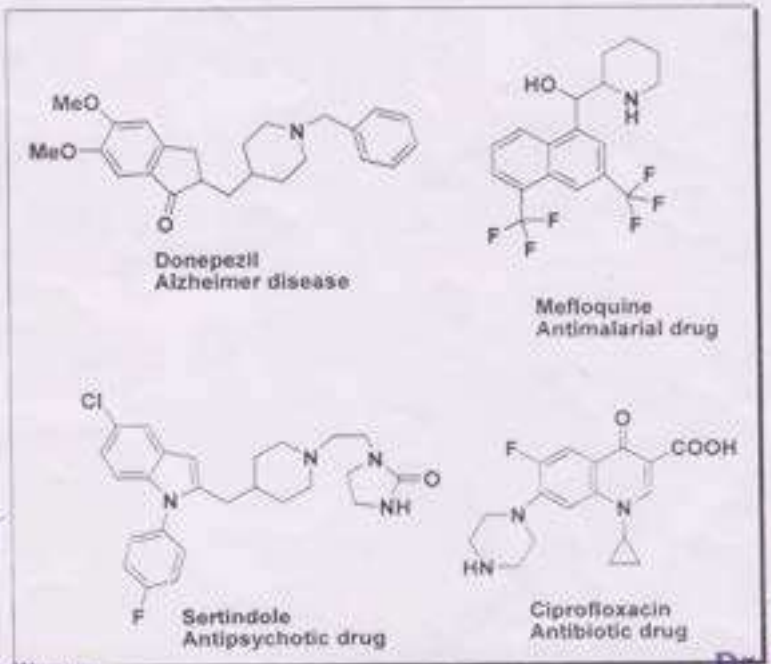


Fig. 1: Established drugs containing tetrahydropyridine moiety.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad.
Dept. of Chemistry

2019-2020

Dr. Rafiq Zakaria College for Women
Autonomous

Sphinx Scientific Communications
RESEARCH
www.sphinxsai.com

ChemTech

International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.13 No.01, pp 01-10, 2020

Development & Validation of HPLC method for simultaneous estimation of Drotaverine & Omeprazole

Zaheer Shaikh[1], Abdul Ahad[2], Showkat Patel[3] and Maqdoom Farooqui[4*]

[1]Wockhardt Ltd, MIDC, Chilkalthana, Aurangabad (M.S.) India.
[2]Post graduate and Research Centre, Maulana Azad College, Aurangabad (M.S), India.
[3]Adarsh College, Omerga. Dist, Osmanabad (M.S), India
[4*]Dr.Rafiq Zakaria College for Women, Aurangabad (M.S), India

Abstract : A simple and accurate method was developed for simultaneous estimation of Drotaverine & Omeprazole. The chromatography parameters includes stainless steel column Develosil ODS HG-5 RP C_{18}, 5µm, 15cmx4.6mm i.d and acetonitrile: potassium dihydrogen phosphate buffer (0.02M, pH 3.0) (55:45v/v) as mobile phase at a flow rate (1.0 ml/minute). The determinations were performed using UV-Vis detector set at 273 nm. The developed HPLC method showed specificity and selectivity with good precision and accuracy, which makes it very suitable for quantification of Drotaverine & Omeprazole.
Key words: HPLC, simultaneous estimation, Drotaverine ,Omeprazole.

Introduction

Pharmaceutical analysis [1-3] plays a very significant and vital role in the evaluation of pharmaceutical formulations and bulk drugs with respect to the assurance and quality control [1-3]. The improvements in analytical method developments and instruments have reduced the time and cost of analysis and enhanced precision and accuracy.[4]Drotaverine (DRO) is has IUPAC name 1-[(3,4-[diethoxyphenyl) methylene]-6,7-diethoxy-1,2,3,4-tetrahydroisoquinolene and used as an antispasmodic and smooth-muscle relaxant in pain related with biliary colic, and postsurgical spasms. [5,6]. It affects by inhibiting phosphodiesterase enzyme IV which is particular utilized for smooth muscles [7,8]. Omeprazole drug is a used as an antiulcer drug and also used against other acid-related diseases [9]. Omeprazole acts as the proton pump inhibitor which in the acidic PH of the stomach, reacts with a cysteine group in H+/K+-ATPase, thus impede the ability of the parietal cells to generate gastric acid (Tripathi, 2008) [10] . The present work describes a new precise, simple, rapid and accurate method for simultaneous estimation of drotaverine hydrochloride and omeprazole in combined dosage form.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Department of Chemistry
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

http://dx.doi.org/10.20902/IJCTR.2019.130101

2019-2020

Impact factors: 1.230

Mehdi et al., IJPSR, 2019; Vol. 10(7): 3250-3256. E-ISSN: 0975-8232; P-ISSN: 2320-5148

IJPSR (2019), Volume 10, Issue 7 (Research Article)

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 18 October 2018; received in revised form, 02 April 2019; accepted, 30 May 2019; published 01 July 2019

Dr. Rafiq Zakaria College for Women Aurangabad

THERAPEUTIC EFFECT OF *TAMARINDUS INDICA* EXTRACTS ON THE PATHOGENESIS OF *ENTAMOEBA HISTOLYTICA IN-VIVO*

Mansour Abdulnabi H. Mehdi *[1], Gozif Mohammed N. Omar [2], Mazahar Farooqui [1] and Vidya Pradhan [1]

Dr. Rafiq Zakaria College for Women [1], Aurangabad - 431001, Maharashtra, India.
Department of Biochemistry [2], Dr. Babasaheb Ambedkar Marathwada University, Aurangabad - 431001, Maharashtra, India.

Keywords:

Entamoeba histolytica, *Tamarindus indica*, Histopathology, Toxicity, *In-vivo*

Correspondence to Author:
Mansour Abdulnabi H. Mehdi

Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, Maharashtra, India.

E-mail: mansourabdulnabi@gmail.com

ABSTRACT: *Entamoeba histolytic* is a protozoan parasite which causes amoebiasis, about 50 million people are affected yearly, and it caused more than 100,000 deaths per year. The study investigates the therapeutic effect of ethanolic and aqueous *Tamarindus indica* leaves extracts on infected rats with *Entamoeba histolytica*. Twenty-one *Rattus norvegicus* rats were infected with *Entamoeba histolytica* and divided into seven groups (three rats in each group). Groups (1, 2, and 3) were treated with aqueous *Tamarindus indica* extracts at doses 125, 250, and 500 mg/kg respectively for ten days. Groups (4, 5 and 6) were treated with ethanolic extract of *Tamarindus indica* at doses 125, 250, and 500 mg/kg respectively for ten days. Group (7) was left untreated as a positive control group. The results showed a significant decrease at $p \leq 0.05$ in the numbers of parasite cell from the second day of treatment in all the groups treated with aqueous as well as ethanolic extract. This decrease gradually continued during the days of treatment until it reached zero on the last day of treatment for the dose of 500 mg/kg for both aqueous and ethanol extract. Histopathological study showed that *Entamoeba histolytica* causes mucosal damage, inflammation and necrosis for colon, while ethanolic extract of *Tamarindus indica* at dose 500 mg/kg repairs the parasite damage in comparison with a range of positive and negative control groups. Extracts of *Tamarindus indica* leaves indicated neither any toxic effect nor mortality up to the 1000 mg/kg.

INTRODUCTION: Approximately 50 million of the world populations are infected by *E. histolytica* and the reach a prevalence of 50% of the general population and it causes more than 100,000 deaths annually [1]. Metronidazole is used for the treatment of *E. histolytica* infection; this drug is resisted by drug resistance from *E. histolytica*, [2] however, this drug has some unwanted side effects such as headaches, metallic taste, nausea, vomiting as well as neurotoxicity, this makes it unpleasant to be taken by patients [3].

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.10(7).3250-56

The article can be accessed online on www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.10(7).3250-56

E. histolytic has registered some levels of resistance to most of the medicines rendering them ineffective [4]. In addition to that, the effective and safer antiprotozoal agents are urgently required [3]. In developing countries, plants are considered as popular because their products are safe and widely available at low cost [5]. This necessitates a search for a safer and effective alternative against *E. histolytica*. This study was performed to evaluate the efficacy of *T. indica* extracts against *E. histolytica* in rats and the study of histological changes after 10 days of treatment.

MATERIALS AND METHODS:

Collection and Identification of Plant: The leaves of *T. indica* were collected from the campus of Dr. Rafiq Zakaria College for Women. This plant was authenticated by herbarium of the Botany Department, Azad College, University of Dr.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad (M.S.)

2019-2020

Impact factors: 1.230

Mehdi et al., IJPSR, 2019; Vol. 10(7): 3250-3256. E-ISSN: 0975-8232; P-ISSN: 2320-5148

IJPSR (2019), Volume 10, Issue 7 **(Research Article)**

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 18 October 2018; received in revised form, 02 April 2019; accepted, 30 May 2019; published 01 July 2019

THERAPEUTIC EFFECT OF *TAMARINDUS INDICA* EXTRACTS ON THE PATHOGENESIS OF *ENTAMOEBA HISTOLYTICA IN-VIVO*

Mansour Abdulnabi H. Mehdi *[1], Gozif Mohammed N. Omar [2], Mazahar Farooqui [1] and Vidya Pradhan [1]

Dr. Rafiq Zakaria College for Women [1], Aurangabad - 431001, Maharashtra, India.
Department of Biochemistry [2], Dr. Babasaheb Ambedkar Marathwada University, Aurangabad - 431001, Maharashtra, India.

Keywords:

Entamoeba histolytica, *Tamarindus indica*, Histopathology, Toxicity, *In-vivo*

Correspondence to Author:
Mansour Abdulnabi H. Mehdi

Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, Maharashtra, India.

E-mail: mansourabdulnabi@gmail.com

ABSTRACT: *Entamoeba histolytic* is a protozoan parasite which causes amoebiasis, about 50 million people are affected yearly, and it caused more than 100,000 deaths per year. The study investigates the therapeutic effect of ethanolic and aqueous *Tamarindus indica* leaves extracts on infected rats with *Entamoeba histolytica*. Twenty-one *Rattus norvegicus* rats were infected with *Entamoeba histolytica* and divided into seven groups (three rats in each group). Groups (1, 2, and 3) were treated with aqueous *Tamarindus indica* extracts at doses 125, 250, and 500 mg/kg respectively for ten days. Groups (4, 5 and 6) were treated with ethanolic extract of *Tamarindus indica* at doses 125, 250, and 500 mg/kg respectively for ten days. Group (7) was left untreated as a positive control group. The results showed a significant decrease at $p \leq 0.05$ in the numbers of parasite cell from the second day of treatment in all the groups treated with aqueous as well as ethanolic extract. This decrease gradually continued during the days of treatment until it reached zero on the last day of treatment for the dose of 500 mg/kg for both aqueous and ethanol extract. Histopathological study showed that *Entamoeba histolytica* causes mucosal damage, inflammation and necrosis for colon, while ethanolic extract of *Tamarindus indica* at dose 500 mg/kg repairs the parasite damage in comparison with a range of positive and negative control groups. Extracts of *Tamarindus indica* leaves indicated neither any toxic effect nor mortality up to the 1000 mg/kg.

INTRODUCTION: Approximately 50 million of the world populations are infected by *E. histolytica* and the reach a prevalence of 50% of the general population and it causes more than 100,000 deaths annually [1]. Metronidazole is used for the treatment of *E. histolytica* infection; this drug is resisted by drug resistance from *E. histolytica*, [2] however, this drug has some unwanted side effects such as headaches, metallic taste, nausea, vomiting as well as neurotoxicity, this makes it unpleasant to be taken by patients [3].

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.10(7).3250-56

The article can be accessed online on www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.10(7).3250-56

E. histolytic has registered some levels of resistance to most of the medicines rendering them ineffective [4]. In addition to that, the effective and safer antiprotozoal agents are urgently required [3]. In developing countries, plants are considered as popular because their products are safe and widely available at low cost [5]. This necessitates a search for a safer and effective alternative against *E. histolytica*. This study was performed to evaluate the efficacy of *T. indica* extracts against *E. histolytica* in rats and the study of histological changes after 10 days of treatment.

MATERIALS AND METHODS:

Collection and Identification of Plant: The leaves of *T. indica* were collected from the campus of Dr. Rafiq Zakaria College for Women. This plant was authenticated by herbarium of the Botany Department, Azad College, University of Dr.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jalnee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Aurangabad (M.S.)

An Efficient One Pot Synthesis and Biological Screening of Some Pyrazole Salt Derivatives

ARCHANA D. JADHAV[1], PANKAJ U. BARHATE[1], AYESHA DURRANI[2]

[1]Department of Chemistry, Loknete Ramdas Patil Dhumal Arts, Science and Commerce College Rahuri, Ahmednagar, Maharashtra, India

[2]Department of Chemistry, Dr. Rafiq Zakaria College of Womens, Naukhanda, Aurangabad (M:S), Maharashtra, India

Abstract: Present work deals with the preparation of some Pyrazole derivative salts which was prepared by using different kinds of aldehydes and hydrazine derivatives by using alkoxide as a base and using the 1, 3- dicarbonyl compound like ethyl acetoacetate at room temperature. The reaction mixture was stirred on magnetic stirrer for about 10 to 20 minutes till colour change is observed and then product is separated by using organic solvents. The product obtained was converted to sodium salt of Pyrazole derivative by base hydrolysis. The entire synthesized compound was tested for their antibacterial activity against the Gram-positive and Gram-negative strains of bacteria. The investigation of antibacterial screening data revealed that most of the tested compounds showed moderate to good antibacterial and antifungal activity.

Key words: Hydrazine hydrate/ phenyl hydrazine hydrochloride, alkoxide, ethyl acetoacetate, etc.

Introduction:

Pyrazole is amongst the most important privileged scaffolds found in synthetic and natural products of medicinal interest. Pyrazole containing molecules possess a wide range of biological activities such asantibacterial, antifungal, antiviral, anticancer, antidiabetic, anti-inflammatory, estrogen receptor agonists, etc. Apart from their medicinal values, polysubstituted Pyrazole have been utilized for many other purposes too, such as ligands for cross coupling reactions and dyes. Considering the valuable potential of pyrazoles, numerous synthetic methods were developed over the past decades.

There are two classical methods for the synthesis of pyrazoles first is 1,3-dipolar cycloaddition reaction of diazo-compounds with alkynes and second one condensation reaction of 1,3-dicarbonyls with hydrazine's. Although these methods provide pyrazoles in acceptable yields, they suffer from their own limitations such as the use of hazardous transition metals and limited substrate scope, poor regioselectivity and time consuming. Therefore Pyrazole synthesis was investigated extensively and several improved synthetic routes were developed.

In recent years one pot three component synthesis has been taken a greater importance as it synthesize the most important pyrazole and its different kinds of derivative in just a single step. Number of scientist has been tried to synthesize the pyrazoles by this method using different kinds of acids and reagent catalysts the main challenge ahead them is that they fails to reduce the time required to complete the reaction. In recent experiment we have tried to decrease the reaction time required to complete the reaction for that purpose we had successfully driven our reaction, by Biginilli type of condensation in basic medium and those synthesized compounds were subjected to antibacterial and antifungal activity to compare their potentials.

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020

POLYCYCLIC AROMATIC COMPOUNDS
https://doi.org/10.1080/10406638.2019.1695637

Taylor & Francis
Taylor & Francis Group

Check for updates

An Efficient and Green Microwave-Assisted One Pot Synthesis of Imidazothiadiazoles in PEG-400 and Water

Dr. Rafiq Zakaria College for Women Aurangabad (M.S.) Library

Devendra S. Wagare[a], Ashwini Sonone[b], Mazahar Farooqui[b], and Ayesha Durrani[b]

[a]Department of Chemistry, Vivekanand College, Aurangabad, M.S, India; [b]Department of chemistry, Rafiq Zakaria College for Women, Aurangabad, M.S, India

ABSTRACT

Imidazothiadiazoles have attracted great deal of interest because of its several valuable diversified applications in the field of medicinal chemistry. Therefore, there is, requirement to design new environmentally benign protocol for the synthesis of benzo[d]imidazo[2,1-b]thiazoles. Herein, a simple, rapid, green and one-pot cascade process has been developed for synthesis of benzo[d]imidazo [2,1-b]thiazoles from the condensation of aromatic ketones, NBS (*N*-bromosuccinimide) and 5-(Biphenyl-4-yl)-1,3,4-thiadiazol-2-amine under microwave irradiation at 80–85 °C in PEG (polyethylene glycol)-400 and water as a green reaction medium. The product obtained in good to excellent yield (94-98%) in minimum reaction time.

ARTICLE HISTORY
Received 29 October 2018
Accepted 18 November 2019

KEYWORDS
Biphenylimidazo[2,1-b][1,3,4]thiadiazole; 5-(Biphenyl-4-yl)-1,3,4-thiadiazol 2-amine; PEG-400-water; microwave

1. Introduction

The bridgehead azaheterocycles, especially containing imidazole ring systems like imidazothiadiazoles show several valuable diversified pharmaceutical applications and have been attracted great deal of interest of the organic chemists since last many years because of their wide medicinal applications. Biphenylimidazo[2,1-b][1,3,4]thiadiazole derivatives show antitubercular,[1] antiulcer,[2] antibacterial activities.[3] Imidathiadiazoles also act as anticonvulsant, anxiolytic agents,[4] antiasthmatic,[5] antisecretory,[6] and antimicrobial agents. Among the important heterocyclic compounds, 1,3,4-thiadiazoles are one of the important structural fragments in medicinal chemistry show different biological activities, such as $^{+}Ca^{2+}$ channel blockers,[7] anti-inflammatory active agents,[8] antitubercular activity,[9] anti-infectious,[10] antibacterial,[11] antidepressants,[12] and anticancer agents.[13](Figure 1)

The broad spectrum anthelmintic agent such as **Tetramisole (1)** open the various routes for the synthesis of imidazo[2,1-b][1,3,4]thiadiazoles.[14] ***Levamisole* (2)** appears to be the most effective in patients with small tumor burdens and it acts by stimulating the responsiveness of lymphocytes to tumor antigens.[15] In recent years, microwave irradiation has emerged as a powerful and well controlled heating source for various organic reactions due to it reduces reaction times and increases the product yields.[16,17] Aqueous phase one-pot multicomponent reactions emerged as a powerful tool in organic synthesis, especially in green chemistry.[18,19] PEG-400 is nontoxic, easily available, inexpensive, nonionic liquid medium of low volatility, thermally stable, reusable medium use in green chemistry and also acts as a phase transfer catalyst.[20,21] Different number of methods have been reported for the synthesis of this important framework; the main part of the protocols involves initial coupling reactions between endocyclic nitrogen of 5-(Biphenyl-4-yl)-

CONTACT Ayesha Durrani dswagare@gmail.com Department of chemistry, Rafiq Zakaria College for Women, Aurangabad 431001 (M.S.), India.
Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/gpol.
© 2019 Taylor & Francis Group, LLC

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Rafiq Zakaria College For Women
Khanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ISSN 0036-0236, Russian Journal of Inorganic Chemistry, 2020, Vol. 65, No. 3, pp. 390–394. © Pleiades Publishing, Ltd., 2020

2019 - 2020
Dr. Rafiq Zakaria College for Women
Aurangabad

PHYSICAL METHODS OF INVESTIGATION

Potentiometric Studies of Binary and Ternary Complexes of Transition Metal Ions with Ceftriaxone Sodium and Esomeprazole

A. V. Sonone[a], M. Shaikh[a, *], M. Farooqui[b], and A. Durrani[a]

[a]Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India
[b]Maulana Azad college, Aurangabad, 431001 India
*e-mail: shkh_mujahed@rediffmail.com

Received August 19, 2019; revised October 9, 2019; accepted October 31, 2019

Abstract—The present paper deals with potentiometric study for formation of binary (1 : 1) and ternary (1 : 1 : 1) complexes of transition metals Ni(II), Cu(II), Co(II), and Zn(II) with Ceftriaxone Sodium and Esomeprazole in aqua-organic medium. The proton–ligand stability constant and metal–ligand stability constant has been calculated using Calvin–Bjerrum technique. The ionic strength has been maintained by 1.0 M $NaClO_4$ and ternary complexes have been calculated by Thomson–Lonas method to determine log K_{MXY} for all the ternary chelates.

Keywords: potentiometric titration, Ceftriaxone Sodium, Esomeprazole, binary, ternary

DOI: 10.1134/S0036023620030016X

INTRODUCTION

The biological system mainly based upon the coordination chemistry of metal ligand complexes; hence, the complexation of transition metal ions with biologically active ligand develops an increasing interest of researchers in a potential pharmaceutical and cosmetics [1–3]. Transition metals have vacant *d* orbital, smaller size, and coordination numbers, which enable them to form the complexes. The first transition series metal ions can be easily coordinated to nitrogen and oxygen atoms [4–6]. The determination of the stability constant is most important for the study of chelates [7]. Stability constant for the formation of metal complex are more important to understand the metabolism of drug substance in human body fluid and to develop new analytical methods and technological process for estimation of it [8]. In the present study pH-metry method used for the determination of stability constant of binary and ternary complexes in Ceftriaxone Sodium (L_1) and Esomeprazole (L_2), which are antibacterial drugs. Drugs have many functsonal groups, which are present in its skeleton, which binds to metal ions already present in the body [9, 10]. Metal complexes from drugs are to be more potent than drug itself [11].

$C_{18}H_{16}N_8Na_2O_7S_2 \cdot 5H_2O$ is the molecular formula of Rocephin, which is commonly known as Ceftriaxone Sodium (Fig. 1). Rocephin [12] is used to treat bacterial infection, such as middle ear infections, endocarditis, meningitis, pneumonia, bone and joint infections, intra-abdominal infections, skin infections, urinary tract infections, gonorrhea, and pelvic inflammatory disease. The bactericidal activity of ceftriaxone results from inhibition of cell wall synthesis. Ceftriaxone has a high degree of stability in the presence of beta-lactamases, both penicillinases and cephalosporinases has broad-spectrum activity of gram-negative and Gram-positive bacteria. Ceftriaxone Sodium is act as an antibiotic of third generation from cephalosporin family [13].

$C_{17}H_{19}N_3O_3S$ is the molecular formula for Nexium, commonly known as Esomeprazole (Fig. 2). It is (*s*)-(–)-enantiomer of Omeprazole and high value anti-ulcer drug, which reduces the gastric acid secretion and leads to, inhibits gastric acid secretion than Omeprazole. The treatment of Esomeprazole gives higher erosive esophagitis healing effect [14–16]. Recently there are fewer reports of studies of medicinally important compounds with different metal ions.

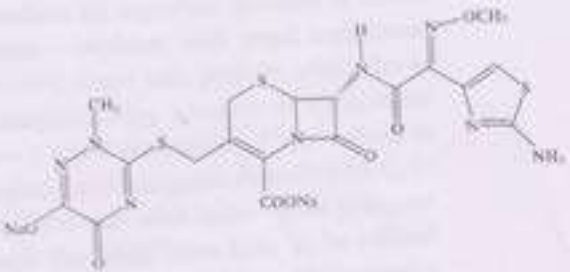


Fig. 1. Structural formula of ligand (L_1).

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda Campus,
AURANGABAD (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad (M.S.)

2019-2020

INTEGRATED FERROELECTRICS
2020, VOL. 205, 88–94
https://doi.org/10.1080/10584587.2019.1675003

Taylor & Francis
Taylor & Francis Group

Check for updates

Dr. Rafiq Zakaria College for Women Aurangabad

Potentiometric and Thermodynamic Studies of (*N*-[-(4-Chlorophenyl) Methylene]Nicotinohydrazide) and Its Transition Metal Complexes

Zamzam Taher Omar (Al-Ahdal), Shivaji Jadhav, and Megha Rai

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, MS, India

ABSTRACT

Pharmacologically active organic ligands (*N*-[-(4-chlorophenyl) methylene] nicotinohydrazide) synthesized through the condensation of equimolar mixture of anti-mycobacterial agent (nicotinohydrazide) with aromatic aldehyde. The reaction progress and purity of organic ligands were verified by thin layer chromatography. Formation of organic ligands was confirmed with the help of MP, IR, ^{1}H NMR, ^{13}C NMR and elemental analysis. Further formation of complexes of transition elements such as Mn(II), Co(II), Ni(II), Cu(II) and Zn(II) with organic ligand (Schiff base) *N*-[-(4-chlorophenyl)methylene] nicotinohydrazide were studied by the pH-metric technique at 25 °C, 35 °C and 45 °C in 70% (v/v)ethanol – water medium at 1 M ($NaClO_4$) ionic strength. The stability constants of these binary complexes were evaluated and order of stability constant found as Co (II) < Mn (II) < Ni (II) < Cu (II) < Zn (II). The thermodynamic parameters associated with the complexation reactions also were calculated. It is found that the change in enthalpy (ΔH) and change in Gibb's free energy (ΔG) were negative for all of the systems which suggested that all of the reactions were exothermic. The change in entropy (ΔS) found positive for most of the complexes which indicate in metal-ligand binding process is entropy favorable.

ARTICLE HISTORY
Received 1 October 2018
Accepted 16 September 2019

KEYWORDS
Binary complexation; *N*-[-(4-chlorophenyl) methylene] nicotinohydrazide; enthalpy; entropy; Gibb's free energy

1. Introduction

Schiff bases are now attracting the attention of medicinal chemist. Schiff base containing an amine group (–RC = N–) are commonly formed by the intensification of an initial amine with an active carbonyl [1]. Schiff bases perform an important function in coordination chemistry, because they easily form stable complexes with most transitional metal ions and in the field of coordination chemistry. Metal ions perform vital roles in biological processes [2]. Schiff bases and their complexes have a variety of applications in biological clinical and analytical fields and have a broad assortment of applications in different regions such as biological chemistry, organic, and inorganic chemistry [3,4]. In the field of coordination chemistry, metal ions perform vital roles in biological processes and the mineral complexes have been studied with the Schiff bases links to be utilized in the biological, clinical, analytical, and pharmacological fields [5]. Isoniazid becomes a

CONTACT Megha Rai dmegha08@gmail.com
Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/ginf.
© 2019 Taylor & Francis

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda , Aurangabad (M.S.)

2019-2020

SYNTHESIS AND BIOLOGICAL ACTIVITIES OF NEW TETRAHYDROQUINOLINE AND PYRIMIDINE DERIVATIVES

Pravin N. Chavan,[a] Dattatraya N. Pansare,[b] Shivaji L. Jadhav[c] and Megha J. Rai[d]*

Dr. Rafiq Zakaria College for Women

Keywords: Tetrahydroquinoline, pyrimidine, biological activity.

A series of new tetrahydroquinoline derivatives **(4a-j)** were prepared by one-pot multicomponent, [4+2] cycloaddition route from 4-aminonaphthalene, aromatic aldehydes and dihydrofurane (DHF) by using $InCl_3$ catalyst under reflux temperature and also, pyrimidine derivatives **(5a-n)** were prepared by the same route from benzimidazole, aromatic aldehydes and maleic anhydride by using piperidine catalyst under ultrasonic irradiations. The synthesized tetrahydroquinoline and pyrimidine derivatives were characterized (IR, ^{1}H NMR, ^{13}C NMR). The synthesized tetrahydroquinoline and pyrimidine derivatives have been evaluated for antimicrobial, anti-tuberculosis and anti-inflammatory activities.

* Corresponding Authors
Fax: +91 02140 250348
E-Mail: chemistryp141286@gmail.com
[a] Department of Chemistry, Doshi Vakil College, Goregaon, District-Raigad, (MS), India
[b] Department of Chemistry, Deogiri College, Station road Aurangabad, (MS), India
[c] Department of Chemistry, Taras College, Paithan, Aurangabad, (MS), India
[d] Department of Chemistry, Dr. Rafiq Zakaria College for Woman, Aurangabad, (MS), India

INTRODUCTION

Now a day, a huge number of a heterocyclic compound discovered through various eco-friendly methods like one-pot multicomponent reaction, ultrasonic irradiations technique or Diels-Alder reactions.[1-3] Tetrahydroquinoline and pyrimidine derivatives are broadly used in medicinal chemistry. They showed a huge number of important biological properties such as antimicrobial,[4-7] antimalarial,[8-10]analgesic,[11] anthelmintic,[12] antitumor,[13] anti-inflammatory,[14] antiviral[15-17]and anticancer[18] activity. Keeping the view of the biological importance of heterocyclic compounds,[19] we studied the biological activity of tetrahydroquinoline[20] pyrimidine,[21] thiazolone,[22] and benzenesulfonamide[23] derivatives.

EXPERIMENTAL

The starting materials and various solvents were commercially available (Sigma-Aldrich and Avra labs). Reaction courses were monitored by TLC on silica gel precoated F254 Merck plates. Developed plates were examined with UV lamps (254 nm). Melting points were recorded on SRS Optimelt, melting point apparatus and are uncorrected. IR spectra were recorded on an FT-IR (Bruker). ^{1}H NMR spectra were recorded on a 400 MHz Bruker spectrometer and were recorded in DMSO-d_6 solvent ^{13}C NMR spectra were recorded in DMSO-d_6 solvent on a 100 MHz Bruker spectrometer. Chemical shifts are reported as δ ppm units (TMS).

The following abbreviations are used; singlet (s), doublet (d), triplet (t), quartet (q), multiplet (m) and broad (bc). Mass spectra were taken with Micromass-QUATTRO-II of WATER mass spectrometer.

General procedure for synthesis of tetrahydroquinoline derivatives

In around bottom flask, 4-aminonaphthalene (0.1 mol), aromatic aldehyde (0.1 mol), dihydrofurane (DHF) (0.1 mol) and catalyst - $InCl_3$ (20 mol %) in EtOH as solvent (5 mL) were refluxed at for 7 h. The reaction condition was checked by employing TLC technique, using ethyl acetate: hexane (5:5) as solvents. After completing reaction, reaction mixture was cooled at room temperature. For crystallization, 10 mL methanol was added to the reaction mixture and then cooled at 22 °C, following stirring for 20 minutes. Products were filtered using G_4 sintered crucible. Products were recrystallized from ethyl alcohol.

11-(2,5-Dimethoxyphenyl)-2,3,3a,10,11,11a-hexahydrobenzo[*b*]furo[2,3-*c*]quinoline (4a)

Blackish grey crystal, m.p. 215-218 °C. FT-IR (KBr cm^{-1}): 3324 (-NH), 2910 (-CH), 1568 (-C=C- aromatic), 1210 (ether), ^{1}H NMR 400 MHz, DMSO-d_6) 9.96 (s, 1H, D_2O exchangeable -NH), 8.32-7.45 (m, 6H, Ar), 6.9-7.10 (m, 2H,Ar), 6.75 (s, 1H, Ar),4.8 (t, 1H, -CH), 4.38 (d, 1H, -CH), 3.77-3.85 (m, 2H, -CH_2), 3.8-(s, 6H, -CH_3), 2.43 (m, 1H, -CH), 1.1-1.7(m, 2H, CH_2). ^{13}C NMR (100 MHz, DMSO-d_6): 189.51, 156.24, 153.76, 151.34, 127.72, 125.26, 124.96, 112.90, 111.70, 111.34, 110.34, 104.37, 93.19, 78.0, 76.0, 56.10, 40.0, 38.0, Mass (m/z): [M+1]$^+$: 361.16

11-(4-Cyanophenyl)-2,3,3a,10,11,11a-hexahydrobenzo[*b*]furo[2,3-*c*]quinoline (4b)

Light yellow crystals, m.p 250-253 °C. FTIR (KBr cm^{-1}): 3372 (-NH), 2965 (-CH), 2183 (-CN), 1559 (-C=C- aromatic), 1215 (ether).^{1}H NMR 400 MHz, DMSO-d_6) δ 10.14 (s, 1H, D_2O exchangeable -NH), 8.33- 7.45(m, 6H,

Eur. Chem. Bull., 2019, 8(8), 257-264 DOI: http://dx.doi.org/10.17628/ecb.2019.8.257-264

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda , Aurangabad (M.S.)

2019-2020

Received: 14 August 2019 | Revised: 18 November 2019 | Accepted: 2 December 2019
DOI: 10.1002/jhet.3880

WILEY

ARTICLE

Ultrasound assisted, synthesis of *N*-(7-(R)-2-oxa-8-azabicyclo [4.2.0]octan-8-yl)isonicotinamide derivatives and their biological evaluation

Dr. Rafiq Zakaria College for Women Aurangabad

Pravin Chavan[1] | Amol Salve[1] | Shivaji Jadhav[2] | Dattatraya Pansare[3] | Megha Rai[4]

[1]Department of Chemistry, Doshi Vakil College, Goregaon-Raigad, India
[2]Department of Chemistry, Taral College, Paithan, Aurangabad, India
[3]Department of Chemistry, Deogiri College, Aurangabad, India
[4]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, India

Correspondence
Megha Rai, Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, India.
Email: chemistryp141286@gmail.com; drmeghars@gmail.com

Abstract

In this study, new series of azetidine derivatives were synthesized (**4a-n**) from isoniazide (**1**), Aromatic aldehydes (**2a-n**), dihydropyran (**3**) using $SnCl_2$ catalyst, via one pot multicomponent reaction/cycloaddition reaction. The synthesized azetidine derivatives were characterized by IR, ^1H NMR and ^{13}C NMR and have been screened for antimicrobial, antituberculosis and anti-inflammatory activities. In relation to *Staphylococcus aureus* (ATCC 25923) promising antibacterial activity was shown, compounds **4e** and **4k**, followed by compounds **4h**, **4n**, **4f**, **4g** and **4l**. The synthesized azetidine derivatives, **4a**, **4e**, **4j** and **4m** (with zone 12 mm) displayed antituberculosis activity. But its lower potential than, the standard streptomycin (with zone 18 mm). Further **4d** compound alone displayed similar activity.

1 | INTRODUCTION

Many microbial infection problems cause by surgeries such as accidental, organ transformation, and so forth.[1,2] Natural and synthetic heterocyclic drugs have been used against infection diseases. In the world, microbial and fungal are responsible (80%) for deaths.[3,4] Last few past decades, bacterial resistance to antimicrobial, antifungal and antituberculosis agents has become one of the most challenging difficulties in the infections treatments. TB is world oldest (*Mycobacterium tuberculosis*) infectious disease[5]; each year causes about 3 million deaths. Over the few past decades, researchers are continuous effort to fight against these kinds of diseases and various new chemotherapeutic drugs have been successively discovered.[6] Azetidine is a one of the chemotherapeutic agent, they possess a huge number of varieties of biological activities such as antibacterial, antifungal, antituberculosis, anti-inflammatory, antioxidant, antimalarial, antiviral, anticancer, anticardiovascular, and so forth.[7–23] Penicillin is one of the famous antibiotic drugs; it has strong antibiotic properties against *M. tuberculosis* bacteria (TB). But other major problem is route of synthesis, some of synthesis route cause environmental pollution such as water pollution, air pollution. These pollutions cause bacterial/viral infection diseases, however, we have used green synthetic route (one pot multicomponent reaction, cycloaddition reaction, ultrasonic irradiation) for synthesis of *N*-(7-(R)-2-oxa-8-azabicyclo[4.2.0]octan-8-yl)isonicotinamide derivatives (**4a-n**).[24] Synthesized derivatives of azetidine have been tested for antibacterial, antifungal, antituberculosis and anti-inflammatory activities.

2 | RESULT AND DISCUSSION

In our present work, we have synthesized *N*-(7-(R)-2-oxa-8-azabicyclo[4.2.0]octan-8-yl)isonicotinamide derivatives (**4a-n**) via one pot multicomponent (2 + 2) cycloaddition reaction from primary amines, different aromatic aldehydes and using stannous chloride catalyst (Scheme 1.

© 2020 Wiley Periodicals, Inc.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
Dr. Rafiq Zakaria College for Women
Dept. of Chemistry

Curr. Pharm. Res. **2019**, *407*, 58-65

Current Pharma Research
ISSN-2230-7842
CODEN-CPRUE6
www.jcpronline.in/

Dr. Rafiq Zakaria College for Women
Aurangabad

Research Article

Theme- New horizons in chemical sciences.
Guest Editor- R.P. Pawar

pH-metric Study of Metal-ligand Stability Constant of Transition Metal Complexes with Pharmacologically Active Ligand N-[(E)-(4-Hydroxy-3-methoxyphenyl)methylene] isonicotinohydrazide.

Zamzam Taher Omar (Al-Ahdal)[1], Shivaji L. Jadhav[2], D. D. Kayande[3], Megha J. Rai*[1]

[1]Dr. Rafiq Zakaria College for Women, Aurangabad-431001, Maharashtra, India.

[2]Tarai College Paithan, Aurangabad-431001, Maharashtra, India.

[3]S.B.E.S. College, Aurangabad-431001, Maharashtra, India.

Received 12 March 2019; received in revised form 07 August 2019; accepted 14 August 2019

***Corresponding author E-mail address:** *drmegha08@gmail.com*

ABSTRACT

The interaction of Mn (II), Co (II), Ni (II), Cu (II) and Zn (II) metal ions with organic ligand N-[(E)-(4-Hydroxy-3-methoxyphenyl) methylene] isonicotinohydrazide have been studied by pH-metric technique at 27±1°C in 70% (v/v) ethanol – water medium at 1M ($NaClO_4$) ionic strength. Organic ligand was synthesized by condensation of equimolar mixture of Anti-mycobacterial agent with aromatic aldehyde. The reaction progress and purity of organic ligands were confirmed by thin layer chromatography. Formation of organic ligands was confirmed with the help of MP, IR, ^1H NMR, ^{13}C NMR and elemental analysis. The stability constants of these binary complexes were evaluated and order of stability constant found as Cu (II) > Co (II) > Mn (II) > Ni (II) > Zn (II).

KEYWORDS

pH-metric technique, Binary complexation, N-[(E)-(4-Hydroxy-3-methoxyphenyl) methylene] isonicotinohydrazide, transition metals.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
HOD
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad (M.S.)

2019-2020

Chemistry & Biology Interface, 2019, 9, 1, 71-82

RESEARCH PAPER

ISSN: 2249 –4820

Dr. Rafiq Zakaria College for Women Aurangabad

CHEMISTRY & BIOLOGY INTERFACE

An official Journal of ISCB, Journal homepage: www.cbijournal.com

Tetrabutyl ammonium hydrogen sulphate (TBAHS) Catalyzed Convenient and Greener Synthesis of Tetrahydrobenzo[a]xanthene-11-ones

Furqan Diwan,[a] Mohammad Mohsin,[a]* Mohammad Shaikh,[b] Prasad Dixit,[c] Mazahar Farooqui[a]*

[a]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad- 431001, India.*
[b]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad-431001, India.*
[c]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad-431001, India.*
**Corresponding author. Tel: +919422214785*
*E-mail: * mazahar_64@rediffmail.com; diwanfurqan@rediffmail.com*
Received 2 Feburary 2019; Accepted 28 Feburary 2019

Abstract: A new efficient and green protocol was developed for the synthesis of Tetrahydrobenzo[*a*]xanthene-11-ones using Tetrabutyl ammonium hydrogen sulphate (TBAHS), as catalyst and water as a solvent under environmentally friendly conditions. The developed synthetic protocol represents a very simple and novel route for the synthesis of substituted Tetrahydrobenzo[*a*]xanthene-11-ones derivatives. the advantageous features of this methodology are environmentally friendly and operational simplicity, including excellent yields, shorter reaction time, mild reaction conditions and environmentally benign catalyst and solvent. Furthermore, analysis of the ADME parameters for synthesized compounds showed good drug like properties and can be developed as oral drug candidate.

Keywords: Tetrahydrobenzo[a]xanthene-11-ones; Tetrabutyl ammonium hydrogen sulphate (TBAHS); Water as a solvent; Green protocol; Operational simplicity.

Introduction

The present scenario of organic and green chemistry principles have encouraged the scientific community and researchers for the development of green and eco-friendly protocol for various organic transformation and motivated for the use of solid acid catalyst as an alternative to the conventional organic, mineral toxic and hazardous liquid acid catalyst like sulphuric acid, nitric acid, hydrochloric acid, methane sulphonic acid, trifluoroacetic acid likewise which cannot be use in stoichiometric amount. Whereas solid acid catalyst is economical industrially suitable and user-friendly owing their remarkable properties like negligible toxicity, easy availability, high stability and non-energy intensive methods for preparation and usage of the solid acid catalyst in the various organic transformation.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad (M.S.)

© 2019 IJSRST | Volume 6 | Issue 6 | Print ISSN: 2395-6011 | Online ISSN: 2395-602X
Themed Section: Science and Technolog
doi : 10.32628/IJSRST207450

IJSRST

Analysis of Various tea Samples

Uzma Parveen K. Shaikh*
Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India
*Correspondence author E-mail: upshaikh@gmail.com

ABSTRACT

Tannins are water-soluble polyphenols that are present in many plant foods. The aim with this study was to give an overview on the amount of tannin present in various tea samples. A simple and accurate complexometric method is used to determine tannin. Most of the ingredients commonly found in tea samples do not interfere with the determination. Several tea samples were analysed for their tannin content in present study.

Keywords : Tea, Tannin, Polyphenolic Compounds, Calcium Tannate

I. INTRODUCTION

After water, tea is the most widely consumed beverage in the world. It has a cooling, slightly bitter, and astringent flavor that many people enjoy. Tea likely originated in China as a medicinal drink [1]. Tea beverage is prepared by pouring boiling water over processed tea leaves, of the tea plant, *Camellia sinensis* [2]. It was first introduced to Portuguese priests and merchants in China during the 16th century. Drinking tea became popular in Britain during the 17th century. The British introduced it to India, in order to compete with the Chinese monopoly on the product [3]. Tea is valued for its taste, aroma, health benefits, and form part of some cultural practices. Through the ages, tea consumption was associated with beneficial effects on human health. Most of the health-promoting effects of tea are attributed to its polyphenolic compounds and their antioxidant activity. Tannins play an important role and has wide applications. Tannins are water-soluble polyphenols that are present in many plant foods. Recent findings indicate that the major effect of tannins was not due to their inhibition on food consumption or digestion but rather the decreased efficiency in converting the absorbed nutrients to new body substances [4]. The anticarcinogenic and antimutagenic potentials of tannins may be related to their antioxidative property, which is important in protecting cellular oxidative damage, including lipid peroxidaton. The antimicrobial activities of tannins are well documented [5,6]. This study was conducted to estimate tannin content in commonly available tea samples in India.

II. METHODS AND MATERIAL

The data for the present work comprises all in all 05 samples out of which 4 samples are drawn from different brands of black tea available in India and one is green tea sample.(Sample-1:Red Label, Sample-2:Packed Local Brand, Sample-3:Assam tea, Sample-4: Loose Tea Powder, Sample-5: Lipton green tea.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad

2019 - 2020

© 2020 IJRTI | Volume 5, Issue 1 | ISSN: 2456-3315

Fungitoxic Activity of *Sterculia foetida* L. against Some Plant Pathogenic Fungi

Dr. Baig Mumtaz

Dr. Rafiq Zakaria College for Women,
Aurangabad.(M.H)

***Abstract*: The extensive use of synthetic fungicides creates number of problems of pollution and toxicity. A modern trend to develop biofungicides has emerged recently. Sterculia foetida L. a well-known medicinal plant was screened for its fungi toxic activity against some plant pathogenic fungi by using methanol leaf extract. The extract seems to be more toxic against aspergillus niger and can be further investigated as potential biofungicide.**

***Keywords*: *Sterculia foetida* L., biocontrol, leaf extracts, pathogenic fungi.**

Introduction

The combat of man with fungi started from the dawn of agriculture as economic losses due to fungal disease are tremendous. The problem of pollution and toxicity of synthetic chemicals have provocated the search for herbal bio- fungicides. Various workers have screened number of angiospermic plant extracts for assay of fungi toxic activity (Verma et.al 1999. Singh and Singh, 2000 etal. 2000) and it is being done continuously.

Sterculia foetida L. is a common tree of Sterculiaceace occurring in many parts of India (Sharma and Sanjappa 1993) plant is useful in many respect its seeds are roasted and eaten like chestnuts, wood is used in making rough packages. The leaves are used as herbal medicine as aperient diuretic and insect repellent (Chopra atal 1992).

Pharmacological studies on leaves of this plant are conducted (Majumdar etal 2000). The Chemical examination of leaf extract reveals the presence of taraxerol , B- sitosterol n-octacosanol (Argeneyulu and Suryanarayan 1981). A Literature survey indicates lack of investigations on its fungi toxic activity. So the methanolic leaf extracts of this plant are tested against plant pathogenic fungi. Helminthosporium turcicum, Alternaria helianthi and saprophytic fungus Aspergillus niger.

A preliminary phytochemical investigation for presence of alkaloid also conducted.

Materials and methods:

The plant used in this study collected from Aurangabad city it was correctly identified botanically. The methanolic leaf extract was prepared by dissolving 10 gram of dried leaf powder in 100ml of 80% methanol. It was filtered and filtrate was used testing fungi toxic activity. Poisoned food technique was used to test the activity. The three fungi helminthosporium turcicum , Alternaria helianthi and Aspergillus niger obtained from pure cultures where inoculated in 250 ml conical flask in hundred ml. Glucose nitrate medium, 1 ml of methanolic leaf extract was added to each flask. Appropriate control was also maintained 4 replica of each treatment made. The flask where incubated at 37°C ± 1°C for 5 days. On 6th day the mycelial growth was filtered filter paper and the dry mycelial weight was determined. The leaf extract was also tested for presence of alkaloid by using Drangendrof reagent.

Result and Discussion:

The results of mycelial growth treatment of methanolic leaf extract of the test fungi are shown in table. No 2 The result shows that the methanolic leaf extract was considerable toxic to growth of all the three fungi but it was more toxic to Aspergillus niger seed borne fungus. The leaf extract has shown positive test for presence of alkaloid, which can be the cause of fungitoxicity. Further investigations are in progress to determine the potential of these plants as herbal bio fungicides.

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College
for Women, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Rafiq Zakaria College for Women * Aurangabad *

Table 1 : Effect of Fungal Inoculum (mixture Of Spore Suspension) on Seeds And Seedlings Of Jowar.

Fungal Inoculum	Dominant Fungus Appeared	Abnormalities Produced in				
		Seeds			Seedling	
		% germination	Rot	Discoloration	Shoot	Root Condition
Alternaria tenuis	A. flavus	30	+	Green	Chlorosis	Root rot
Aspergillus flavus	A. niger	40	+	Brown	Blight	Root rot and Root
Aspergillus niger	Penicillium	20		Yellow	Browning	Browning curling,
Penicillium chrysogenum	Rhizopus	20	+	Brown	Ashy	Browning
	A. flavus	10	+	Green	Tip rot	Root rot
Rhizopus nigricans	A. niger	30	+	Black	Browning	Reddish brown
Curvularia lunata	Curvularia	20		Black	Chlorosis	Root curling
Aspergillus flavus	Rhizopus	40	–	Brown		Root decay
Aspergillus niger	A. flavus	50	+	Grey	Tip rot	Root rot
Penicillium chrysogenum	Drechslera	10		Black	Browning	
	Penicillium	30	+	Green	Whitening	Browning
Rhizopus nigricans	Rhizopus	30		Brown	Chlorosis	Root rot
Drechslera longirostrata	Fusarium	20	+	Green	Tip rot	Root proliferation
	Fusarium	30	+	Brown	Browning	Root rot
Aspergillus flavus	Fusarium	10	+	Grey	Chlorosis	No effect
Aspergillus niger	Fusarium	40	–	Grey	Chlorosis	Root rot
Penicillium chrysogenum						
Rhizopus nigricans						
Fusarium moniliforme						
Aspergillus flavus						
Aspergillus niger						
Penicillium chrysogenum						
Rhizopus nigricans						

Table 2.: Effect of methanolic leaf Extract on growth of some fungi

Sr. No	Name of Fungi	Average Dry mycelial Weight in milligrams after 5 days	
		Control	Treatment
1.	Alternaria helianthi	20.0	13.0
2.	Helminthosporium sp	30.0	19.0
3.	Aspergillus niger	60.0	41.0

References:

Anjaneya A.S.R. Suryanarayana Murthy v. (1981). Two rare tetra methyl esters of quercetin from Sterculia foetida l. Indian Journal Chem 20 B: - PP - 87 – 88.

Chopra .R.N ., Nayar S.L and Chopra (1992). Glossary of Indian medicinal plants CSIR, Publications New Delhi PP - 234.

Mujumdar A.M Naik D.G Waghole R.J ., kulkarni D .K and M.S kumbhojkar (2000) Pharmacological studies sterculia foetida leaves, Pharm., Bio, Volume - 38 number.1 PP - 12 -17

O h k .B chang L. M. Hwang k. J and W. Mar.(2000). Detection of antifungal activity in Portulaca oleracea by single-cell bioassay system. Phytotherapy research 14 (5) P 329-332

Sharma B.D., Sanjappa M.(Eds). Flora of India volume- III Botanical Survey of India Calcutta.PP-459-462

Singh I and VP Singh 2000. Antifungal properties of aqueous and organic solution extract of seed plants against Aspergillus flavus and Aspergillus niger. Phyto morphology volume 50 (2)151-157.

Verma S P., Kanhaiya R.S Upadhyay R .R. (2000). Antifungal activity of some Euphorbiaceous plants Indian Journal phytopathology volume 16 (1 and 2) PP - 62 - 63

Dr. Baig Mumtaz

Dr. Rafiq Zakaria College for Women Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

International Journal of Scientific Research in Biological Sciences

Research Paper

Vol.6, Issue.5, pp.71-75, October (2019)

E-ISSN: 2347-7520

Impact of heavy metal, cadmium (II) on glycogen content of the freshwater bivalve, *Lamellidens marginalis* in monsoon season

Shaikh Yasmeen*

Dr. Rafiq Zakaria College for Women, Navkhanda Palace, Jubilee Park, Aurangabad (M. S.), India

*Corresponding Author: shaikhyasmeen7862@gmail.com Tel.: +918149907211

Available online at: www.isroset.org

Received: 01/Oct/2019, Accepted: 15/Oct/2019, Online: 31/Oct/2019

***Abstract*—** Aquatic environment gets polluted by heavy metals because of their environmental persistence and ability to bioaccumulate in aquatic organisms. Cadmium is a ubiquitous toxic heavy metal, biologically non-essential element, it is not biodegradable and has a very long biological half-life. The aim of the present study was to assess the glycogen content in different body parts i.e. Mantle, gill, gonad, hepatopancreas, siphon, foot, anterior adductor muscle and posterior adductor muscle of freshwater bivalvemolluscs *Lamellidens marginalis* exposed to lethal concentrations of cadmium chloride after 96 hrs acute toxicity of exposure. The results clearly showed In LC0 group compared with control group the content significantly increased from gill (67.62% P<0.01) followed by hepatopancreas (51.89% P<0.01) and gonad (21.14% P<0.01) and Decreased significantly from siphon (47.87% P<0.01), Anterior adductor muscle (42.73% P<0.01), posterior adductor muscle (40.33% P<0.01), mantle (4.24% P<0.01) and foot (3.28% P<0.01).In LC50 group compared with control content showed increase significantly from mantle (41.08% P<0.01) and Decreased significantly from foot (63.27% P<0.01), siphon (46.89% P<0.01), gonad (45.45% P<0.01),hepatopancreas (29.70% P<0.01), gill (21.75% P<0.05) anterior adductor muscle (17.65%) and Posterior adductor muscle (7.40% P<0.01) showed non significant. The influence of toxicant cadmium chloride in selected tissues of freshwater bivalve mollusks *Lamellidens marginalis* was taken into account in evaluating to response against stressor. Hence, we can use glycogen content as biomarker of cadmium stress in bivalve mollusks.

***Keywords*—Cadmium, different body parts glycogen Lamellidens marginalis.**

I. INTRODUCTION

Pollution of water bodies has become a universal problem in the present day world. Rapid industrialization and increase in human population are one of the major reasons for this aquatic pollution. The important sources of water pollution are industrial effluents, domestic sewage, pesticides, fertilizers, etc [1]. The major causes of aquatic pollution are the industrial effluents that contain a large array of toxic substances including heavy metals [2]. Metal contamination in the aquatic environment has become one of the most critical environmental issues of the recent years. Heavy metals are natural trace components of the aquatic environment but their higher concentration cause harmful effects on the aquatic organisms [3]. Heavy metals are non-biodegredable and once discharged into the water bodies accumulate in the aquatic organisms, including fish causing an adverse effect on them [4]. Fish population can be used as frontline indicators of suspected aquatic pollutants as they are sensitive to all kinds of environmental stressors [5]. The effects of different pollutants on the aquatic organisms have been studied by many workers. Accumulation and histopathological effects of Copper on gills and liver of Sanegales sole and toad fish [6]; Effect of Cadmium and Copper on the digestive gland enzymes of the Mollusca limpet Patella sp. [7]. Chloropyrifos reduces the O2 consumption in fish Oreochromis mossambicus [8]. Among heavy metals, Cadmium has been blacklisted by the European community [9]. It is a highly toxic and non corrosive metal. It is nonessential element with no known biological function. It is used in plastics, batteries, metal alloys, dye and metal plating industries. Effluents from these industries are sources of Cadmium in aquatic environment. A higher concentration of Cadmium in the aquatic environment is lethal to many organisms [10, 11]. Cadmium has been considered as a nonbiodegredable chemical pollutant in the aquatic environment [12]. Alteration in biochemical composition on exposure to pollutants is studied by many workers. Alterations in the biochemical levels in different body parts of fresh water bivalve, Lamellidens marginalis on exposure to heavy metal Mercury [13]. Hematological changes in the blood of Clarias batrachus exposed to mercuric chloride [14]. Impact of TBTCl on the protein content in fresh water prawn, Macrobrachum kistnensis[15]. Alteration in the biochemical constituents of muscle of Cirrhinus mrigala following exposure to heavy metals[16]. Changes in the glycolactic potential of fresh water female crab,

© 2019, IJSRBS All Rights Reserved

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020

© 2020 IJRTI | Volume 5, Issue 2 | ISSN: 2456-3315

Intensity And Screening of Fungi Causing Market Diseases of Banana (*Musa paradiscica*)

Baig Mumtaz

Dr. Rafiq Zakaria College for Women,
Aurangabad- 431001, (M.S.)

Rafiq Zakaria College for Women Aurangabad

Abstract: Post-harvest diseases caused by fungi develops on fruits and other plant products between harvesting and consumption. The threat of post-harvest disease influences the way most horticultural crops are handled. Therefore the accurate identification of the causal pathogen is essential before appropriate treatment can be made to control the pathogens. In the present study a number of fungi viz., *Alternaria alternata*, *A. citri*, *Aspergillus niger*, *A. flavus*, sp., *Cladosporium cladosporioides*, *Glevosporium musarum Drechslera australeinsis*, *Fusarium solani*, *Fusarium* sp., *Penicillium* spp., *Phytophthora capsici* and *Rhizopus stolonifer* responsible for post-harvest deterioration of fresh fruits and vegetables were isolated and identified.

Keywords: Post-harvest, pathogen, *Alternaria alternata*, *Phytophthora capsici*, Deterioration.

Introduction:

The banana (*Musa paradisicica*)) fruits are the best sources of many vitamins, minerals , carbohydrates, antioxidants like vit-C, vit-E, vit- A & zinc, selenium, lycopene etc. and dietary fibers. Fruits improve overall health of human beings. Strong immune system increases resistance power towards different types of diseases. Fruits provide all types of minerals that are required to our body. The nutritionists placed fruits and green vegetables on the top because; fruits contain all types of essential ingredients which are required for healthy living being. Fruits contain 50-90% moisture. There are reports from different parts of world that antioxidants play important role in anti -ageing process. Human body requires different types of essential amino acids all such amino acid are present in fruits.

The loss of fruits after harvest is a majue problem of fruit growing countries of the world. In order to make plan for the disease control, it is very essential to have knowledge of pathogenic organism associated with fruits during storage periods. The associated mycoflora responsible for fruit losses. The aim of study of fruit diseases of market is to develop perfect disease management strategies that are economically significant. The diseases causes change in color, shape and biochemical alteration of the fruit due to interaction of the pathogen and the fruit becomes unfit for consumption. The Amino acids prevent infections of pathogens. The fruits are highly sensitive to the exogenous agencies such as fungi, bacteria etc. that affects the quality of fruit and causes loss of fruit. The diseases of fruits which occur after harvest during packing, transportation and storage periods due to fungal or bacterial pathogen are called as post-harvest diseases, Gupta,(1989).

There are different types of fungi associated with market diseases of banana, for Pankaj Sharma and Verma, (2013) studied *Rhizopus* sp. from post-harvest rot of guava caused due to *Rhizopus* sp. from. Sumia, et. al, (2006) reported white rot of papaya by caused by *Sclerotium rolfsii*. Pankaj Sharma and Verma, (2013.) studied post harvest rot of apple disease during storage which was due to infection of *Phytopthora colocaceae*. Fusarium rot of Peach (Choudhury, (1950).); Alternaria and Cladosporium rot of grapes fruits (Ali, 2010). Rhizopus on grapes (Oyeleke and Manga, 2008).

In Marathwada region fruit storage system is not well developed. There are no any facility for storage of fruits after harvest from government. The roads are not well. Hence during transportation many of the fruits get injured. The injured fruits immediately get attacked by saprophytic fungi which causes rot diseases during transportation or storage period. Because of such problems about 20-55 percent fruits get deteriorated due to mycoflora. Some of the pathogenic fungi attack fruits at immature stage and some others infect to overripe fruits. Major loss of harvested fruits is caused due to fungi. The diseases caused before harvest of fruits also responsible for degradation of quality and cost of banana in market.

Material and Method: For the study the banana fruits were collected from godowns different fruit store houses of Aurangabad. From the same lot 10 immature healthy fruits were collected in a sterile polyethylene bag A separate polyethylene bag was used for each fruit . One infected fruit in one bag (Linskens and Jacksen, 1995). A separate bag was used even for healthy immature fruits (Bagwan, 2010). The mycoflora responsible for storage rot disease of banana fruit was isolated on PDA (Potato Dextrose Agar) medium by food poisoning technique method. Before inoculation the infected fruit was surface sterilized with the help of 0.1% HgCl2 solution and then rinsed with the solution of sterile distilled water for 3-5 times to remove traces of HgCl2 solution. Then a small piece of infected region of fruit was removed with the help of sterile r needle and the infected portion was inoculated on PDA (Potato Dextrose Agar) medium amended petriplate in sterile condition. The inoculated petriplate were incubated at room temperature 24+-3°C. The fungus growing from the inoculated infected piece was inoculated on PDA medium. The pathogenecity was confirmed by following Koch's postulates. The fungi were identified on the bases of morphological features, type of colony growth, colour of colony, size and shape of spores and pigmentation.

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

National Journal of Life Sciences, Vol. 16(1&2) 2019 : 67-70 ISSN : 0972-995X (Print), 2321-7960 (Online)

ACUTE TOXICITY STUDY OF CADMIUM CHLORIDE ON THE FRESHWATER BIVALVE, *LAMELLIDENS MARGINALIS*

SHAIKH YASMEEN

Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.)

ABSTRACT : The active substance cadmium chloride is highly toxic and showed damage to a multitude of non target species. The bivalves have been used for many years to determine the pollution status of water. In the present study static bioassays were performed on bivalve, *Lamellidens marginalis* to evaluate the median lethal concentrations of cadmium chloride ($CdCl_2$) for 96 hrs. The LC_{50} values for 96 hrs were 3.5, 9.0 and 2.0 ppm, in summer, monsoon and winter respectively. The results showed that the LC_{50} values decreased with increase in exposure period.

Key words : *Toxicity, Kutluq lake, Cadmium chloride, Lamellidens marginalis, LC_{50} values.*

INTRODUCTION

Water is the most natural resource that exists on our planet and is essential for survival and the development of modern technology. Thus, rapid industrialization is one of the main causes for aquatic pollution. Discharged wastewater has been used in different regions of the world for fish raising (Wong *et al.*,2001; Ashraf,2005 and Gad,2009). The occurrence and concentrations of various contaminants have increased in the environment along with increasing anthropogenic activities in the industrial, agricultural and other sectors (Manoj and Padhy,2013). Water is a valuable resource and plays a vital role in supporting all forms of life (Rajiv *et al.*,2012). Water pollution is, therefore, of universal concern. Among the various contaminants, environmental concentrations of heavy metals have been increasing in aquatic environments in recent years. Cadmium and copper are highly toxic to aquatic animals (Jezierska & Witeska,2001 and Mendez-Armenta & Rios,2007). Pollution as a general Tenn is associated with unfavorable alterations in the ecology, resulting in deleterious effects on human health and resources. It is an insidious and growing process, which manifests itself only when the outflow of effluents exceeds the capacity of the receiving ecosystem of environment to recover. Pollution is the changing of a natural environment, either by natural or artificial means, so that the environment becomes harmful to the living things normally found in it. Most often than not, this refers to the input of toxic chemicals into the environment as a consequence of human activities.

The various causes of pollution are the explosive growth of population, increasing urbanization, rapid industrialization, and indiscriminate use of fertilizers, chemicals and pesticides, and lack of general awareness on environmental issues. Pollution results in human health hazards and destruction of aquatic food resources such as fishes, prawns, crabs, lobsters, molluscs and so on. The release of increasing quantities of heavy metals and their salts into the terrestrial and aquatic environment, and their accumulation in living and non-living systems endangers the life of all living organisms.

In recent years, concern has increased over the issues related to heavy metal pollution, as all heavy metals are potentially harmful to most organisms at some level of exposure. The nature of environment is of critical importance when considering homeostasis mechanism of an animal. Whereas terrestrial animals are generally exposed to metals through their diets, or through the air they breathe, aquatic organisms are exposed to dissolved and particulate metals in the ambient medium. The toxicological studies of pollutants are gaining more significance in recent time and worldwide attempts has been made to identify a "hazard" from toxic chemical present or released in aquatic environment. Polluted state of the water resources has led to steady decline in aquatic flora and fauna Freshwater mussels are in serious global decline and in urgent need of protection and conservation.

The declines have been attributed to a wide array of human activities resulting in pollution and water-quality degradation. The freshwater mussels are an ecologically important fauna because they are used as sensitive biomarkers of aquatic ecosystem pollution. Bivalves are stationary filter-feeding organisms able to bioaccumulate and concentrate most pollutants even if they are present fairly low concentrations (Niyogi *et al.*,2001). The acute effects are directly related to the ingestion of the toxic chemical. These effects occur rapidly as s result of short-term exposure of a few hours, days, or week to a chemical.

In the study of the effects of a toxic substance in a single species, we seek to understand how the toxic substance affects the physiological function of individuals and how this toxin affects the demography (birth and death rates) of the population. The effect of the toxic substance may also vary among populations of a species as well as among species. At the community level, we seek to understand how the presence of the toxin alters the relative and absolute abundances of the species present. For example, a disproportionate affect on predators might allow the increase of prey species. Some simple measures of toxicity use bioassays to measure death rates in order to quantify the effect of the toxin. Such measures are commonly known as LD_{50} and LC_{50}. The LD_{50} is defined as the lethal dose at which 50% of the population if killed in a given period of time; an LC_{50} is the lethal concentration required to kill

*Corresponding author (email : shaikhyasmeen7862@gmail.com)

Received 11.04.2019 Accepted 16.05.2019

Dr. Shaikh Yasmeen Professor Department of Zoology Dr. Rafiq Zakaria College for Women Aurangabad (M.S.) India

PRINCIPAL Dr. Rafiq Zakaria College For Women Navkhanda, Jubilee Park, AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women
Aurangabad

50% of the population. The LC_{50} is a measure, e.g. in mg/l, of the concentration of the toxin whereas a dose is a more general measure and not be a concentration but may be a specific temperature, etc.). These bioassays involve subjecting several replicate groups of individuals to a range of concentrations (or doses) of a toxic compound and measuring the mortality after a defined time interval, e.g. 24 hours, 1 week, 1 month, etc. The data are then plotted and the LC_{50} is interpolated from the graph. Bioassays such as LC_{50} have been criticized on a number of grounds. Such bioassays are not representative for the species as a whole as they are most often performed on a small subset of one population and then extrapolated to the species as a whole. There can be a wide range of tolerance to toxic agents among different populations of a species which should be taken into account. An often ignored component in such studies is the evolution of resistance to the toxic substance. A sudden release of a pollutant at a concentration that is toxic to most organisms is likely to have an immediate and drastic effect on the density and species distribution within an ecosystem. A slow build-up of pollutants in an ecosystem will more likely allow for an increase in resistance over time; changes in taxonomic composition in this case should be less severe.

The toxicology not only protects human and the environment from the deleterious effects of toxicants, but also to facilitate the development of more selective toxicants with clinical drugs and pesticides. Toxicant is a quantitative concept, where substance become harmful at some higher doses but, at lower become less 422 effective to organisms. In between these limits there is a range of possible effects, from long-term chronic toxicity to immediate lethality. Contamination also, caused when an input from human activities causes an increase of a substance in fresh or seawater, sediments and organisms above the natural background level for that area and for those organisms (Clark,2001). Industrial development in the developing and undeveloped countries has resulted in heavy metal contamination of local water. Metal pollution may damage aquatic organisms (either fresh or marine water) at the cellular levels and possibly affect ecological balance. Contamination is usually measured as parts per million (ppm=mg/l) or parts per billion (ppb=µg/l) and measured as "wet weight" (contamination in moist water containing-tissues) or as "dry weight" (contamination in dehydrated tissues) as water content can vary considerably, weight was found to be a better measure (Clark,2001). The present study has been planned to evaluate the impact of cadmium chloride on toxicity of the freshwater bivalve, *L. marginalis*.

MATERIAL AND METHODS

After collection of the animals they were immediately transported to the laboratory. After bringing to the laboratory the fouling biomass and mud on shell valves were removed withought disturbing the siphonal regions. The equal sized animals (90-100 mm in shell length) were grouped and kept in a sufficient quantity of water (each animal/litre in aquaria with aeration for 24 hrs to adjust animals in laboratory condition (with removal of water at interval of 12-13 hrs). No food was given during this time and during experiment. After 24 hrs animals of equal size (90-100 mm shell length) were grouped in 10 and exposed to different test concentration of mercury chloride for static bioassay test.

The stock solution of cadmium was prepared by dissolving appropriate quantity of cadmium chloride ($CdCl_2 2^1H_2O$ AR Grade CDH Bombay) in double distilled water. The pH of water is brought between 6.9-7.1 by adding 1N HCL (due to the insolubility of cadmium in reservoir water having 7.6-8.1). Appropriate test concentration were than prepared and animals were exposed, the experiment were conducted in natural day-night rhythm. The water of appropriate test concentration and control groups were renewed twice a day at appropriate interval of 12 to 13 hrs the mortality and behaviour of the animals were recorded before every renewal of water. Such experiments were performed for the log of concentrations and percentage survival of the bivalves. The percentage mortality in various concentrations set particular period were converted into probit values and plotted against the log of concentrations (Ghosh and Chatterjee,1985). The experiments were repeated three times for confirming observed LC0 and LC50 values. The 96 hrs acute tests were recorded in three different seasons *i.e.* summer (April/May), monsoon (July/August) and winter (December/January). The regression equation between log concentration in ppm (X) and probit mortality (Y) were delivered statically using formula $Y = \bar{y} + b(x-\bar{x})$ and 95% fiducial limits were also determined by (Finney,1971).

RESULTS AND DISCUSSION

The LC_{50} values were calculated for 96 hrs by Finney's method. The LC values obtained for cadmium chloride exposed for 96 hrs exposure were 3.5, 9.0 and 12.0 ppm in summer, monsoon and winter respectively. The results showed that LC values decreases with increasing periods of exposure of tributyltin chloride. The LC_{50} values, regression results, Chi square, variance and 95% fiducial limits, lethal concentration and safe concentration were calculated and are shown in Table 1. From the above results it appears that the freshwater bivalve, *Lamellidens marginalis* is highly sensitive to cadmium chloride.

Mortality rate : In summer at the end of 96 hr total mortality of 10% in1.5 ppm, 20% in 2.0 ppm, 30% IN 2.5 ppm 40% in

Table. 1 Seasonal variation in toxicity of cadmium chloride to *Lamellidens marginalis* by regression equation.

Seasons	Observed LC_0	Observed LC_{50}	Y= a+bx	Calculated LC_{50}	95% Fiducial Limit
Summer	1.0 ppm	3.5 ppm	Y=2.48205+3.6926 x	3.37	1.55-5.19
Monsoon	4.0 ppm	9.0 ppm	Y=1.8360+3.2899 x	9.16	4.23-14.09
Winter	7.0 ppm	12.0 ppm	Y=2.970+7.425 x	11.85	6.62-17.08

PRINCIPAL
Dr. Rafiq Zakaria College for Women
Navkhanda
AURANGABAD

Rafiq Zakaria College for Women

3.0 ppm, 50% in 3.5, 60% in 4.0 ppm, 70% in 4.5 ppm, 80% in 5.0 ppm, 90% in 5.5 ppm, 90% in 90 ppm and 100% in 6.0 ppm. There was no mortality in 1.0 ppm. The observed LC_0 and LC_{100} were 1.0 ppm and 3.5 ppm. The calculated LC_{50} was 3.37 ppm. The regression equation between log concentration of cadmium and probit mortality was Y=2.48205+3.6926 x and 95% fiducial limit ranged between 1.55-5.19 ppm.

In monsoon at the end of 96 hr total mortality of 10% in 5.0 ppm, 20% in 6.0 ppm, 30% in 7.0 ppm, 40% in 8.0 ppm, 50% in 9.0 ppm, 60% in 10.0 ppm, 70% in 11.0 ppm, 80% in 12.0 ppm, 90% in 13.0 ppm and 100% in 14.0 ppm. There was no mortality in4.0 ppm. The observed LC_0 and LC_{100} were 4.0 ppm and 9.0 ppm. The calculated LC_{50} was 9.16 ppm. The regression equation between log concentration of mercury and probit mortality was Y=1.8360+3.2899 x and 95% fiducial limit ranged between 4.23-14.09 ppm (Table.1). In winter at the end of 96 hr total mortality of 10% in 8.0, 20% in 9.0 ppm, 30% in 10.0 ppm, 40% in 11.0 ppm, 50% in 12.0 ppm, 60% in 13.0 ppm, 70% in 14.0 ppm, 80% in 15.0 ppm, 90% in 16.0 ppm an 100% in 17.0ppm. There was no mortality in 7.0 ppm. The observed LC_0 and LC_{100} were 7.0 ppm and 12.0 ppm respectively. The calculated LC_{50} was 11.85 ppm. The regression equation between log concentration of mercury and probit mortality was Y=2.970+7.425 x and 95% fiducial limit ranged between 6.62-17.08 ppm (Table.1). In the present study on *Lamellidens marginalis* exposed to mercury for 96 hr. It has been observed that the species showed 5.0 ppm LC_0 values in summer, in monsoon 10 ppm while in winter 15 ppm respectively. On other hand the observed LC_{50} values for 96 hr. was 50 ppm in summer, 75 ppm in monsoon and 100 ppm in winter. Thus this species revealed more sensitive to mercury toxicity in summer than in monsoon and winter. The value obtained on this freshwater bivalve species are greater than those reported for marine bivalve. The difference in the LC_0 and LC_{50} values of mercury toxicity in different seasons on *Lamellidens marginalis* in the present study can be accountant for the difference in the change in physiological status of the animal is coordination with the changing environmental parameters. The rise in temperature, low oxygen content and low food availability are mainly accounting for the physiological demands to the survival of the species. The determination of the LC_{50} value is of immense importance since it provides fundamental data for the design of more complex disposal model. The values obtained are highly useful in the evaluation of safe level or tolerance level of a pollutant.

Pollutants at very low concentrations might be perceived organism's sensory system. If the stimulant is recognized harmful, avoidance may follow leading to escape in motile organisms, but in those forms with little or no mobility such as freshwater bivalves, avoidance may take in the form of reducing exposure external body surfaces through mucus production. In the present study, *L.marginalis* when exposed to cadmium chloride, at various concentrations, test animals showed behavioral changes such as closing of shell, secretion of mucus and as exposure period increases, foot comes out from the shell indicated death of the animal. Shell closing mechanism might be the protective device against the toxicant and provides good tolerance in the molluscs. Saxena and Parashari (1983) made a comparative study on toxicity of six heavy to freshwater fish *Channa punctatus*, The LC_{50} of Nickel was 306.0 ppm which showed it is much less toxicity however, the value for lead, mercury and cadmium were 26.0, 0.9 and 19.7 respectively which showed that mercury was most toxic among all these metal. The toxicity of these six metals to fish was in the sequence Hg>Cd>Pb>Cr>Zn>Ni. Mortality of *L.marginalis* is a more sensitive measure of toxicant. The percent survival rate of the bivalves decreased with increasing concentration and period of exposure. The evaluation of LC_{50} concentration of heavy metal is an important step before carrying out further studies on physiological changes in animals. The toxicity of particular heavy metal depends on many factors such as animal weight and size. Heavy metals are considered a measure source of pollution in natural water. These have received considerable attention because of their inherent toxicity to the living aquatic forms. Being non-biodegradable reach the aquatic environment and remain suspended and partially dissolved over the water column on accumulate in the aquatic organism. Toxicity studies measure a response of an organism to a biologically active substance (Alderdice,1966) and are useful in determining water quality. From the result, it is quite clear that the bivalve molluscs *L.marginalis* is highly sensitive to $CdCl_2$(Table.1).

Similar observations have also been reported by various workers using different heavy metals on different test animals (Pundir & Saxena,1992, Wandkhede & Dhande,1999, Shrivastava & Shrivastava,2002, Bhamre *et al.*,1996; Dmstichova *et al.*,2004 and Ksherwani *et al.*,2009). The wide variation in sensitivity of different species to different heavy metals depends on various factors like age, sex, weight, physical stage of the animal and presence or absence of enzyme system that can degrade the pollutants (Nagratnamma & Ramamurti,1981 and Piansiri *et al.*,2008). Similar findings were also reported by Georguadaki and Kotsanis (2001). In the aquatic animals gills are important organs of respiration. Damage to the gills by different heavy metals and pesticides has been reported by number of workers (Khangarot,1982; Pawar & Katdare,1983 and Nilkant & Sawant,1993). It seems therefore anoxia may be an important factor causing death of organisms exposed to pollutants (Skidmore,1964 and Burton *et al.*,1972). Another contributing factor causing death may be toxic effect of pollutant on the osmoregulatory mechanism of the animal. It is well known that fish and crustacean gills are involved in ionic regulation (Evans,1975 and Hughes & Morgan,1973) and hence impairment of gill function may affect osmoregulation. Results of present studies clearly indicate that the rate of mortality for any fixed time increases with increase in concentration and for a particular concentration with increase in exposure time and a regular mode of action of toxicant, due to accumulation up to dangerous level leading to death. The lethal effects of heavy metals (Hg, Cu, Cd, Zn and Pb have been described to coagulation of mucus (*i.e.* precipitation of insoluble metal proteins compounds) on gill surface, damage done to gill tissues and consequently result to the respiratory failure (Dandroff and Katz,1953). Thus, from the present studies it can be concluded that the toxicity of tested heavy metals to *L.marginalis* affect respiratory and nervous system of the animal resulting into death.

PRINCIPAL Rafiq Zakaria College for Women Aurangabad (M.S.)

Rani Zabana College for Women

REFERENCES

Alderdice, D. F. (1966). The detection and measurement of water pollution biological assays. *J. Fish. Res. Bd. Can.*, **25** : 1-11.

Ashraf, W. (2005). Accumulation of heavy metals in kidney and heart tissues of *Epinephelus microdon* fish from the Arabian Gulf. *Environmental Monitoring Assessment*, 101 : 311-316.

Bhamre, P.; Lomte, V. S. and Pawar, K. R. (1996). Acute toxicity of some selected heavy metals to fresh water bivalve *Parreysia favidens*. *Poll. Res.*, **15(2)** : 143-145.

Burton, D. T.; Jones, A. H. and Cairns, J. Jr. (1972). Acute Zinc toxicity to rainbow trout confirmation of hypothesis that death is related to tissue hypoxia. *J. Fish. Res. Board Can.*, **29** : 1463-1466.

Clark, R. B. (2001). Metals. In : *Marine Pollution*. Oxford University Press, Oxford, **5** : 98-125.

Dondroff, P. and Katz (1953). Critical review of literature on toxicity of industrial wastes and their components to fish. *Sewage and industrial Wastes*, **25** : 241-247.

Drastichova, J.; Svobodova, Z.; Luskova, V. and Machova, J. (2004). Effect of cadmium on haematological indices of common carp (*Cyprinus carpio*). *Bull. Environ. Contam. Toxicol.*, **72(4)** : 725-735.

Evans, D. H. (1975). Ionic exchange mechanism in fish gills. *Comp. Bioche. Physiol.*, **51** : 491-495.

Finney, D. J. (1971). *Probit Analysis*. Cambridge University Press, London, pp. 25-66.

Gad, N. S. (2009): Determination of glutathione-related enzyme and cholinesterase activities in *Oreochromis niloticus* and *Clarias gariepinus* as bioindicator for pollution in lake Manzala. *Global Veterinaria*, **3** : 37-44.

Georgoudaki and Kotsanis, N. (2001). Toxic effects of cadmium and mercury in rainbow. *Bull. Environ. Contam. Toxicol.*, **66** : 77-85.

Ghosh, T. K. and Chatterjee, S. R. (1985). Effect of chromium on tissue energy reserve in fresh water fish, *Sarotherodon mossambicus*. *Journal of Environment and Ecology*, **3** : 178-179.

Hughes, G. M. and Morgan, M. (1973). The structure of fish gill in relation to their respiratory function. *Biol. Rev.*, **48** : 419-475.

Jezierska, B. and Witeska, M. (2001). *Metal toxicity to fish*. University of Podlasie, Siedlce.

Kasherwani, D.; Lodhi, H. S.; Tiwari, K.; Shukla, S. and Sharma, U. D. (2009). Cadmium toxicity to freshwater catfish, *Heteropneustes fossils* (Bioch.). *Asian J. Exp. Sci.*, **23** : 149-156.

Khangarot, B. S. (1982). Histopathological changes in the branchial apparatus of *Puncttus sopore* (Ham.) subjected to toxic doses of Zinc. *Arch. Hydrobiol.*, **93** : 352-358.

Manoj, K. and Padhy, P. K. (2013). Oxidative stress and heavy metals: an appraisal with reference to environmental biology. *Int. Res. J. Biological Sci.*, **2(10)** : 91-101.

Mendez-Armenta, M. and Rios, C. (2007). Cadmium Neurotoxicity : Mini review. *Environ. Toxicol. Pharmacol.*, **23** : 350-358.

Nagratnamma, R. and Rammurthi, R. (1981). Comparitive evaluation of methyl parathion toxicity to some selected freshwater organisms. *Curr. Sci.*, **50** : 334-335.

Nilkant, G. V. and Sawant, K. B. (1993). Studies on accumulation and Histopathology of gills after exposure to sublethal concentration of Hexavalent chromium and effect on the oxygen consumption in *Scylla serrata* (Forskal). *Poll. Res.*, **12(1)** : 11-18.

Niyogi, S.; Biswas, S.; Sarkers, M. and Datta, A. G. (2001). Antioxidant enzymes in brackiswater oyster, *Saccostrea cucullata* as potential biomarkers of polyaromatic hydrocarbon pollution in Hooghly Estuary (India) : Seasonality and its consequences. *Sci. Total Environ.*, **281** : 237

Pawar, K. R. and Kandare, M. (1983). Acute toxicity of sumithion, BHC and Furadan to some selected freshwater organisms. *Biovigyanam*, **9** : 67-72. 246.

Piyatiratitivorakul, P. and Boonchamoi, P. (2008). Comparative toxicity of mercury and cadmium to the juvenile freshwater snail, *Filopaludina martensi*. *Science Asia*, **34** : 367-370.

Pundir and Saxena (1992). Influence of long term exposure to dietary cadmium on growth, maturation and reproduction of gold fish (Subspecies: Prussian carp *Carlassius auratus* gibelic B.).

Rajiv, P.; Hasna, A. S.; Kamaraj, M.; Rajeshwari, S. and Sankar, A. (2012). Physico-chemical and microbial analysis of different river waters in Western Tamil Nadu. *Int. Res. J. Environment Sci.*, **1(1)** : 2-6.

Saxena, O. P. and Parashari, P. (1983). Comparative study on the toxicity of six heavy metals to *C.punctatus*. *J. Environ. Biol.*, **4(2)** : 91-94.

Shrivastava, R. K. and Shrivastava, S.(2002). Cadmium induced haematological changes in a freshwater cat fish, *Heteropneustes fossils*. *J. Adv. Zool.*, **23(1)** : 23-29.

Skidmore, J. F. (1964). Toxicity of zinc compounds to aquatic animals with special reference to fish. *Quart. Rev. Biol.*, **39** : 227-248.

Wankhede, G. N. and Dhande, R. R. (1999). Effect of cadmium chloride on plasma calcium in the freshwater fish *Labeo rohita*. *J. Ecotoxicol. Environ. Monit.*, **9(3)** : 189-192

Wong, C. K.; Wong, P. P. K. and Chu, L. M. (2001). Heavy metal concentration in marine fish collected from culture sites in Hong Kong. *Archives of Environmental Contamination and Toxicology*, **40** : 60-69.

PRINCIPAL

2019-2020

RESEARCHERID
THOMSON REUTERS

[Yasmeen* 7(3): March, 2020]

ISSN 2349-4506
Impact Factor: 3.799

Global Journal of Engineering Science and Research Management

SEASONAL VARIATIONS IN PHYSICO-CHEMICAL CHARACTERISTICS OF KUTLUQ LAKE AT DAULTABAD, DISTRICT AURANGABAD

Shaikh Yasmeen*

* Dr. Rafiq Zakaria College for Women, Navkhanda Jubilee Park Aurangabad (M.S) India

Dr. Rafiq Zakaria College for Women Aurangabad

DOI: 10.5281/zenodo.3723990

KEYWORDS: Physico-Chemical Parameters, Seasonal Variations, Kutluq Lake.

ABSTRACT

The present study deals with the assessment of water quality of the Kutluq Lake at District Aurangabad. The physico-chemical characteristics were studied and analyzed during the year 2019-2020. Seasonal variations at three different sampling sites of the Kutluq Lake were observed Conductivity, pH, Total Dissolved Solids (TDS), Total Alkalinity, Total Hardness, Chlorinity, Calcium, magnesium and Dissolved Oxygen were studied at these studies. The results revealed that the condition of this lake in different seasons showed fluctuations in physico-chemical parameters.

INTRODUCTION

Water is the most natural resource that exists on our planet and is essential for survival and the development of modern technology. Thus, rapid industrialization is one of the main causes for aquatic pollution. Discharged wastewater has been used in different regions of the world for fish raising (Wong, C. K., Wong, P. P. K. and Chu, L. M. 2001; Ashraf, W., 2005; Gad, N. S., 2009). The occurrence and concentrations of various contaminants have increased in the environment along with increasing anthropogenic activities in the industrial, agricultural and other sectors (Manoj, K. and Padhy, P. K., 2013). Water is a valuable resource and plays a vital role in supporting all forms of life (Rajiv, P., *et. al.*, 2012). Water pollution is, therefore, of universal concern. Among the various contaminants, environmental concentrations of heavy metals have been increasing in aquatic environments in recent years. Cadmium and copper are highly toxic to aquatic animals (Jezierska, B. and Witeska, M., 2001; Mendez-Armenta, M., and Rios, C., 2007).

The life is linked with the quality of environment, hence the biological components of freshwater depends solely on physicochemical conditions. Analysis of physico-chemical parameters of water is essential. The changes in the physico-chemical characteristics adversely affect the living things in an environment. These water bodies pose different problems, pollution being the main and it has been rendered unfit for use and toxic for flora and fauna of the lake. Water bodies situated in the urban areas are under the pressure of various human activities such as cloth washing, bathing, and dying of cloths.

The quality of surface water including lakes and rivers depends on it's their physical, chemical and biological properties. The physiochemical properties give limited picture of water quality at particular point of view, while the living organisms act as continuous monitors of water quality over a period of time. Water quality analysis is important to preserve and protect the natural ecosystem. Analysis of physico-chemical parameters of water is essential, to assess the quality of water for the best usage like irrigation, drinking, bathing, fishing, industrial processing and so on. Water quality deals with the physical, chemical and biological characteristics in relation to all other hydrological properties. (Shinde et al, 2010).

Keeping this view in mind present study has been undertaken to assess seasonal mean values and seasonal standard deviation of different parameters in Kutluq Lake Dam.

In India some hydrobiological work on historic water bodies have been done (Dhere and Gaikwad, 2006; Sharma et al, 2007; Pejaver and Gurav, 2008; Ingole et al, 2009; and Shinde et al, 2010). This essential resource is increasingly scarce in many parts of the world due to severe impairment of water quality. The increasing anthropogenic influences in recent years in and around aquatic systems and their catchments areas have contributed to a large extent to deterioration of water quality and declining of water bodies leading to their

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

2017-820

[Yasmeen* 6(9): September, 2019]

ISSN 2349-4506
Impact Factor: 3.799

Global Journal of Engineering Science and Research Management

METAL EXPOSURE TO FRESHWATER BIVALVE MOLLUSCS LAMELLIDENS MARGINALIS FROM KUTLUQ LAKE OF DUALTADABAD DISTRICT AURANGABAD (M. S.) INDIA, IN RELATION TO ASCORBIC ACID CHANGES DURING SUMMER SEASON

Shaikh Yasmeen

*Department of Zoology, Dr. Rafiq Zakaria College for Women, Navkhanda, Jubilee Park, Aurangabad (M.S.), India

Dr. Rafiq Zakaria College for Women * Aurangabad

DOI:

KEYWORDS: Lamellidens marginalis, cadmium, toxicity, ascorbic acid.

ABSTRACT

The present study was conducted to determine alterations in ascorbic acid contents after 96hrs acute toxicity of cadmium in different body parts viz. mantle, gill, gonad, hepatopancreas, siphon, foot, anterior adductor muscle and posterior adductor muscle of freshwater bivalve in *Lamellidens marginalis* in summer season in respective groups i.e. control Lc0 and Lc50 groups. In control group the content was high from posterior adductor muscle (1.897±0.036). In Lc0 group when compared to control group the content was high from gonad (209.25% p< 0.001). In Lc50 group content was high from gonad (138.43% p< 0.001) when it was compared to control group. On the other hand when compared to Lc0 group show significantly increased from gill (41.75% p< 0.001).

INTRODUCTION

Research Background

When animals are exposed to polluted aquatic environment containing metals, these metals accumulate in various tissues significantly (Fernandes *et al.*, 2008). Accumulated heavy metals induce generation of reactive oxygen species (ROS), which attack unsaturated fatty acids of the cell membrane which leads to formation of lipid peroxidation (Viarengo, 1989). Heavy metals are responsible for biochemical and physiological changes in the organisms. C biochemical composition serve as the initial sensitive indicators of toxic effect on tissues (Thaker and Haritos, 1989).

Biochemical analysis of benthic organisms as monitors is the best option for conventional metal pollution monitoring system which may be insufficient, that leads to inaccurate water quality assessment. It is evident that, even at low concentrations, toxicant causes biochemical changes within individual organisms, before these effects are observed at higher levels of organization (Sarkar et al., 2006). Biochemical responses in aquatic organisms have been used in several monitoring programs to study the anthropogenic pollution (Cajaraville et al., 2000).

Ascorbic acid is important biomolecule. It is responsible for several metabolic reactions (Kaya, 2003). It is important antioxidant that prevents oxidative damage in tissues of organisms. The ascorbic acid has antioxidant property which helps to prevent free radical formation from toxic water soluble molecules that may cause cellular injuries. It a as a hydrogen carrier and plays an important role in carbohydrate, protein or both metabolisms. Lackner (1998) studied that ascorbic acid level was decreased during chronic exposure to different stressors. Waykaret al., (2001) studied the effect of cypermethrin on ascorbic acid content in the mantle, foot, gill, digestive gland and whole body tissues of freshwater bivalve, study of change in ascorbic acid content in molluscs exposed to heavy metals can be useful as an indicator of toxicant stress condition. Nandi et al., (2005) reported that, ascorbic acid prevents oxidative damage to the membranes against peroxydation by increasing the activity of tochoperol. Ascorbic acid is well known to play protective and therapeutic role against pollutant or metal toxicity (Rao et al., 2001). Changes in ascorbic acid content due to exposure to heavy metals were reported by Deshmukh (2013) and Rahane (2014).

Dr. S. Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park

2019-2020

International Journal of Scientific Research in Biological Sciences

Research Paper

Vol.6, Issue.5, pp.71-75, October (2019)

E-ISSN: 2347-7520

Impact of heavy metal, cadmium (II) on glycogen content of the freshwater bivalve, *Lamellidens marginalis* in monsoon season

Shaikh Yasmeen

Dr. Rafiq Zakaria College for Women, Navkhanda Palace, Jubilee Park, Aurangabad (M. S.) India

Corresponding Author: shaikhyasmeen7862@gmail.com Tel.: +918149907211

Available online at: www.isroset.org

Received: 01/Oct/2019, Accepted: 15/Oct/2019, Online: 31/Oct/2019

***Abstract*—** Aquatic environment gets polluted by heavy metals because of their environmental persistence and ability to bioaccumulate in aquatic organisms. Cadmium is a ubiquitous toxic heavy metal, biologically non-essential element, it is not biodegradable and has a very long biological half-life. The aim of the present study was to assess the glycogen content in different body parts i.e. Mantle, gill, gonad, hepatopancreas, siphon, foot, anterior adductor muscle and posterior adductor muscle of freshwater bivalvemollusces *Lamellidens marginalis* exposed to lethal concentrations of cadmium chloride after 96 hrs acute toxicity of exposure. The results clearly showed In LC0 group compared with control group the content significantly increased from gill (67.62% P<0.01) followed by hepatopancreas (51.89% P<0.01) and gonad (21.14% P<0.01) and Decreased significantly from siphon (47.87% P<0.01), Anterior adductor muscle (42.73% P<0.01), posterior adductor muscle (40.33% P<0.01), mantle (4.24% P<0.01) and foot (3.28% P<0.01).In LC50 group compared with control content showed increase significantly from mantle (41.08% P<0.01) and Decreased significantly from foot (63.27% P<0.01), siphon (46.89% P<0.01), gonad (45.45% P<0.01),hepatopancreas (29.70% P<0.01), gill (21.75% P<0.05) anterior adductor muscle (17.65%) and Posterior adductor muscle (7.40% P<0.01) showed non significant. The influence of toxicant cadmium chloride in selected tissues of freshwater bivalve mollusks *Lamellidens marginalis* was taken into account in evaluating its response against stressor. Hence, we can use glycogen content as biomarker of cadmium stress in bivalve mollusks.

***Keywords*—Cadmium, different body parts glycogen Lamellidens marginalis.**

I. INTRODUCTION

Pollution of water bodies has become a universal problem in the present day world. Rapid industrialization and increase in human population are one of the major reasons for this aquatic pollution. The important sources of water pollution are industrial effluents, domestic sewage, pesticides, fertilizers, etc [1]. The major causes of aquatic pollution are the industrial effluents that contain a large array of toxic substances including heavy metals [2]. Metal contamination in the aquatic environment has become one of the most critical environmental issues of the recent years. Heavy metals are natural trace components of the aquatic environment but their higher concentration cause harmful effects on the aquatic organisms [3]. Heavy metals are non-biodegredable and once discharged into the water bodies accumulate in the aquatic organisms, including fish causing an adverse effect on them [4]. Fish population can be used as frontline indicators of suspected aquatic pollutants as they are sensitive to all kinds of environmental stressors [5]. The effects of different pollutants on the aquatic organisms have been studied by many workers. Accumulation and histopathological effects of Copper on gills and liver of Sanegales sole and toad fish [6]; Effect of Cadmium and Copper on the digestive gland enzymes of the Mollusca limpet Patella sp. [7]. Chloropyrifos reduces the O2 consumption in fish Oreochromis mossambicus [8]. Among heavy metals, Cadmium has been blacklisted by the European community [9]. It is a highly toxic and non corrosive metal. It is nonessential element with no known biological function. It is used in plastics, batteries, metal alloys, dye and metal plating industries. Effluents from these industries are sources of Cadmium in aquatic environment. A higher concentration of Cadmium in the aquatic environment is lethal to many organisms [10, 11]. Cadmium has been considered as a nonbiodegredable chemical pollutant in the aquatic environment [12]. Alteration in biochemical composition on exposure to pollutants is studied by many workers. Alterations in the biochemical levels in different body parts of fresh water bivalve, Lamellidens marginalis on exposure to heavy metal Mercury [13]. Hematological changes in the blood of Clarias batrachus exposed to mercuric chloride [14]. Impact of TBTCl on the protein content in fresh water prawn, Macrobrachium kistnensis[15]. Alteration in the biochemical constituents of muscle of Cirrhinus mrigala following exposure to heavy metals[16]. Changes in the glycolactic potential of fresh water female crab,

© 2019, IJSRBS All Rights Reserved

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020.

IJBI 2 (1), (JUNE 2020) 52-62



International Journal of Biological Innovations

Available online: http://ijbi.org.in | http://www.gesa.org.in/journals.php

DOI: https://doi.org/10.46505/IJBI.2020.2108



E-ISSN: 2582-1032

Research Article

HOLISTIC SURVEY ON PREDATORY LADYBIRD BEETLE DIVERSITY AT SELECTED REGIONS OF NASHIK DISTRICT (MAHARASHTRA), INDIA

Dr. Rafiq Zakaria College for Women * Aurangabad *

Shaikh Yasmeen* and Punam Dugaje

Department of Zoology
Dr. Rafiq Zakaria College for Women, Aurangabad (Maharashtra), India
**Corresponding author:* shaikhyasmeen7862@gmail.com

Received: 15.04.2020 Accepted: 18.05.2020 Published: 21.05.2020

Abstract: A survey was conducted during January 2016 to December 2017 in four sites of Nashik to study the diversity of the predatory beetles. During the present study, a total of 14 species belonging to 11 genera and 4 subfamilies were recorded from the area studied. Subfamily Chilorinae is represented by 2 species belonging to 2 genera, Subfamily Coccinellinae by 8 species belonging 6 genera, Subfamily Scymninae by 2 species belonging to 2 genera and Subfamily Sticholotidinae by 2 species belonging to the same single genus from the different sites of the study area. The Subfamily Coccinellinae was the most variant and abundant among all the four subfamilies.

Keywords: Biodiversity, Coccinellids, Fauna, Ladybird beetles, Nashik.

INTRODUCTION

Biodiversity is defined as 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between the species and in the ecosystems.' The importance of this definition is that it draws attention to the many dimensions of biodiversity. The biodiversity has different levels and values (Verma, 2016). It explicitly recognizes that each and every biota can be characterized by its taxonomic, ecological and genetic diversity and the way these dimensions vary over space and time is a key feature of biodiversity. Thus, only a multidimensional assessment of biodiversity can provide insights into the relationship among changes in biodiversity, changes in ecosystem functioning and ecosystem services. There is a necessity of ecological balance for widespread biodiversity (Verma, 2017a). Agricultural activities cause more prominent changes viz., land and vegetation characteristics on smaller temporal scale and most natural process at a larger spatial scale (Ross and Richards, 1981). Unsustainable agriculture has multiple effects (Verma, 2017b) and disturbs the ecological balance (Verma, 2018a). The

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2073-2020

IJBI 2 (1), (JUNE 2020) 52-62



International Journal of Biological Innovations

Available online: http://ijbi.org.in | http://www.gesa.org.in/journals.php

DOI: https://doi.org/10.46505/IJBI.2020.2108



Research Article

E-ISSN: 2582-1032

HOLISTIC SURVEY ON PREDATORY LADYBIRD BEETLE DIVERSITY AT SELECTED REGIONS OF NASHIK DISTRICT (MAHARASHTRA), INDIA

Shaikh Yasmeen* **and Punam Dugaje**

Department of Zoology
Dr. Rafiq Zakaria College for Women, Aurangabad (Maharashtra), India
*Corresponding author: shaikhyasmeen7862@gmail.com

Received: 15.04.2020 Accepted: 18.05.2020 Published: 21.05.2020

Abstract: A survey was conducted during January 2016 to December 2017 in four sites of Nashik to study the diversity of the predatory beetles. During the present study, a total of 14 species belonging to 11 genera and 4 subfamilies were recorded from the area studied. Subfamily Chilorinae is represented by 2 species belonging to 2 genera, Subfamily Coccinellinae by 8 species belonging 6 genera, Subfamily Scymninae by 2 species belonging to 2 genera and Subfamily Sticholotidinae by 2 species belonging to the same single genus from the different sites of the study area. The Subfamily Coccinellinae was the most variant and abundant among all the four subfamilies.

Keywords: Biodiversity, Coccinellids, Fauna, Ladybird beetles, Nashik.

INTRODUCTION

Biodiversity is defined as 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between the species and in the ecosystems.' The importance of this definition is that it draws attention to the many dimensions of biodiversity. The biodiversity has different levels and values (Verma, 2016). It explicitly recognizes that each and every biota can be characterized by its taxonomic, ecological and genetic diversity and the way these dimensions vary over space and time is a key feature of biodiversity. Thus, only a multidimensional assessment of biodiversity can provide insights into the relationship among changes in biodiversity, changes in ecosystem functioning and ecosystem services. There is a necessity of ecological balance for widespread biodiversity (Verma, 2017a). Agricultural activities cause more prominent changes viz., land and vegetation characteristics on smaller temporal scale and most natural process at a larger spatial scale (Ross and Richards, 1981). Unsustainable agriculture has multiple effects (Verma, 2017b) and disturbs the ecological balance (Verma, 2018a). The

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navrangabad, Jubilee Park,

2019-2020

International Journal of Scientific Research in Biological Sciences

Research Paper

Vol.6, Issue.5, pp.71-75, October (2019)

E-ISSN: 2347-7520

Impact of heavy metal, cadmium (II) on glycogen content of the freshwater bivalve, *Lamellidens marginalis* in monsoon season

Shaikh Yasmeen

Dr. Rafiq Zakaria College for Women, Navkhanda Palace, Jubilee Park, Aurangabad (M. S.), India

*Corresponding Author: shaikhyasmeen7862@gmail.com Tel.: +918149907211

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

Available online at: www.isroset.org

Received: 01/Oct/2019, Accepted: 15/Oct/2019, Online: 31/Oct/2019

***Abstract*—** Aquatic environment gets polluted by heavy metals because of their environmental persistence and ability to bioaccumulate in aquatic organisms. Cadmium is a ubiquitous toxic heavy metal, biologically non-essential element, it is not biodegradable and has a very long biological half-life. The aim of the present study was to assess the glycogen content in different body parts i.e. Mantle, gill, gonad, hepatopancreas, siphon, foot, anterior adductor muscle and posterior adductor muscle of freshwater bivalvemolluses *Lamellidens marginalis* exposed to lethal concentrations of cadmium chloride after 96 hrs acute toxicity of exposure. The results clearly showed In LC0 group compared with control group the content significantly increased from gill (67.62% P<0.01) followed by hepatopancreas (51.89% P<0.01) and gonad (21.14% P<0.01) and Decreased significantly from siphon (47.87% P<0.01), Anterior adductor muscle (42.73% P<0.01), posterior adductor muscle (40.33% P<0.01), mantle (4.24% P<0.01) and foot (3.28% P<0.01).In LC50 group compared with control content showed increase significantly from mantle (41.08% P<0.01) and Decreased significantly from foot (63.27% P<0.01), siphon (46.89% P<0.01), gonad (45.45% P<0.01),hepatopancreas (29.70% P<0.01), gill (21.75% P<0.05) anterior adductor muscle (17.65%) and Posterior adductor muscle (7.40% P<0.01) showed non significant. The influence of toxicant cadmium chloride in selected tissues of freshwater bivalve mollusks *Lamellidens marginalis* was taken into account in evaluating to response against stressor. Hence, we can use glycogen content as biomarker of cadmium stress in bivalve mollusks.

***Keywords*—** *Cadmium, different body parts glycogen Lamellidens marginalis.*

I. INTRODUCTION

Pollution of water bodies has become a universal problem in the present day world. Rapid industrialization and increase in human population are one of the major reasons for this aquatic pollution. The important sources of water pollution are industrial effluents, domestic sewage, pesticides, fertilizers, etc [1]. The major causes of aquatic pollution are the industrial effluents that contain a large array of toxic substances including heavy metals [2]. Metal contamination in the aquatic environment has become one of the most critical environmental issues of the recent years. Heavy metals are natural trace components of the aquatic environment but their higher concentration cause harmful effects on the aquatic organisms [3]. Heavy metals are non-biodegredable and once discharged into the water bodies accumulate in the aquatic organisms, including fish causing an adverse effect on them [4]. Fish population can be used as frontline indicators of suspected aquatic pollutants as they are sensitive to all kinds of environmental stressors [5]. The effects of different pollutants on the aquatic organisms have been studied by many workers. Accumulation and histopathological effects of Copper on gills and liver of Sanegales sole and toad fish [6]; Effect of Cadmium and Copper on the digestive gland enzymes of the Mollusca limpet Patella sp. [7]. Chloropyrifos reduces the O2 consumption in fish Oreochromis mossambicus [8]. Among heavy metals, Cadmium has been blacklisted by the European community [9]. It is a highly toxic and non corrosive metal. It is nonessential element with no known biological function. It is used in plastics, batteries, metal alloys, dye and metal plating industries. Effluents from these industries are sources of Cadmium in aquatic environment. A higher concentration of Cadmium in the aquatic environment is lethal to many organisms [10, 11]. Cadmium has been considered as a nonbiodegredable chemical pollutant in the aquatic environment [12]. Alteration in biochemical composition on exposure to pollutants is studied by many workers. Alterations in the biochemical levels in different body parts of fresh water bivalve, Lamellidens marginalis on exposure to heavy metal Mercury [13]. Hematological changes in the blood of Clarias batrachus exposed to mercuric chloride [14]. Impact of TBTCl on the protein content in fresh water prawn, Macrobrachium kistnensis[15]. Alteration in the biochemical constituents of muscle of Cirrhinus mrigala following exposure to heavy metals[16]. Changes in the glycolactic potential of fresh water female crab,

© 2019, IJSRBS All Rights Reserved

Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020

IJBI 1 (2), (DECEMBER 2019) 73-77

International Journal of Biological Innovations

Available online: http://ijbi.org.in | http://www.gesa.org.in/journals.php

DOI: https://doi.org/10.46505/IJBI.2019.1207



Research Article

E-ISSN: 2582-1032

Cadmium induced histopathological alterations in female gonad of freshwater bivalve mollusks, *Lamellidens marginalis* during summer season

Shaikh Yasmeen

Department of Zoology
Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India
**Corresponding author:* shaikhyasmeen7862@gmail.com

Received: 20.11.2019 Reviewed: 02.12.2019 Accepted: 15.12.2019

Abstract: The study was aimed to investigate the effect of cadmium on the gonad in female fresh water bivalve mollusks, *Lamellidens marginalis*. The experiment was carried out on the bivalves collected from Kutluq Lake, Daultabad, district Aurangabad of Maharashtra, India from January 2018 to December 2018. The histolopathological findings include partial disruption of ovarian follicle, vacuolation of germinal cells cytoplas m and damaged inter follicular connective tissue. The cytomorphological structure of ovarian follicles got deformed and elongated, losing their typical configuration. Necrosis and fibrosis in the connective tissue and damage to yolk vesicles of maturing sites were observed.

Keywords: Cadmium, Female gonad, Histopathology, *Lamellidens marginalis*.

INTRODUCTION

Histopathology is an indispersable and powerful technique in establishing routine toxicology studies performed for the purpose of risk assessment of living resources useful exposing the tissue contents and mechanisms of action at cellular level. To assess its usefulness in toxicology studies with shellfishes, several investigators have performed experiments using various environmental contaminants (Wester and Canton, 1991).

Many species of bivalve mollusks abundantly found in Indian waters can sustain regular & very productive Fisheries in India, particularly in Maharashtra state. Several species of commercial, important and edible bivalves like clams, oysters mussels etc. are found along the coastal areas whereas other bivalve shell fishes like mussels and clams are found both in lotic and lentic freshwater bodies. Both marine and freshwater bivalve shellfishes play an important role as bio-indicators to detect various environmental fluctuations (Dholakia 2013 and Singh Nitin 2017).

In order to understand a pattern of damage caused by particular chemical to the tissue, it is essential to have an insight into the histological analysis of the tissues. Histopathology, deal with the study of pathological changes of the microscopic structure of the body tissue. Any peculiar type of alteration of cells may indicate the presence of the disease or the effect of toxic substances. Every organism has capacity to tolerate suboptimal stress conditions. The maximum tolerance is at the extreme stress condition which exhibits physiologically defined limitations, reflected predominantly in the structural architecture of various tissues of the animal. Traces of toxicants introduced in the body can be neutralized by immune system, but when high amount of toxicant enters, it affects the structure and function of different organs in the body of animal. Thus, histopathology is an extremely useful tool for assessing effects of toxicants at individual level. Their uncontrolled use may cause profound effects and a long term environmental impact on natural aquatic environments (Bellas *et. al.*, 2004). Pesticides may impair the functioning of organisms in aquatic environment even at low concentration.

Dr. Rafiq Zakaria College for Women, Aurangabad

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020

IJBI 1 (2): (DECEMBER 2019) 73-77

International Journal of Biological Innovations

Available online: http://ijbi.org.in | http://www.gesa.org.in/journals.php

DOI: https://doi.org/10.46505/IJBI.2019.1207

Research Article

E-ISSN: 2582-1032

Cadmium induced histopathological alterations in female gonad of freshwater bivalve mollusks, *Lamellidens marginalis* during summer season

Shaikh Yasmeen

Department of Zoology
Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India
**Corresponding author:* shaikhyasmeen7862@gmail.com

Received: 20.11.2019 Reviewed: 02.12.2019 Accepted: 15.12.2019

Abstract: The study was aimed to investigate the effect of cadmium on the gonad in female fresh water bivalve mollusks, *Lamellidens marginalis*. The experiment was carried out on the bivalves collected from Kutluq Lake, Daultabad, district Aurangabad of Maharashtra, India from January 2018 to December 2018. The histolopathological findings include partial disruption of ovarian follicle, vacuolation of germinal cells cytoplasm and damaged inter follicular connective tissue. The cytomorphological structure of ovarian follicles got deformed and elongated, losing their typical configuration. Necrosis and fibrosis in the connective tissue and damage to yolk vesicles of maturing sites were observed.

Keywords: Cadmium, Female gonad, Histopathology, *Lamellidens marginalis*.

INTRODUCTION

Histopathology is an indispensable and powerful technique in establishing routine toxicology studies performed for the purpose of risk assessment of living resources useful exposing the tissue contents and mechanisms of action at cellular level. To assess its usefulness in toxicology studies with shellfishes, several investigators have performed experiments using various environmental contaminants (Wester and Canton, 1991).

Many species of bivalve mollusks abundantly found in Indian waters can sustain regular & very productive Fisheries in India, particularly in Maharashtra state. Several species of commercial, important and edible bivalves like clams, oysters mussels etc. are found along the coastal areas whereas other bivalve shell fishes like mussels and clams are found both in lotic and lentic freshwater bodies. Both marine and freshwater bivalve shellfishes play an important role as bio-indicators to detect various environmental fluctuations (Dholakia 2018 and Shinde Nitin 2017).

In order to understand a pattern of damage caused by particular chemical to the tissue, it is essential to have an insight into the histological analysis of the tissues. Histopathology, deal with the study of pathological changes of the microscopic structure of the body tissue. Any peculiar type of alteration of cells may indicate the presence of the disease or the effect of toxic substances. Every organism has capacity to tolerate suboptimal stress conditions. The maximum tolerance is at the extreme stress condition which exhibits physiologically defined limitations, reflected predominantly in the structural architecture of various tissues of the animal. Traces of toxicants introduced in the body can be neutralized by immune system, but when high amount of toxicant enters, it affects the structure and function of different organs in the body of animal. Thus, histopathology is an extremely useful tool for assessing effects of toxicants at individual level. Their uncontrolled use may cause profound effects and a long term environmental impact on natural aquatic environments (Bellas *et. al.*, 2004). Pesticides may impair the functioning of organisms in aquatic environment even at low concentration.

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jalna Road,
AURANGABAD. (M.S.)

2019-20

[Yasmeen* 6(9): September, 2019]

ISSN 2349-4506
Impact Factor: 3.799

Global Journal of Engineering Science and Research Management

METAL EXPOSURE TO FRESHWATER BIVALVE MOLLUSCS LAMELLIDENS MARGINALIS FROM KUTLUQ LAKE OF DUALTADABAD DISTRICT AURANGABAD (M. S.) INDIA, IN RELATION TO ASCORBIC ACID CHANGES DURING SUMMER SEASON

Shaikh Yasmeen
*Department of Zoology, Dr. Rafiq Zakaria College for Women, Navkhanda, Jubilee Park, Aurangabad (M.S.), India

Dr. Rafiq Zakaria College for Women * Aurangabad *

DOI:

KEYWORDS: Lamellidens marginalis, cadmium, toxicity, ascorbic acid.

ABSTRACT

The present study was conducted to determine alterations in ascorbic acid contents after 96hrs acute toxicity of cadmium in different body parts viz. mantle, gill, gonad, hepatopancreas, siphon, foot, anterior adductor muscle and posterior adductor muscle of freshwater bivalve in *Lamellidens marginalis* in summer season in respective groups i.e. control Lc0 and Lc50 groups. In control group the content was high from posterior adductor muscle (1.897±0.036). In Lc0 group when compored to control group the content was high from gonad (209.25% p< 0.001). In Lc50 group content was high from gonad (138.43% p< 0.001) when it was compared to control group. On the other hand when compared to Lc0 group show significantly increased from gill (41.75% p< 0.001).

INTRODUCTION

Research Background

When animals are exposed to polluted aquatic environment containing metals, these metals accumulate in various tissues significantly (Fernandes *et al.*, 2008). Accumulated heavy metals induce generation of reactive oxygen species (ROS), which attack unsaturated fatty acids of the cell membrane which leads to formation of lipid peroxidation (Viarengo, 1989). Heavy metals are responsible for biochemical and physiological changes in the organisms. C biochemical composition serve as the initial sensitive indicators of toxic effect on tissues (Thaker and Haritos, 1989).

Biochemical analysis of benthic organisms as monitors is the best option for conventional metal pollution monitoring system which may be insufficient, that leads to inaccurate water quality assessment. It is evident that, even at low concentrations, toxicant causes biochemical changes within individual organisms, before these effects are observed at higher levels of organization (Sarkar et al., 2006). Biochemical responses in aquatic organisms have been used in several monitoring programs to study the anthropogenic pollution (Cajaraville et al., 2000).

Ascorbic acid is important biomolecule. It is responsible for several metabolic reactions (Kaya, 2003). It is important antioxidant that prevents oxidative damage in tissues of organisms. The ascorbic acid has antioxidant property which helps to prevent free radical formation from toxic water soluble molecules that may cause cellular injuries. It a as a hydrogen carrier and plays an important role in carbohydrate, protein or both metabolisms. Lackner (1998) studied that ascorbic acid level was decreased during chronic exposure to different stressors. Waykaret al., (2001) studied the effect of cypermethrin on ascorbic acid content in the mantle, foot, gill, digestive gland and whole body tissues of freshwater bivalve, study of change in ascorbic acid content in molluscs exposed to heavy metals can be useful as an indicator of toxicant stress condition. Nandi et al., (2005) reported that, ascorbic acid prevents oxidative damage to the membranes against peroxydation by increasing the activity of tochoperol. Ascorbic acid is well known to play protective and therapeutic role against pollutant or metal toxicity (Rao et al., 2001). Changes in ascorbic acid content due to exposure to heavy metals were reported by Deshmukh (2013) and Rahane (2014).

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-2020-

ISJ
International Science Journal
Peer-reviewed
www.sciencejournal.in

29. *ANUKUL*: AROBOT WITH MORAL CONSCIOUSNESS

Dr. Khan Mahlaqa Afzal
Assistant Professor in English
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad-431001 Email: khan.mahalqa@gmail.com

Dr. Khan Mahlaqa Afzal works as Assistant Professor in English in Dr. Rafiq Zakaria College for Women Navkhanda, Jubilee Park, Aurangabad-431001. Her area of specialization includes ELT, Gender Studies, and Postcolonial Literature. She has worked on gender and textuality for her PhD. At present 11 research articles and 1 MRP funded by UGC is at her credit. She has presented 27 research papers at national and international seminars/conferences. She conducted workshop for Teachers in L.N.Gumilyov National University of Astana, Kazakhstan from 29/09/2009 to 09/10/2009.

ABSTRACT:

The present research paper attempts to bring out moral consciousness of Anukul througha short film by Sujoy Ghosh. It tries to highlight the relationship between human and machine through Nikunj, Ratan and Anukul. It further speaks about the treatment to each other. This paper mocks at human temperament with reference to Ratan. It also reveals the significance of dharma through Nikunj and Anukul.The present research paper offers a study of contradictory side of human nature and adoptability of manmade machines.

Sci- Fi moviesnowadaysare considered as one of the most popular and profitable means of film business. In Hollywood this type of films always receives commercial success. Indian Sci- Fi movies are inspired by the material gain of Hollywood which is either a copy or an adaptation of

Volume - 7 Special Issue1, 2020, ISSN: 2348-604X (p); 2348-6058 (e) © 2020 DAMA International. Proceedings of the International Conference on Science & Science Fiction Organised by Shri Mukatanand College, Gangapur, Aurangabad (MS) - India, 10th & 11thJanuary, 2020. Editors reserve all rights.

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ISJ
International Science Journal
Peer-reviewed
www.sciencejournal.in

English films.The subjects of such movies generally deals with the arrival of alien, clash between alien and human, spacecraft, the war with aliens, robots space travel and so on.Indian Sci-Fi's like Mr. India, *Koi Mil Gaya, KrrishSeries,Robot, 2.0,* and so onare highly appreciated and well received by Indian audience because these movies infuses theme of love, romance, and other Indian filmy masala.

Anukul, is a short film on robot by SujoyGhosh (2017). It is a loose adaptation of the short story Anukul written by Satyajit Ray in 1976, he was a visionary who could have thought about such topic in 70's which deals with I robot and futuristic approach of machine versus human.The film is set in an unidentified time in the future where humanized robots are hired by all people to perform their personal or professional duties. It was the time when a human is replaced by robot since it is cheaply available. The robots are taking up the jobs from human beings and the world seems to be divided between those who support the new technology and one who doesn't.NikunjChaturvedi is middle aged man, a teacher by profession who supports advance technology and employs Anukul as a house help.

The film begins with Nikunj buying a robot; he casually asks the sales woman what duties "it" performs. She corrects Nikunj by saying that it is not 'it', the robot is Anukul. By giving the name to a machine it is very clear that author wanted to create subjectivity for the machine or even the humanizing the machine. Anukul sitting there smile very humbly towards Nikunj. He appeared more human and certainly not a machine. According to the saleswoman he can perform many tasksand loves reading books. In her view, Anukul is an advance robot and everything is programmed in him. He is everready to learn anything from his master. He followsNikunj's ethics, principles and perceptions.Anukul appears to be an ideal combination of human and machine. As the manager said toNikunj, *"Anukulkabhisotanhi...24 ghantyaapkisewa may rahega*...no holidays no payment for overtimes.[1] though it is quite opposite to the programs of I

© 2020 DAMA International. Proceedings of the International Conference on Science & Science Fiction Organised by Shri Mukatanand College, Gangapur, Aurangabad (MS) - India, 10th & 11th January, 2020. Editors reserve all rights.

HEAD
Department of English
Navkhanda, Aurang

robot. Machines don't have ethics and principles; they perform the tasks assigned religiously. Nikunjasks Anukul whether he has any issues of working in his house on which Anukul gently replies "no sir and comes along with Nikunj happily". They enjoy the company of each other.Nikunj is happy with the services of Anukul.Satyajeet Ray through this short story and Ghosh through his way of cinematography offera thought provoking concept of mutual respect and understanding of each other is essential in sustaining the relationships between human and machine. The world is crying over the destructive forces of technology and how A/I is slowly replacing human. Director of the Anukul claims that the cordial and optimistic relations between the two can end this struggle. If users of technology will became the benefiter than technology will be the ideal facilitator itself.

The background of the film highlights the conflict between human and robots.Robots are replacing human in companies and industries which leads to unemployment. Few social organizations are working against hiring robots instead of human beings.Among these Anti-robots is one of the cousin brothers of Nikunjis Ratan, who recently lost his 15 years of job to robot. He is alcoholic and very furious to see Anukul performing duties in household of Nikunj.Since he lost his job, he loses control and abuses Anukul. After attack Anukul survives but few electric chips were damaged. The company warns Nikunj that Anukul by law has all the authority to give a high voltage electric shock to his attacker in order to protect self. The question raised here is whether self-defense should or should not be built in the programming of such robots. If it is so it will cause serious problems to human race. Machines are built for service not for reactions. And if they possess a legal right how will they interpret the morality of an abuser. The issue of morality is also highlighted in the film 'Anukul'. In addition to this, once Anukul was reading BhagwatGeeta and was unable to comprehend the episode of dharma. It was confusing for him whereKrishna asksArjuna to kill Kauravas.The act of killing our own brothers

Volume - 7 Special Issue1, 2020, ISSN: 2348-604X (p); 2348-6058 (e) © 2020 DAMA International. Proceedings of the International Conference on Science & Science Fiction Organised by Shri Mukatanand College, Gangapur, Aurangabad (MS) - India, 10th & 11thJanuary, 2020. Editors reserve all rights.

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

is not a noble task.Therefore he asks many questions to his master. Nikunj answers his questions, doubts and clarifies that Krishna never asked Arjuna to kill his brothers, he only asked him to perform his duties /dharma. He said that righteous duties are above all relations.He also explained that duties change according to time or circumstances. In his view one can identify right and wrong after realizing on which side of justice you are, it is decided by your conscious.The being conscious is an eternal part of humansand not of the machines. The idea of wrong and right may or may not be understood by Anukul but with the positive relationship with Nikunj, he realized that Nikunj is right man.According to SyntellKoay, a famous YouTuber on reacting to the film says, "one must have positive relationship with technology to have sustainable growth and mutual understanding, we should also have to have optimistic take on technology".[2]

The positive relationship between Nikunj and Anukul flourishes day by day. Nikunj was always kind and humble towards Anukul.He hides Anukul from the organizations who oppose hiring of robots. Unfortunately one fine day he too lost his job to Robot, hired by his school to teach children. He humbly told Anukul that now he cannot afford him since he has no money to pay his company. Meanwhile Ratanshocks him with newsthat he is the legal heir of the property belongs to their uncle. He did not leave anything for Nikunj.Nikunj was quite but still wanted to participate in the last rituals of his uncle. He left Ratan in a room and went inside to change;Ratan under the influence of liquor became more furious towardsAnukul. He said that from all his money he will buy all robots and switch them off. Nikunj heard a loud voice of lightening. When he rushed towards the drawing room he saw Ratanlying on the floor unconscious and Anukul standing before him. Anukul informed to Nikunj that Ratanwas trying to hit himtherefore he gave him a very high electric shock.Lightning struck outside at the time of shock.According todoctor Ratan dies from massive heart attack. The end of film is dramatic when Nikunj inherits 11.50 crore of his uncle became the owner of all the property. Anukulwith a smile puts hand on his heart

Volume - 7 Special Issue1, 2020, ISSN: 2348-604X (p); 2348-6058 (e) © 2020 DAMA International. Proceedings of the International Conference on Science & Science Fiction Organised by Shri Mukatanand College, Gangapur, Aurangabad (MS) - India, 10th & 11thJanuary, 2020. Editors reserve all rights.

HEAD
Department of English
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad.

which is the sign of conscience.This indicates that he performed his dharma i.e. to serve the master.Sampada Sharma in an article published in *The Indian Expresssays*, "With Anukul, Ghosh attempts to make a short film that conveys its meaning through gestures instead of dialogues. Here the subtext superseded the verbality and therein lies the beauty".[3]She further said that the two human characters are as flawed as the rest of and the android (robot), though a machine, doesn't feel stuck to his robotic ways. His constant evolution in the short film gives the audience an insight into what the future could hold for this universe. Anukul who loves to read and is fascinated by the collection of books at his employer's house. His reading isn't just mechanical, he knows how to interpret and that makes him better than most humans. The discussion over Gita and Dharma is well-utilized and serves the larger plot as well.

The justification of Ratan's death was already given before death occurs. Thereference of Geeta and innocent questions of Anukul leads to his attempt to eliminate Ratan from the scene to provide justice to Nikunj is obvious. BhagwatGeeta, Ramayana and Mahabharata or any religious text for that matte convey the message of universal justice, victory of good over evil and the basic concept of righteous duty. If Ratan would have the money, he surely would have spendsit on buying more alcohol and becoming more destructive whereas humble, kind and mature Nikunj have good understanding and purpose of life. His positive purpose will serve hundreds of people. Like Lord Krishna it appears the responsibility of Anukul to protect the bad influence of wealth on people by killing the wrong one and providing the same wealth tothe right one.Nikunj certainly set an ideal influence of humanity for Anukul. Though killing brother is horrible but death is justified. Nikunj the human by being his own self brought the change in programming of Anukul, the robot. He is the Good Samaritan for Anukul- the I robot. And he by his artificial intelligence learned and perceived the idea about good deeds and good action, which is not at all

HEAD
Department of English
Dr. Razia Zakaria College For Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Razia Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

OUR HERITAGE
ISSN : 0474-9030 Vol-68, Special Issue-11
Impact Factor (2020) - 6.8
2019-2020

Thermal Power Station at Parli Vaijnath: A Review

Quadri F B[1], Sandip V Patil[2], Chishty S Q[3], Sangita Shinde[4]
[1]Dr.Rafiq Zakaria College for Women, Aurangabad., [2]Shri Pancham Khemraj Mahavidyalaya, Sawantwadi, [3]Dr.Rafiq Zakaria College for Women, Aurangabad., [4]Pratishthan Mahavidyalaya, Paithan Aurangabad, M.S.India firdose_q@rediffmail.com
[1]Author-Email- firdose_q@rediffmail.com
[2]Author-Email- sangitamanal@gmail.com

Abstract: A conventional energy source has been the main source of energy since ancient period. These sources are coal, petroleum and natural gas, and these sources are bound to extinct one or the other day owing to the increasing demand of the population. Efficiency of the existing power generators have to be increased and other means of power generation with good efficiency are to be invented. The thermal power station at Parli Vaijnath in Beed district is one of the vital powers generating station of Marathwada region.

Keywords: conventional, thermal power, generator, dynamo, thermal capacity.

Introduction:

Conventional energy sources are the one that cannot be reused again and again. These sources are coal, petroleum and natural gas. Energy is generated from these fossil fuel by burning them in controlled manner in thermal power stations[1] & [2]. These resources are bound to extinct one day, owing to the increasing demand of the population. They are fast depleting hence alternatives sources, with good efficiency are to be invented.

Almost two third of electricity demand of the world is fulfilled by **thermal power stations**. In these power stations, steam is produced by burning some fossil fuel (e.g. coal) and then used to run a steam turbine. Thus, a thermal power station may sometimes called as a **Steam Power Station**. After the steam passes through the steam turbine, it is condensed in a condenser and again fed back into the boiler to become steam. This is known as ranking cycle. Majority of thermal power plants use coal as their primary fuel, hence they are also called as **coal fired thermal power plant.**

Principle:

The working principle of **thermal power plant operation** depends on Rankin Cycle. In a thermal power plant, coal is coming from coal storage and burnt in the boiler. It converts water into steam. This steam is expanded in the prime-mover (i.e. turbine) which produces mechanical power driving the alternator coupled to the turbine. The steam is expanded again the turbine and usually condensed in the condenser to be fed into the boiler. But in real practice, the conversion of heat from coal combustion into electrical energy needs some modern arrangements and improvements, in which it will run in proper working efficiency.

The basic working components of the typical thermal power station are as shown in the following figure.

Dr. Quadri F.B.
Asst. Prof.
Dept of Physics
Dr. RZCW Aurd.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nankhanda
AURANGABAD (M.S.)

OUR HERITAGE
ISSN : 0474-9030 Vol-68, Special Issue-11
Impact Factor (2020) - 6.8

National

19-02.

Dr. Rafiq Zakaria College for Women's Autonomous

Jayakwadi Hydro-Power plant- A Birds Eye view

Sangita Shinde[1], Pallavi Nalle[2], S.B. Patil[3], F.B. Quadri[4], N.D. Chaudhari[3], B.R. Sharma[1]

[1]Pratishthan Mahavidyalaya, Paithan, Aurangabad, M.S.,
[2]Shri Shivaji Science and Arts College, Chikhali, Buldhana.
[3]Deogiri College, Aurangabad.
[4]Dr.Rafiq Zakaria College for Women, Aurangabad.

Email- sangitamraval@gmail.com
Email- pallavinalle8@gmail.com

Abstract

Energy is required now more than ever due to population growth, industrialization and modernization. Challenges such as carbon dioxide (CO_2) emissions and depletion of conventional source of energy necessitate for renewable sources, of which hydro energy seems to be the most predictable. Hydro which is hydro energy provides electricity to communities by converting hydro energy into electrical energy. The Jayakwadi Hydro-Power plant at Paithan in Aurangabad is vital Hydro-electricity generator, in Marathwada region. This paper is an overview of Jayakwadi hydro-Power system by reviewing some of its basic components such as turbine and generator that make this conversion process possible. As well as its advantages and limitations will also be reviewed to provide the basic knowledge of hydro-power system.

Keywords: Hydro-power, Hydro-turbines, generator, electricity.

1. INTRODUCTION

Energy is the most fundamental sector for the progress of a nation [1]. It is inevitable for survival and indispensable for developmental activities to promote education, health, transportation and infrastructure for attaining a reasonable standard of living and is also a critical factor for economic development and employment [2]. Urbanization, economic development, industrialization and rapid increase in population growth have raised the demand for power generation manifolds [3]. As the human population and activities are progressively developing, it is most certain that the demand for energy worldwide is increasing as well, and this trend is most likely to continue in the future [4]. For meeting the expected energy demand as the population will rise and to sustain economic growth, alternative form of energy such as renewable energy needs to be expanded [5]. Hydro power energy is one of the most clean

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Newkhande, Jafferabad
AURANGABAD (M.S.)

Scanned with CamScanner

PREDICTION OF GENDER USING STATISTICAL ANALYSIS TECHNIQUES OF FEMUR PARAMETERS: REVIEW PAPER

Mohammad Naeemullah[1] and Dr. S. Q. Chishti[2]
Associate Professor[1] and Research Scholar[2], Department of Computer Science, Dr. Rafiq Zakaria College for Women, Aurangabad

ABSTRACT
The study is for the detection of gender from the femur bone of skeletal. The proposed system is being designed to use all the parameters related with the femur bone and detect the gender to which it belong. Different rules are required to be made for the detection and these rules are mined and applied on the values of parameters of the found femur bone for the determination of gender. The paper gives an idea regarding the concept.

Keyword: Femur Bone, Data Mining, Variables, Gender, Skeletal.

1. INTRODUCTION

One of the most common and critical problem faced by Anatomists is establishing the identity of a person from decomposed body or only skeletal remains of a deceased. This may be needed either by the law enforcement agency in some medico-legal case, or by Anthropologists to establish the identity of a person.

In achieving this objective there are a number of factors to establish, the important being

a. The age at the time of death

b. Sex

c. Race or Nationality

Stanfield's postulation of evolutionary biology (1977) says that "the genotypic (phynotypic) variance is inversely proportional to the intensity of establishing selection".

This explains the differences in morphology of adult males and females Morphological features of bones also depend on nutrition, occupation, race, & climate or geography of the region. The most reliable tools is confirming the identification in such cases is the dental pattern, next comes the bones, since tooth are the last to decay & second last are the bones. In our country dental records of all individuals are not kept as matter of practice, so we have to depend on bony remnants besides circumstantial evidences, to establish the ages and sex of a person.

Among bones skull & pelvis are the most reliable tools in the identification of age and sex of a person. The various methods used by these workers include.

I. Morphological or traditional non metrical methods like identification points etc.

II. Metrical methods which include

a. Pearson' univariate analysis

b. Demarketing points

c. Use of various indices on the basis of significant measurements.

d. Fischer's multivariate Analysis (1939)

It is quite clear that less the skeletal remain available more difficult is the work of an expert. A number of times law enforcement agencies come up with very few bones or even a single bone. It is necessary therefore to do extensive work on all individual bones which will help in establishing the sex, age and race of the deceased and hence the identity.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Journal of The Gujarat Research Society

ISSN: 0374-8588
Volume 21 Issue 15,December 2019

Study of Effect of Different Drugs on Spider Knitting of Web using Fractals

S. Q. Chishty, Supriya Subhash Behere
1:Dept. of Physics ,Dr Rafiq Zakaria College for Women Navkhanda Aurangabad M.S. India
2:Dept. of Physics, Dr. B.A. M University Aurangabad. M.S. India
chishtysq@gmail.com
suhashbehere@gmail.com

Abstract— The inherent property of a spider is knitting of the web. This was affected due to the effect of these drugs Different drugs were administered to a spider. The Webs Knitted by spider are studied under the influence of drugs like Marijuana, Caffeine , Speed and sleeping pills The webs knitted by the different drugs were photographed with the help of high resolution SLR camera. These photographs were starting points for present work. The fractal dimensions were calculated using the box counting method. Using these fractal dimensions the nature of webs are studied.

Keywords- *web knitting, drugs fractal dimensions*

I. INTRODUCTION

The study of irregular shapes their self-similarity and randomness are studied by the scientists. The formation of such patterns, parameters affecting the shapes are necessary to study. Such studies provide a bridge for Euclidean geometry to fractal geometry. The process giving rise to fractal shapes is generally complex and always open for further studies, hence the mathematics of shapes formation like power law, fractal dimensions and mathematics of Laplacian growth are necessary to study [1]

Many fractals are generated due to aggregation of the small particles. In the random walk particles cluse towards growing cluster and becomes the part of cluster, such a process is introduced by Witten and Sander and is named as diffusion limited aggregation (DLA) phenomena.[2]

It is an important aspect of the fractal theory . Once the process of pattern formation is known and some irregular and self similar patterns are obtained or mathematically generated the dimensions of those patterns can be calculated and the pattern can be placed it in the category of a fractals or a non fractal [3]. For the curves and complex surfaces ordinary measurements becomes meaning less. If you look up the length of the border between Spain and Portugal has two very different measurements, an encyclopedia in Spain claims 616 miles while a Portuguese quotes 758 mile which one is right? However there is a way to measure the degree of complexity by evaluating how fast the length or surface or volume increases, if we measure with respect to the smaller and smaller scales. Basic idea is to select the scale for measurement. There is a law which relates the surface or length or volume with scale, known as power law. Which is very helpful in the measurement of dimensions[4]. Calculation of dimensions of such surfaces was a major problem before mathematics in the early decades of the past century. Since then the situation has become some what worse because mathematicians have come up with some ten different notions of dimensions[5]. here we will discuss some of these methods of calculating dimensions, which are special forms of Mandelbrot's fractal dimensions

Dr. Rafiq Zakaria College for Women
Aurangabad

Department of Physics
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

PREDICTION OF GENDER USING STATISTICAL ANALYSIS TECHNIQUES OF FEMUR PARAMETERS: REVIEW PAPER

Mohammad Naeemullah[1] and Dr. S. Q. Chishti[2]
Research Scholar[1] and Associate Professor[2], Department of Computer Science, Dr. Rafiq Zakaria College for Women, Aurangabad

ABSTRACT
The study is for the detection of gender from the femur bone of skeletal. The proposed system is being designed to use all the parameters related with the femur bone and detect the gender to which it belong. Different rules are required to be made for the detection and these rules are mined and applied on the values of parameters of the found femur bone for the determination of gender. The paper gives an idea regarding the concept.

Keyword: Femur Bone, Data Mining, Variables, Gender, Skeletal

1. INTRODUCTION

One of the most common and critical problem faced by Anatomists is establishing the identity of a person from decomposed body or only skeletal remains of a deceased. This may be needed either by the law enforcement agency in some medico-legal case, or by Anthropologists to establish the identity of a person.

In achieving this objective there are a number of factors to establish, the important being.

a. The age at the time of death

b. Sex

c. Race or Nationality

Stanfield's postulation of evolutionary biology (1977) says that "the genotypic (phynotypic) variance is inversely proportional to the intensity of establishing selection".

This explains the differences in morphology of adult males and females Morphological features of bones also depend on nutrition, occuptation, race, & climate or geography of the region. The most reliable tools is confirming the identification in such cases is the dental pattern, next comes the bones, since tooth are the last to decay & second last are the bones. In our country dental records of all individuals are not kept as matter of practice, so we have to depend on bony remnants besides circumstantial evidences, to establish the ages and sex of a person.

Among bones skull & pelvis are the most reliable tools in the identification of age and sex of a person. The various methods used by these workers include.

I. Morphological or traditional non metrical methods like identification points etc.

II. Metrical methods which include

a. **Pearson' univariate analysis**

b. **Demarketing points**

c. **Use of various indices on the basis of significant measurements.**

d. **Fischer's multivariate Analysis (1939)**

It is quite clear that less the skeletal remain available more difficult is the work of an expert. A number of times law enforcement agencies come up with very few bones or even a single bone. It is necessary therefore, to do extensive work on all individual bones which will help in establishing the sex, age and race of the deceased and hence the identity.

19-20

OUR HERITAGE

ISSN: 0474-9030/Vol-68, Special Issue-38

ONE DAY NATIONAL CONFERENCE ON RECENT ADVANCES IN SCIENCES

Held on: 13th February 2020

Organized by: Department of PHYSICS, CHEMISTRY, MATHEMATICS, BOTANY & ZOOLOGY Shivaji Arts, Commerce and Science College Kannad, Dist. Aurangabad (MS)

Dielectrical Analysis of Agricultural Soil of Marathwada Region at J-Band Microwave Frequency

Dr. Rafiq Zakaria College for Women * Aurangabad *

Quadri F. B.[1], Sangita Shinde[2]

1 Department of Physics, Dr. Rafiq Zakaria College for Women, Aurangabad

2 Department of Physics, Pratishthan Mahavidyalaya, Paithan Aurangabad, M.S. India

Correspondence author: firdose_q@rediffmail.com

Abstract:

The topmost surface of the earth is covered by the complex material soil. The material under test is the soil that has been collected from fertile lands of Marathwada region. The soil samples were completely dried in an oven for few hours at 110°C. Electrical analysis of the soil was carried out by using J band microwave frequency of 7.1 GHz using infinite sample technique. Dielectrical parameters like dielectric constant, dielectric loss, ac conductivity, relaxation time and tangent loss are determined for the black soil.

Keywords: Electromagnetic waves, J-band, dielectric constant, dielectric loss, infinite sample method, microwaves.

Introduction: Interaction of electromagnetic waves with matter yields new inventions hence it is a vital tool to explore the properties of matter. This aspect has been utilized by the researchers all over the world to study the structural and chemical properties of matter. Study of dielectrical parameters of materials has widen the scope for novel materials that can be used as dielectrical materials in capacitors and also as sensors. Another important application is in remote sensing. Remote sensing is one such technique in which microwaves are used to sense the remote areas

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Mavkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2019-20

ISSN 2277 - 7539 (Print)
Impact Factor - 5.631 (SJIF)

Excel's International Journal of Social Science & Humanities

An International Peer Reviewed Journal

January - 2020
Vol. I No. 13

EXCEL PUBLICATION HOUSE
AURANGABAD

Dr. KUSUM RANA
HEAD
Dept. of Hindi
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad.

डॉ.सुनिता भीमराव राठोड
वैश्विकरण और अनुवाद 42
प्रा.डॉ. सैराज अन्वर तडवी
जनसंचार माध्यम और अनुवाद 45
प्रा. उमेश बेलंके
वैज्ञानिक और तकनीकी क्षेत्र में अनुवाद की समस्याएं 48
डॉ. इसपाक अली.
मराठी भाषा से अनूदित दलित आत्मकथा : उचक्का 51
डॉ. वरशिळ रामेश्वर
हिंदी नवजागरण और अनुवाद 54
डॉ. योगेष विठ्ठल दाणे
काव्यानुवाद 57
प्रा.डॉ. सांगोळे शिवाजी
'रोजगार निर्माण में अनुवाद का योगदान' 61
डॉ.शेख शहेनाज अहेमद
अनुदित साहित्य - 'आत्मकथा के संबंध में' 64
प्रा.डॉ. कुसुम राणा
हिंदीभाषा एवं साहित्य में अनुवाद का महत्व 67
डॉ.सानप शाम बबनराव
आर.यू. आर नाटक में विज्ञानवाद 70
प्रा. डॉ. चांदणी लक्ष्मण पंचांगे
अनुवाद और संचार माध्यम 73
प्रा.डॉ. जयश्री वाडेकर
नारी शोषण की बेबाक अभिव्यक्ति जीवन हमारा
(जिणं आमुचं आत्मकथा के विशेष संदर्भ में) 77
डॉ. राजश्री दगडू भामरे
अनुवाद का स्वरुप एवं मराठी से हिंदी में अनूदित साहित्य 81
प्रा.संतोष संभाजीराव जगताप

Dr. KUSUM RANA
HEAD
Dept. of Hindi
Dr. Rafiq Zakaria College for Women
Navidsanda, Aurangabad.

पीपल्स एज्युकेशन सोसायटी (मुंबई) के

अमृत महोत्सव के उपलक्ष्यपर

मिलिंद कला महाविद्यालय

नागसेनवन, औरंगाबाद.

MILIND COLLEGE OF ARTS

बहुजन हिताय, बहुजन सुखाय

PEOPLE'S EDUCATION SOCIETY

"हिन्दी भाषा और अनुवाद कला"

दि.२० जानेवारी २०२०

प्रमाणपत्र

यह प्रमाणित किया जाता है की, प्रा./डॉ./~~श्री./श्रीमती/कुमारी~~, कुसुम राणा

महाविद्यालय

इन्होने हिंदी विभाग, मिलिंद कला महाविद्यालय, औरंगाबाद में एक दिवसीय राष्ट्रीय संगोष्ठी में सहभाग लेकर 'अनुदित साहित्य-'आत्मकथा के संबंध में' इस विषयावर पेपर प्रस्तुत किया.

प्रा. शारदा बाचलकर
हिन्दी विभाग प्रमुख
मिलिंद कला महाविद्यालय,
औरंगाबाद.

डॉ. वैशाली प्रधान
प्राचार्या तथा अध्यक्ष
संयोजन समिति
मिलिंद कला महाविद्यालय, औरंगाबाद.

Dr. KUSUM RANA
HEAD
Dept. of Hindi
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad.

Dr. Rafiq Zakaria College For Women

• Impact Factor – 6.625 • Special Issue - 214 (A)
• January 2020 • ISSN – 2348-7143

INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S
RESEARCH JOURNEY
Multidisciplinary International E-Research Journal
PEER REFREED AND INDEXED JOURNAL

हिंदी साहित्य और हाशिए का समाज

- कार्यकारी संपादक -
डॉ. जिजाबराव पाटील

- अतिथि संपादक -
डॉ. बी. एन. पाटील

- मुख्य संपादक -
डॉ. धनराज धनगर

PRASHANT PUBLICATIONS, JALGAON

Dr. KUSUMBAN
HEAD
Dept. of Hindi

For Details Visit To : www.researchjourney.net

ISSN : 2348-7143
Jan. 2020

– अनुक्रमणिका –

- हामोदर मोरे की 'वे मलमुखी है' कविता में हाशिए का समाज ४
  प्राचार्य डॉ. कृष्णा पोतदार
- 'दोहरा अभिशाप' उपन्यास में हाशिए का समाज ६
  प्रा. डॉ. गजानन चव्हाण
- यमदीप : समाज की मान्यता और परंपरा की दलदल में अपने वजूद के लिए संघर्ष करता किन्नर समाज ९
  डॉ. सुरेश ताम्बडे
- 'अन्या से अनन्या' में चित्रित निर्भीक सक्षम नारी ११
  डॉ. कामिनी तिवारी
- कृष्णा सोबती लिखित 'ए लड़की' में अभिव्यक्त नारी चेतना १४
  डॉ. चंद्रमादेवी पाटील
- नारी दशा का चित्रण – उपन्यास 'कोहरे में कैद रंग' १६
  डॉ. आर. के. जाधव
- तीसरी ताली का सच १८
  प्र. प्राचार्य डॉ. बी. आर. बोडके
- नाटक साहित्य और हाशिए का समाज – स्त्री विमर्श २४
  डॉ. संजय कुमार शर्मा
- तत्वमसि... एक अनोखी खोज २७
  डॉ. जयश्री एस. गावीत
- इस्मत चुगताई की कहानियों में नारी विमर्श २९
  प्रा. डॉ. सुनील एस. पाटील
- हिंदी दलित साहित्य में नारी ३२
  डॉ. विजय एकनाथ सोनजे
- जनजातीय आहों–कराहों की दास्तान : धरती–आबा ३५
  डॉ. नानासाहेब डॉ. गायकवाड 'संगीत'
- वर्तमान परिप्रेक्ष्य में 'बाल विमर्श' की जरूरत और हम ३८
  डॉ. दिपक (कला) विश्वासराव पाटील
- समकालीन हिंदी गज़लों में नारी विमर्श ४०
  प्रा. डॉ. राजेश भामरे
- प्रीत के अस्तित्व का संघर्ष ४२
  प्रा. डॉ. कुसुम राना
- आधुनिक हिंदी कविता में दलित विमर्श ४५
  डॉ. श्यामप्रकाश आ. पांडे
- वृद्ध विमर्श और 'रेहन पर रग्घू' ४८
  प्रा. दादासाहेब खांडेकर
- पिंजरे में पन्ना उपन्यास में नारी विमर्श ५०
  प्रा. डॉ. अशोक दौलत ताम्बडे
- 'धरती आबा' नाटक में आदिवासी विमर्श ५२
  प्रा. डॉ. प्रमोद एम. चौधरी
- राष्ट्रकवि बृजेश सिंह की ग़ज़लों में अभिव्यक्त हाशिए का समाज ५४
  प्रा. डॉ. अनिता पोपटराव मेरे, प्रा. रविंद्र पुंजाराम ठाकरे
- अनामिका के कविताओं में अभिव्यक्त नारी विमर्श ५८
  डॉ. राहुल सुरेश भदाणे

Printed by PRASHANT PUBLICATIONS

Dr. KUSUM RANA
HEAD
Dept. of Hindi
Dr. Bindu Zalmela College for W...
Navi Mumbai, Maharashtra

पाचोरा तालुका सहकारी शिक्षण संस्था व्दारा संचालित

श्री. शेठ मुरलीधरजी मानसिंगका साहित्य,
विज्ञान एवं वाणिज्य महाविद्यालय पाचोरा, जि.जलगाँव

हिन्दी विभाग

एवं

महाराष्ट्र हिन्दी परिषद

के तत्वावधान में द्वि-दिवसीय

राष्ट्रीय संगोष्ठी एवं महाराष्ट्र हिन्दी परिषद का २७ वाँ अधिवेशन

हिन्दी साहित्य और हाशिए का समाज

प्रमाणपत्र

प्रमाणित किया जाता है कि,

श्री/सुश्री/प्रा./डॉ. कुसुम राणा.

महाविद्यालय डॉ. रफिक झकेरिया कॉलेज फॉर वुमेन नवखंडा, औरंगाबाद.

इन्हें श्री. शेठ मुरलीधरजी मानसिंगका साहित्य, विज्ञान एवं वाणिज्य महाविद्यालय पाचोरा,जि.जलगाँव हिन्दी विभाग तथा महाराष्ट्र हिन्दी परिषद के तत्वावधान में दिनांक १० एवं ११ जनवरी २०२० के दौरान महाराष्ट्र हिन्दी परिषद के २७ वें अधिवेशन के अवसरपर ' **हिन्दी साहित्य और हाशिए का समाज** ' इस विषय पर आयोजित द्वि-दिवसीय राष्ट्रीय संगोष्ठी में प्रमुख अतिथि/बीजभाषक/सत्राध्यक्ष/विषय प्रवर्तक/आलेख प्रस्तोता/प्रतिभागी के रुप में सम्मिलित होने के उपलक्ष्य में यह प्रमाण-पत्र सहर्ष प्रदान किया जाता है।

शोधालेख का शीर्षक : प्रीत के अस्तित्व का संघर्ष

डॉ. गजानन चव्हाण	डॉ. मधुकर खराटे	डॉ. जिजाबराव पाटील	प्राचार्य डॉ.बी.एन.पाटील
महासचिव	अध्यक्ष	संयोजक	कार्याध्यक्ष

महाराष्ट्र हिन्दी परिषद

राष्ट्रीय हिन्दी संगोष्ठी एवं महाराष्ट्र हिन्दी परिषद का २७ वाँ अधिवेशन

Dr. KUSUM RANA
HEAD
Dept. of Hindi
Dr. Rafiq Zakaria College for Women

2018-2019

NTERNATIONAL JOURNAL OF RESEARCH CULTURE SOCIETY
ionthly, Peer-Reviewed, Refereed, Indexed Journal
ISSN: 2456-6683
Impact Factor: 4.526
Volume - 2, Issue - 11, Nov – 2018
Publication Date: 30/11/2018

Gas Chromatography- Mass Spectroscopic Analysis of Oil Extracted From Freshwater Edible Magur Fish (*Clarias Batrachus*) From Marathwada Region

Vishal Ladniya [1], Mohammad Moaviyah Moghal [1], Mazahar Farooqui [2], Vidya Pradhan [2]
[1] Maulana Azad College of Arts, Science & Commerce, Aurangabad, Maharashtra, India
[2] Dr. Rafiq Zakaria College for Women, Navkhanda, Aurangabad, Maharashtra, India
Email - vidyaspradhan7@gmail.com

Dr. Rafiq Zakaria College for Women Aurangabad

Abstract: *Gas Chromatography Mass Spectrometry (GC-MS) is only one of its kind method for the study and measuring quantity of organic volatile and semi-volatile compounds. Gas chromatography is utilized to separates mixtures into individual components employing a temperature-controlled capillary column. Mass spectrometry is applied to recognize a variety of components from their mass spectra. In the present study volatile/ semi-volatile compounds present in Oil extracted from Magur Fish (Clarias Batrachus) are analyzed. Magur Fish oil is extracted by Supercritical fluid extraction method and then analyzed by Gas Chromatography / Mass Spectrometry (GC/MS). A total of 30 compounds are found and quantified in this study.*

Key Words: *Gas Chromatography / Mass Spectrometry, Fish Oil, Magur Fish, (Clarias Batrachus).*

INTRODUCTION:

The Asian catfish Clarias batrachus is an air-breathing indigenous catfish, in India it is popularly known as agur fish [1].In india Magur fish is commonly found in fresh water and brackish waters. It is a commercially important India, Bangladesh, Thailand, Philippines, Myanmar and China because of its good taste, high protein amount and on content. It also has therapeutic application [2].

Sinha M *et al* conducted comprehensive study of breeding and larval rearing of C. batrachus with some nprovised modifications for production of magur seed in large scale at farm level in respect of brood fish management, rval feeding, water quality management and disease prevention [1]. Kishore Dhara and Nimai Chandra Saha conducted udy on Controlled Breeding of Asian Catfish Clarias batrachus using Pituitary Gland Extracts and Ovaprim at different mperatures, Latency Periods and their Early Development [2]. S. P. Singh *et al* performed experimental work in order find out the effect of water temperature on physiological responses of Asian catfish clarias Batrachus [3]. K. Taslima F. Ahmed conducted study on seed production technique of indigenous magur (clarias Batrachus), Shing leteropneustes fossilis) and Pabda (Ompok Pabda) through induced breeding [4]. T. Asha *et al* performed study on " eld trials on culture of clarias batrachus[5]. Nimmy Jousy *et al* performed investigational work in order to find out enetic Variation in the Natural Populations of Clarias batrachus from India Using Microsatellite Markers [6] in recent nes, we used supercritical fluid extraction technology in order to extract compounds from various biological material ch as plants and animals, performed GC-MS analysis of oil extracted for fresh water crab and also analyzed fatty acid mposition of some animals [7-13].

MATERIAL AND METHOD:

The Magur Fish (*Clarias Batrachus*) is purchased from local market, at Aurangabad District (Maharashtra) dia. The Magur Fish meat is dried in oven for 8 hours at 50 °C. After proper drying, the dried Magur Fish meat is bjected to supercritical fluid extraction process in order to obtain Magur Fish oil. Extraction is performed using SFC -tex, Japan) instrument. Carbon dioxide is used as supercritical fluid; Hexane is used as a modifier (co-solvent). traction is performed at constant flow rate, Constant temperature and constant pressure. Extraction Conditions: flow e ofsupercritical carbon dioxide = 1 ml/min, flow rate of hexane = 1 ml/min, temperature = 40^{0}C and pressure = 25 pa. Extracted oil from the freshwater Magur Fish is used as a sample for gas chromatography/ Mass spectroscopy alysis.

PRINCIPAL
Dr. Rafiq Zakaria College For W
Navkhanda, Juiblee Park,
AURANGABAD. (M.S.)

ble 1: Specification of GC/ MS

Conditions During gas chromatography/ Mass spectroscopy analysis	
un Time(min):	54.09
jection Volume(µl):	1.00
cans:	6439
ow Mass(m/z):	40
igh Mass(m/z):	400

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women

2018-2019

INTERNATIONAL RESEARCH JOURNAL OF PHARMACY
www.irjponline.com
ISSN 2230 – 8407

Research Article

AN EVALUATION OF THE EFFECT OF *HYPHAENE THEBAICA* SAP AGAINST HYDATID CYSTS PROTOSCOLECES *IN VIVO* AND *IN VITRO*

Fadel Y. S. Al-Arabi [1]*, Mansour Abdulnabi H. Mehdi [1], Gozif Mohammed N. Omar [2] and Vidya Pradhan [2]
[1]Department of Zoology Dr. Rafiq Zakaria College for Women, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India
[2]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India
*Corresponding Author Email: Alaraby1100@gmail.com

Dr. Rafiq Zakaria College for Women Aurangabad

Article Received on: 09/11/18 Approved for publication: 09/01/19

DOI:

ABSTRACT

In the present work investigated the effect of the sap of the plant *Hyphaene thebaica* in the vitality of the protoscolices of *Echinococcus granulosus* of sheep origins in vitro and their growth *in vivo*. The results of this study showed that the sap of the *Hyphaene thebaica* stem has fatal effects on the protoscolices of the *Echinococcus granulosus* of sheep origin. The 100% concentration led to complete death of the protoscolices over the time period of 10 min. There were also significant differences among concentrations used at $p < 0.05$. When injecting the laboratory animals with the treated protoscolices they failed to formation secondary hydatid cysts.

Keywords: Hydatid cysts, Echinococcosis, protoscolices, *Hyphaene thebaica*.

INTRODUCTION

Hydatidosis is a very serious healthy and epidemic problem in the countries where it spreads.[1] *E. granulosus* requires dog and other canids as definitive hosts and livestock as an intermediate plete its life cycle.[2] It does not appear early and its symptoms are not clinically clear, but after arriving in an advanced stage and due to its evolution increase in size, it causes pressure on the organ adjacent to its location.[3] It has two developmental stages in its life cycle: the adult tapeworm, which is the sexual stage, and the cystic larval metacestode, which is reproduced asexually.[4] Human beings are accidental intermediate hosts and get infected due to food or water contaminated with feces of dog containing eggs of parasite or with direct contact with dogs.[5] Therefore, the studies in recent years have been directed to investigate many diseases using folk medicine known as a herbal medicine for being effective, safe and economical factors.[6] The significance of this study is to show the effect of the sap of the plant *Hyphaene thebaica* in the vitality of the protoscolices of *Echinococcus granulosus* of sheep origins *in vitro* and their growth *in vivo*.

Hyphaene thebaica has local names such as (doum) in Arabic ; (gingerbread palm) in English, and (palmier doum) in French. *Hyphaene thebaica* belongs to the family of Arecaceae, which is a deciduous palm of 10-17 m height, with a girth of 90 cm. The trunk is Y-shaped, and the tree is easily recognizable by the dichotomy of its stem forming up to 16 crowns.[7] *Hyphaene thebaica* is one of the 11 species of the genus found in Africa. Widespread in the Sahel, it grows from Mauritania to Egypt, from Senegal to Central Africa and east to Tanzania. In Egypt, the doum palm has been cultivated since ancient times and has long been considered a sacred tree, symbolizing masculine strength. It was also planted in the belief that it protects and supplies people with shade, water and food after their death.[8] In medicine, its roots are used in the treatment of bilharzia.[7] The fruit pulp extract is also used in the treatment of bleeding especially after childbirth.[9] It is also used as a treatment to lower blood pressure.[10] The anti-cancer, antioxidant and antimicrobial activities of the fruit pulp has also been well documented.[11, 12]

MATERIALS AND METHODS

Plant source

The plant sap of *Hyphaene thebaica* was obtained from Al-Haswa Area, Aden-Yemen.

Preparation of plant sap

The first stage is to peel the scales that grow in the stem of the tree softly so that it becomes free of the leaves and scale. Then, a highly accurate stage comes which is amputation of a specific part of the tree's neck to separate its head from the rest of the trunk. After that, the most dangerous step comes on the life of the tree which is the digging of a hole on the neck(the heart) where a light layer is peeled superficially to the level that let the transparent liquid (Taari) come out without causing death to the tree. In the above-mentioned stages, various kinds of knives are used, and a natural tongue made of a piece of light plastic is set up away from the heart bark to regulate the flow of the liquid and maintain it without loss and leakage out of the box that is placed in the lowest neck. This process of (peeling and collecting liquid sap) is repeated three to four times per day in the early morning, in the afternoon and then in the middle of the night.

This fluid is called in its fresh state (Taari) and is characterized by sugar taste and smell similar to the smell of palm fluid of coconut "Nargil", and is used for the treatment of some types of worms that infect human intestines.

This liquid is collected in clean containers for the maximum of 40 days until it becomes mature vinegar. Before its 40 days age, this sap is characterized as a narcotic substance that affects humans' mind. If this liquid is exposed to a simple degree of air pollution

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-2019

INTERNATIONAL RESEARCH JOURNAL OF PHARMACY
www.irjponline.com
ISSN 2230 – 8407

Research Article

THE EFFECT OF *ALOE VERA* EXTRACTS ON THE VIABILITY OF *ECHINOCOCCUS GRANULOSUS* PROTOSCOLICES

Fadel Y. Al-Arabi *, Mansour Abdulnabi H. Mehdi, Mazahar Farooqui, Vidya Pradhan
Department of Zoology Dr. Rafiq Zakaria College for Women, Aurangabad 431001, India
*Corresponding Author Email: alaraby1100@gmail.com

Dr. Rafiq Zakaria College for Women * Aurangabad

Article Received on: 06/02/19 Approved for publication: 14/03/19

DOI:

ABSTRACT

The study included the preparation of alcohol and aqueous extracts of *Aloe Vera* leaves at concentrations 50-75-100 mg / ml to study the effect of the viability protoscolices of the parasitic *Echinococcus granolosus* in *vitro* and their growth in *vitro* in order to reach an effective focus in killing the protoscolices during the shortest period of time. The results showed a significant decrease in the treatment of the alcoholic and aqueous extracts *Aloe Vera* leaves. Total killings for protoscolices at 100 mg / ml at 24 hours followed by concentration 75 and 50 mg / ml at 48 hours exposure period.

Keywords: *Echinococcus granulosus*, Protoscolices, Extracts, *Aloe vera*.

INTRODUCTION

Hydatid cyst disease is parasitic disease common in humans and ruminants and is a health and economic problem in most parts of the world.[1] Hydatidosis is particularly prevalent in rural areas where cattle, especially sheep and dogs, are abundant. The parasite needs to complete its life cycle to a host of sheep, goats, camels, pigs, horses, donkeys, monkeys and other animals of the platoon to survive alive. [2] It is a parasitic disease which transmitted from carnivores to humans and animals, Herbivorous [3], cause the larval stage of *Echinococcus granulosus* parasite the disease, which belongs to the Platyhelminthes phylum of the Cestoda species infect the small intestine of the carnivorous. [4]

The Hydatid cyst has also posed a serious health problem for human life, and the disadvantage is the disease does not appear clearly until after the development of infection and increase the size of the cyst. [5] There are no definitive cure for this disease so far and surgery is considered the best way to treat and it is difficult to work in some cases because of the location of the cyst, as that the substances that are used to kill protoscolices during surgery having side effects, therefore studies in recent years have directed to many diseases using the folk Medicine known as a herbal medicine for effective, safe and economical. [6] Medicinal plants are better than medicines for two reasons. The first is that plants are considered as a repository of medicines that can be tested on humans without any side effects and the second is its availability in large quantities in most countries of the world.[7] The importance of this study to show the effect of the extract of alcoholic and aqueous of the leaves of the plant *Aloe vera* in the vitality of the protoscolices of *Echinococcus granulosus* of sheep origins *in vitro* and their growth *in* vivo.

The plant *Aloe vera* has a history back to the old time which belongs to the family Liliaceae .[8] *Aloe vera*, a semi-tropical plant is one of the 400 species of *Aloe* .[9] *Aloe vera* has been used for medicinal aims in several applications for millennia: India, Egypt, Greece, Mexico, Japan, and China, It is utilized in functional foods especially for the preparation of health drinks with no laxative effects. It is also used in other food products including milk, ice cream, confectionery, etc. *Aloe vera* gel is also used as flavoring component and preservative in some foods .[10]*Aloe vera* is being generally used in herbal medicine as an antiviral, antibacterial, antifungal, and anti-inflammatory agent. Its ant diabetic effect in rats is also reported is also used as a treatment for many skin diseases; Looking at its large medicinal outcomes .[11]

MATERIALS AND METHODS

Plant source

The leaves of the plant under study were obtained from the campus of Dr Rafiq Zakaria college for women of is authenticated.

Preparation of plant extracts

Aqueous extract

Adapted method has been followed .[12] The aqueous extract of the leaves of *Aloe vera* plant was prepared by weighting 40 g of leaves powder and 400ml of distilled water .The mixture was stirred by magnetic stirrer for 24 hours. Then the mixture was filtered through four pieces of medical gauze and poured into the centrifuge tubes at speed of 3000 rpm for 10 minute. After that mixture was put in Petri dishes and placed in oven at 40 C° to dry .Finally the extract was scraped and collected in clean glass vials and kept in refrigerator for use.

Alcoholic extract

Alcoholic extract was prepare by using Soxhlet apparatus 40gm of the plant leaves powder was taken and placed in the apparatus. Then 400 ml ethyl alcohol concentration of 70%,was added. It was left undisturbed. The solvent was evaporative by rotary evaporative. The mixture was finally placed in clean Petri dishes as the aqueous extract.

Dr. Ayesha Qureshi
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda , Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2014-2019

The Pharma Innovation Journal 2018; 7(11): 22-26

www.ThePharmaJournal.com

The Pharma Innovation



Dr. Rafiq Zakaria College for Women Aurangabad

ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.03
TPI 2018; 7(11): 22-26
© 2018 TPI
www.thepharmajournal.com
Received: 13-09-2018
Accepted: 15-10-2018

Fadel YS Al-Arabi
Dr. Rafiq Zakaria College for Women, Aurangabad, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India

Gozif Mohammed N Omar
Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India

Mansour Abdulnabi H Mahdi
Dr. Rafiq Zakaria College for Women, Aurangabad, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India

Vidya Pradhan
Dr. Rafiq Zakaria College for Women, Aurangabad, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Correspondence
Fadel YS Al-Arabi
Dr. Rafiq Zakaria College for Women, Aurangabad, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India

The effect of *tamarindus indica* extracts on larval stage of *Echinococcus granulosus* parasite *in vivo* and *in vitro* study

Fadel YS Al-Arabi, Gozif Mohammed N Omar, Mansour Abdulnabi H Mahdi and Vidya Pradhan

Abstract
It is known that medicinal plants are the most important alternative to chemical drug resources, especially for antimicrobial and parasite targets and the treatment of various diseases. The present study aimed at determining the effect of aqueous and alcohol extracts of the leaves of the *Tamarindus indica* plant on the vitality of the protoscolices of sheep *in vitro*. The results study show that alcohol and aqueous extract solutions used had an inhibitory effect on protoscolices compared with control group over all concentration range. The percentage of homicide was measured by using the eosin stain test, which depends on changing the green color of the alive protoscolices to red after killing it. The study revealed that the concentration of 100 mg / ml was the optimal focus for killing the protoscolices after 4 hours of exposure. It was observed that when laboratory animals were injected with the protoscolices treated with the extracts, the protoscolices failed in the formation of secondary hydatid cysts.

Keywords: Hydatidosis, *Echinococcus granulosus*, protoscolices, *Tamarindus indica*

Introduction

Cystic echinococcosis or hydatidosis is a silent cyclozoonotic infection of humans and domestic animals produced by the larvae of the cestode *Echinococcus granulosus* [1]. The larval stage of granulosus parasite is the cause of the disease, which belongs to the Platyhelminthes phylum of the Cestoda species infect the small intestine of the carnivorous [2]. Hydatid cyst spreads throughout most of the world, especially in areas where sheep are found in high rate and is endemic in Asia, North Africa, South and Central Americas, North America, Canada, and the Mediterranean region. In many countries, hydatid disease is more prevalent in rural areas where there is close contact between people, dogs, and various domestic animals which act as intermediate hosts [3].

Therefore the studies in recent years have been directed towards investigating many diseases using the folk medicine known as a herbal medicine for its effective, safe and economic factors [4].

The importance of this study is to show the effect of the alcohol and aqueous extract of the leaves of the plant *T. indica* in the vitality of the protoscolices of *Echinococcus granulosus* of sheep origins *in vitro* and their growth *in vivo*. There is a growing interest of research on medicinal plants due to their potential to cure many diseases, because of low prices and lower incidence of side effects when compared to synthetic drugs [5].

T. indica which belongs to the family Leguminosae (Fabaceae), commonly known as Tamarind tree, is one of the fruit tree species that is used as traditional medicine. Tamarind tree is found especially in the Indian subcontinent, Africa, Nigeria, Bangladesh, Pakistan, and most of the tropical countries. It is preferred to be used for diarrhoea, abdominal pain, and dysentery, some bacterial infections and parasitic infestations, constipation, wound healing, and inflammation. It is a rich source of most of the essential amino acids and phytochemicals, and hence the plant is reported to possess antidiabetic, antimicrobial, antivenomic, antioxidant, antimalarial, cardio protective, hepatoprotective, antiasthmatic, laxative and anti-hyperlipidemic activity. *T. indica* has ameliorative effects on many diseases. It can also be favoured as a nutrient addition for malnourished patients as it is cheap and easy to access [6].

T. indica is a plant that can be used traditionally in wound healing, snake bite, colds, helminth infections, and fever. It may also play a role as antimicrobial, antidiabetic, antiinflammatory and effects on the control of satiety, playing a potential role in the treatment or prevention of

Research Article

Effect of *Tamarindus indica* extracts on haematological parameters in albino rats infected with *Entamoeba histolytica* parasite

Mansour Abdulnabi H. Mehdi[a*], Fadel Y. S. Alarabi[a], Gozif Mohammed N. Omar[b], Vidya Pradhan[a*]

[a]*Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.*

[b]*Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431001, India.*

Rafiq Zakaria College for Women Aurangabad

Received: 1 February 2019 Revised: 19 March 2019 Accepted: 23 March 2019

Abstract

Objective: The study aimed to investigate the effect of *Tamarindus indica* extracts on hematological parameters in rats infected with *Entamoeba histolytica* parasite which causes Amoebic dysentery disease. **Material and Methods:** A total of 12 albino rats were grouped into 4 groups of 3 rats each. Group 1 of rats serve as negative control group, while group 2, 3 and 4 were treated with metronidazole drug, ethanolic extract and aqueous extract respectively, at concentration 500mg/kg for 10 days, the blood parameters were evaluated hemoglobin (HG), hematocrit (HCT), red blood cell count (RBC), mean platelet volume (MPV), mean cell volume (MCV), mean corpuscular haemoglobin (MCH), red cell distribution width (RDW), procalcitonin test (PCT), total white blood cell platelet distribution width (PDW), mean corpuscular haemoglobin concentration (MCHC), total white blood cell (TWBC), lymphocyte (LY), monocyte (MO) and mixed cells of neutrophile, eosinophile and basophile in the rats blood, using haematology auto-analyser system (CBC Mindray BC-3000Plus). **Results:** Show a significant increase at P≤0.05 in HG, HCT, RBC, MPV, MCV, MCH, RDW, PCT, TWBC, LY and mixed cells of neutrophile, eosinophile and basophile when compare with metronidazole drug and the control group of rats during treatment stages. The results also indicate a significant decrease at P≤0.05 in PDW, MCHC and MO compared to the control group of rats. **Conclusion:** Based on the results of this study, the present data suggest that the efficiency of *T. indica* extracts in improving blood standards through variations occurring in blood proportion.

Keywords: *Tamarindus indica, Entamoeba histolytica,* haematological parameters

Introduction

Entamoeba histolytica is an intestinal protozoan parasite. It is the second leading cause of death in humans after malaria (Tachibana et al., 2004; Al-Warid et al., 2013). The World Health Organization (WHO) estimates that the *E. histolytica* parasite causes approximately 50 million cases of dysentery and 100,000 deaths per year (Ravdin et al., 2005). Amoebiasis is spreading worldwide and represents a serious health threat in tropical and subtropical developing regions and in the industrialized countries (Al-Warid et al., 2013). These high rates of mortality are due to several factors including ignorance, poverty, overcrowding, sewage contaminated drinking water and low maintenance of public health. These factors facilitate the transmission of infection from person to person (Allason-Jones et al., 1986).

Tamarindus indica is a plant belonging to the Fabaceae family (Wagh and Bhagure, 2012). This plant is cultivated in large quantities in different regions of India (Zohrameena et al., 2017). The extracts have received considerable attention for their potential therapeutic properties for many diseases. These include antiparasitic (Bhadoriya et al., 2011; Ahmed and Ayoub 2015), Antifungal (Satpute and Vanmare, 2017) antimicrobial (Abubakar, 2016). It has also been used as a folk remedy to treat various ailments such as abdominal pain, laxative, fever, wound healing, dysentery, and chronic diarrhoea exhaustion (Havinga et al., 2010). The study aimed to investigate the effect of *T. indica* extracts on haematological changes in rats infected by *E. histolytica* parasite.

Materials and methods

Plant sample

Leaves of *T. indica* were collected from the campus of Dr.

Address for Corresponding Author:
Mansour Abdulnabi H. Mehdi
Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.
Email: mansourabdulnabi@gmail.com; drvidyasp@gmail.com

DOI: https://doi.org/10.31024/ajpp.2019.5.5.5

2455-2674/Copyright © 2019, N.S. Memorial Scientific Research and Education Society. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-19

http:// www.klibjlis.com

eISSN No. 2394-2479

SCIENTOMETRIC ANALYSIS COMPUTER MEDIATED ONLINE JOURNAL

Dr. Siddiqui Eraj Azeeza * **Kharat Pooja Prakash****

Librarian ★ Dr. Rafiq Zakaria College for Women ★ Aurangabad

* **Librarian**
Dr. Rafiq Zakeria College of Woman
Aurangabad, Maharashtra, India

* **Research Scholar**
DLIS,
Dr. Babasaheb Ambedkar Marathwada University,
Aurangabad, Maharashtra, India

QR Code

Abstract: - *The present study attempts on the Scientometric analysis of Journal Computer Mediated Communication. It is based on the references appended to International Journal of "Computer Mediated Communication" during 2004-2008. The present study is based on 5 volumes, 20 issues of the Journal of computer Mediated Communication. It was found that journals citations are more in number than the other citations.*

Keywords: Scientometric, Computer Mediated Communication, Authorship pattern

INTRODUCTION:-

Scientometrics is the science of measuring and analyzing science. In practice, scientometrics is often done using bibliometrics which is a measurement of the impact of (scientific) publications. Scientometrics is the study of measuring and analyzing science, technology and innovation. Major research issues include the measurement of impact, reference sets of articlesto investigate the impact of journals and institutes, understanding of scientific citations, mapping scientific fields and the production of indicators for use in policy and management contexts. In practice there is a significant overlap between scientometric and other scientific fields such as bibliometric, information systems, information science and science of science policy.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. (Mrs.) SIDDIQUI ERAJ AZEEZA
M.Lib.Sc. Ph.D.

Dr. Rafiq ... Women
Navkhanda, Jubilee Park, Aurangabad

528

eISSN No. 2394-2479

HISTORY OF LIBRARY SCIENCE EDUCATION

Dr Siddiqui Eraj Azeeza*

* **Librarian**
Dr. Rafiq Zakaria College for Women
Aurangabad
Maharashtra, India.

QR Code

History of Library Science Education in India

Baroda School:

Library Education began in India in the second decade of 20th century with the starting of a library school in the Baroda State in 1911. Baroda State not only provided instance of library movement in the country but it was here that dawn of library education appeared. Raja Sayaji Rao Gaikwad was interested in the educational progress of his state. He was impressed with the splendid work done by public libraries in the West with a view to developing a library system in his state, he requisitioned the services of an American Librarian, Mr. William Borden as the Director of the State Library Department.

1911 began with a series of library classes, which would fit Library staff for the routine tasks of librarianship. Borden had been a student of Melvil Dewey, and the system of library training, which he introduced into India, had many of the hallmarks of the Columbia library school. It was established in a university and it has emphasis on fundamental library skills: Library handwriting, book repair, charging systems and the dispatch of over dues, was covered in these early classes.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. (Mrs.) SIDDIQUI ERAJ
B.Sc., B.Ed., M.Lib.Sc., Ph.D.

517

Research Article

Rapid and environmentally benign protocol for the synthesis of pyrazolyl-4-thiazolidinone

Mujahed Shaikh*, Devendra Wagare, Mazahar Farooqui, Ayesha Durrani

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India

Received: 26 December 2018 Revised: 20 January 2019 Accepted: 11 February 2019

Abstract

Objective: The multi-component one-pot approach becomes the need of the research due to its offer advantage like atom economy, minimum reaction time and most important one time workup. Therefore, there is an urgent need to design and developed the efficient and environmentally benign one-pot protocol for the synthesis of pyrazolyl-4-thiazolidinone. **Material and Methods:** Herein, we have developed a facile and convenient one-pot protocol for the synthesis of pyrazolyl-4-thiazolidinone by irradiating the mixture of isonicotinohydrazide, pyrazolyl carbaldehydes and thioglycolic acid (mercaptoacetic acid) in glycerol at 400 watt under microwave irradiator with 70-75°C temperature. The method provides a better alternative for the existing methods as it involves utilization of in-situ-generated imine linkage, avoids the use of toxic volatile organic solvents, easy work-up, reduces the reaction time to obtain excellent yield and most important the reaction is completed with reactant hence we have not use any external concentrated acid to form the imine linkage. **Results:** Use of glycerol gives us higher yield, lesser reaction time and the most important it will enhance the reaction due to it forms hydrogen bonding network. The results obtained with excellent yield. **Conclusion:** This protocol are operationally simple, rapid, 100% atom economy, potential for recycling of the reaction medium, good to excellent yields, no need to separate intermediate precursor and finally agreement with green Chemistry principles, all these aspects make the designed protocol more reliable and attractive and alternative to existing methods.

Keywords: Pyrazole carbaldehyde, glycerol, thioglycolic acid, green, one-pot

Introduction

The drug discovery relies on the interface of chemical and biological diversity and the most spectacular advances in medicinal chemistry have made in the last few years, where the heterocyclic compound played an important role in regulating biological activities and wide range pharmacological properties. The heterocyclic compounds are an evergreen field in the branch of organic chemistry, which attracts to work not only on natural product but also in synthetic chemistry. Schiff bases are versatile C=N (Imine) containing compounds possessing broad spectrum of biological activity and shows antibacterial, antifungal, anti-inflammatory activity antitumor and also, they are giving many biochemical, clinical and pharmacological properties (Gupta et al., 1998; Islooe et al., 2009; Krishnaraj et al., 2008; Balsells et al., 1998; Eswaran et al., 2009; Przybylski et al., 2009). Schiff bases are formed when any primary amine reacts with an aldehyde under specific conditions. It shows the activity like anti-corrosion agent, Medicine, biological and pharmacological activity.

Schiff bases and amides derived from various heterocyclic compounds displayed broad range of biological activities such as anticancer, antiviral, antimicrobial, anticonvulsant, antidepressant, angiotension-II receptor antagonist, and anti-inflammatory and anti-glycation activity. The modifications of the Schiff bases have proven highly effective with improved potency and lesser toxicity. Thiazolidines derivatives shows pharmacological, medicinal and biological applications like antibacterial, (Somwane and Srivastava, 2008; Mistry and Desai, 2004; Sayyed et al., 2006; Kohli et al., 2007; Mulwad and Abid, 2008; Sattigeri et al., 2005) analgesic, (Fraga-Dubreuil and Bazureau, 2003) anticancer, (Prabhaker et al., 2004) anti-inflammatory, (Ottana et al., 2005; Venkatesh and Pandeya, 2009; Vazzana

*Address for Correspondence Author:
Mujahed Shaikh
Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India
Email: shkh_mujahed@rediffmail.com

DOI: http://doi.org/10.31024/ajpp.2019.5.3.21

2455-2674/Copyright © 2019 N.S. Memorial Scientific Research and Education Society. This is an open access article under the CC BY-NC-ND License (http://creativecommons.org/licenses/by-nc-nd/4.0/)

Dr. Rafiq Zakaria College for Women

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2015-2019

J. Biol. Chem. Chron. 2019, 5(1), 91-95
ISSN (Print): 2454 - 7468
ISSN (Online): 2454 - 7476
www.eresearchco.com/jbcc/

Determination of Metal-Ligand Stability Constant of Transition Metal Complexes with Pharmacologically Active Ligand N-[(E)-(2-Nitrophenyl)methylen]isonicotinohydrazid

Zamzam Taher Omar (Al-Abdal)[1], Shivaji L. Jadhav[2] and Megha J. Rai[1*]

[1]Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, MS, INDIA
[2]Tarai College Paithan, Aurangabad - 431001, MS, INDIA

*Correspondence: E-mail: drmegha08@gmail.com & zamzamomar1984@gmail.com

DOI: http://dx.doi.org/10.33980/jbcc.2019.v05i01.015

(Received 27 Feb, 2019; Accepted 11 Apr, 2019; Published 16 Apr, 2019)

Rafiq Zakaria College for Women

ABSTRACT: Proton–ligand association constants of organic ligand N-[(E)-(2-Nitrophenyl) methylen]isonicotinohydrazid with Mn (II), Co (II), Ni (II), Cu (II) and Zn (II) metal ions have been studied by pH-metric technique at 27±1C in 70%(v/v) ethanol – water medium at 1M ($NaClO_4$) ionic strength. Organic ligand was synthesized by condensation of equimolar mixture of Anti-mycobacterial agent with aromatic aldehyde. The reaction progress and purity of organic ligands were confirmed by thin layer chromatography. Formation of organic ligands was confirmed with the help of MP, IR, ^{1}H NMR, ^{13}C NMR and elemental analysis. The stability constants of these binary complexes were evaluated and order of stability constant found as Zn (II) >Ni (II) > Cu (II) > Mn (II) > Co (II).

Keywords: pH-metric technique; Binary complexation; N-[(E)-(2-Nitrophenyl)methylen]isonicotinohydrazid and transition metals.

INTRODUCTION: In the field of coordination chemistry, metal ions carry out spirited roles in biological processes. Schiff bases are now well known for their importance in biological fields such as anticancer, antimocrobial anti-inflammatory, analgesic and pesticidal agents, so schiff bases have a broad variety of applications in different region such as pharmacological activity, organic and inorganic chemistry.[1 & 2] Schiff bases are assignment in coordination chemistry because they easily form stable complexes with most transitional metal ions.[3 & 4] Schiff bases containing an amine group (–RC=N–) are usually formed by the condensation of an initial amine with an active carbonyl.[5 & 6] Isoniazid is a starting point in the search for new vital derivatives and analogues such as hydrazones which have been informed as active anti-tuberculosis drugs, also it is anti-mycobacterial drug and used also primarily as a tuberculostatic.[7-9] The chemistry of Metal-drug coordinatioo compounds is more spread now than before especially in the range of more biologically active drugs.[10-12] The complexes have been studied with the basic Schiff links to be applied in the clinical, biological, analytical and pharmacological fields.[13-16] The complexation of Schiff base with transition metals promote the biological activity.[17-20] PH-metric study is one of the best vastly used technique because it has several distinction such as, it is easy to understand and work, cheap technique etc. A pH meter was used to find the stability constant which is advantageous for the formation of a complex in solution.[21-32] Metal ions are known to affect the action of many drugs.[33] The stability constant of complexes has been found to be greater than zero, if all the possible stability constants for a given system have been determined that means it is possible to calculate the equilibrium activity of complexes.[34]

The stability of metal complexes with medicinal drugs perform greater role in the biological and chemical activity.

Due to these valuable findings observed in literature review and very less work observed on complexation of 2-nitrobenzaldehyde. Present work was planned and well executed for the preparatioo of organic ligands through the condensation of 2-nitrobenzaldehyde with isoniazid. Complexation of newly synthesized organic ligand was carried out with transition metals [Mn(II), Co(II),Ni(II),Cu(II) and Zn(II)] to determine the order of stability constants by using pH-metric technique.

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

ECB

SYNTHESIS AND BIOLOGICAL ACTIVITIES OF NEW TETRAHYDROQUINOLINE AND PYRIMIDINE DERIVATIVES

Pravin N. Chavan,[a] Dattatraya N. Pansare,[b] Shivaji L. Jadhav[c] and Megha J. Rai[d]*

Keywords: Tetrahydroquinoline, pyrimidine, biological activity

A series of new tetrahydroquinoline derivatives (4a-j) were prepared by one-pot multicomponent, [4+2] cycloaddition route from 4-aminonaphthalene, aromatic aldehydes and dihydrofurane (DHF) by using $InCl_3$ catalyst under reflux temperature and also, pyrimidine derivatives (5a-n) were prepared by the same route from benzimidazole, aromatic aldehydes and maleic anhydride by using piperidine catalyst under ultrasonic irradiations. The synthesized tetrahydroquinoline and pyrimidine derivatives were characterized (IR, ^{1}H NMR, ^{13}C NMR). The synthesized tetrahydroquinoline and pyrimidine derivatives have been evaluated for antimicrobial, anti-tuberculosis and anti-inflammatory activities.

* Corresponding Author
Fax: +91 02140 250348
E-Mail: chemistrypn141286@gmail.com
[a] Department of Chemistry, Doshi Vakil College, Goregaon, District-Raigad, (MS), India.
[b] Department of Chemistry, Deogiri College, Station road Aurangabad, (MS), India.
[c] Department of Chemistry, Tarai College, Paithan, Aurangabad, (MS), India.
[d] Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, (MS), India.

INTRODUCTION

Now a day, a huge number of a heterocyclic compound discovered through various eco-friendly methods like one-pot multicomponent reaction, ultrasonic irradiations techaique or Diels-Alder reactions.[1-3] Tetrahydroquinoline and pyrimidine derivatives are broadly used in medicinal chemistry. They showed a huge number of important biological properties such as antimicrobial,[4-7] antimalarial,[8-10]analgesic,[11] anthelmintic,[12] antitumor,[13] anti-inflammatory,[14] antiviral[15-17]and anticancer[18] activity. Keeping the view of the biological importance of heterocyclic compounds,[19] we studied the biological activity of tetrahydroquinoline[20] pyrimidine,[21] thiazolone,[22] and benzenesulfonamide[23] derivatives.

EXPERIMENTAL

The starting materials and various solvents were commercially available (Sigma-Aldrich and Avra labs). Reaction courses were monitored by TLC on silica gel precoated F254 Merck plates. Developed plates were examined with UV lamps (254 nm). Melting points were recorded on SRS Optimelt, melting point apparatus and are uncorrected. IR spectra were recorded on an FT-IR (Bruker). ^{1}H NMR spectra were recorded on a 400 MHz Bruker spectrometer and were recorded in DMSO-d_6 solvent ^{13}C NMR spectra were recorded in DMSO-d_6 solvent on a 100 MHz Bruker spectrometer. Chemical shifts are reported as δ ppm units (TMS).

The following abbreviations are used; singlet (s), doublet (d), triplet (t), quartet (q), multiplet (m) and broad (br). Mass spectra were taken with Micromass-QUATTRO-II of WATER mass spectrometer.

General procedure for synthesis of tetrahydroqolinoline derivatives

In around bottom flask, 4-aminonaphthalene (0.1 mol), aromatic aldehyde (0.1 mol), dihydrofurane (DHF) (0.1 mol) and catalyst - $InCl_3$ (20 mol %) in EtOH as solvent (5 mL) were refluxed at for 7.5. The reaction condition was checked by employing TLC technique, using ethyl acetate: hexane (5:5) as solvents. After completing reaction, reaction mixture was cooled at room temperature. For crystallization, 10 mL methanol was added to the reaction mixture and then cooled at 22 °C, following stirring for 20 minutes. Products were filtered using G_1 sintered crucible. Products were recrystallized from ethyl alcohol.

11-(3,5-Dimethoxyphenyl)-2,3,3a,10,11,11a-hexahydrobenzo[h]furo[2,3-c]quinoline (4a)

Blackish grey crystal, m.p. 215-218 °C. FT-IR (KBr cm^{-1}): 3324 (-NH), 2910 (-CH), 1568 (-C=C- aromatic), 1210 (ether), ^{1}H NMR 400 MHz, DMSO-d_6) 9.96 (s, 1H, D_2O exchangeable -NH), 8.32-7.45 (m, 6H, Ar), 6.9-7.10 (m, 2H,Ar), 6.75 (s, 1H, Ar),4.8 (t, 1H, -CH), 4.38 (d, 1H, -CH), 3.77-3.85 (m, 2H, -CH_2), 3.8-(s, 6H, -CH_3), 2.43 (m, 1H, -CH), 1.1-1.7(m, 2H, CH_2). ^{13}C NMR (100 MHz, DMSO-d_6): 189.51, 156.24, 153.76, 151.34, 127.72, 125.26, 124.96, 112.90, 111.70, 111.34, 110.34, 104.37, 93.19, 78.0, 76.0, 56.10, 40.0, 38.0, Mass (m/z): [M+1]$^+$: 361.16

11-(4-Cyanophenyl)-2,3,3a,10,11,11a-hexahydrobenzo[h]furo[2,3-c]quinoline (4b)

Light yellow crystals, m.p 250-253 °C. FTIR (KBr cm^{-1}): 3372 (-NH), 2965 (-CH), 2183 (-CN), 1559 (-C=C- aromatic), 1215 (ether).^{1}H NMR 400 MHz, DMSO-d_6) δ 10.14 (s, 1H, D_2O exchangeable -NH), 8.33- 7.45(m, 6H,

Asstt. Co
ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Woman
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

J. Biol. Chem. Chron. 2019, 5(1): 105-107
ISSN (Print): 2454 - 7468
ISSN (Online): 2454 - 7476
www.erespublishco.com/jbcc/

Stability Constant Study of Transition Metal Complexes with Pharmacologically Active Nicotinamide and Alanine by pH Metric Technique

D. D.Kayande[1*], Shivaji Jadhav[2], Mazahar Farooqui[3] and Megha Rai[3]

[1] S.B.E.S.Science College, Aurangabad, Maharashtra, INDIA
[2] Tarsi Arts and Science College, Paithan, Aurangabad, Maharashtra, INDIA
[3] Dr. Rafiq Zakaria College for Women, Aurangabad (M.S), INDIA

* Correspondence: E-mail: drkayande@gmail.com

DOI: http://dx.doi.org/10.33980/jbcc.2019.v05i01.017

(Received 26 Feb, 2019; Accepted 27 Apr, 2019; Published 29 Apr, 2019)

ABSTRACT: The main objective of this research work is to carry out the stability constant study of ternary complexes of transition elements with nicotinamide and alanine. Formation of ternary complexes of transition elements like Fe(II), Co(II), Ni(II), Cu(II) and Zn(II) of pharmacologically active Nicotinamide with Alanine was studied by the pH-metric technique at 25±0.1°C in 70%(v/v) ethanol - water medium at 0.1M ($NaClO_4$) ionic strength. The stability constants of the Nicotinamide and Alanine were calculated from the half integral method of potentiometric pH titrations data of solutions according to Irving and Rossetti's method. The stability constants of these ternary complexes were evaluated and Order of stability constant found as Co (II) > Fe (II) > Cu (II) > Ni (II) > Zn (II).

Keywords: Stability constant, Nicotinamide, Alanine and Ternary complexes.

INTRODUCTION: The metal ligand equilibria plays important role in different fields including the therapeutic values of the drug. It is well known fact that the metal complexes of the drugs shows different therapeutic values compared to the bare drug only, therefore various researchers reports stability constant of bioactive compounds with metal (Chaudhari et al., 2009; Pardeshi et al., 2015). For the determination of stability constant various technique are utilized such as spectrophotometry, polarography, potentiometry etc. pH-metric study is one of the best widely used technique because it has various advantages like, it is simple and low cost technique, easy to operate, economic (Jadhav et al., 2016) etc.

Hetero atom present in bioactive compounds able to bind metal ions present in living organisms due to present of lone pair of electron. Activity of Mixed Metal complexes are found to be improved as compare to parental biomolecule, so now a days many co-workers are interested to carried out complexation study of various heterocyclic compounds which are continuously used in medical field.

Complex formation of metal ions of biological important compounds with amino acids, small peptide and their derivatives are of great significance, as many of these systems offer simple models of otherwise complex metal protein equilibria occurring in enzymic processes. At low pH, the peptide group undergoes both protonation and metallation at the carbonyl oxygen atom. Metal ion coordination with amide nitrogen atom takes place only upon substitution of the amide proton, for which primary ligating site at a chelating position is, however, essential researchers are studied the effect of a sulfonamide group at a chelating position on the modes of Cu(II) ion coordination with a series of N- Benzene Sulphonyl derivatives. Nicotinamide is one of the most famous pharmacological active agents which are used to treat pellagra discovered in 1935 -1937. Structural configuration of nicotinamide shows the presence of pyridine ring and attachment of amide group at metaposition. Hetero atom present in the structure of Nicotinamide is helpful for the formation of metal complexation which may improve the stability and pharmacological role of parental biomolecule.

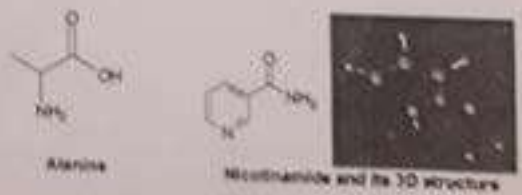


Figure 1: Structures of ligands.

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-2019.

POLYCYCLIC AROMATIC COMPOUNDS
https://doi.org/10.1080/10406638.2018.1544154

Taylor & Francis
Taylor & Francis Group

Check for updates

Microwave Assisted Synthesis of Novel Schiff Bases of Pyrazolyl Carbaldehyde and Triazole in PEG-400

Mujahed Shaikh, Devendra Wagare, Mazahar Farooqui, and Ayesha Durrani

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, India

ABSTRACT

The pyrazole–triazole hybrid ring system has attracted great interest of synthetic organic researcher and those dealing with the study of medicinal, agricultural, and pharmaceutical compounds due to their versatile potential to interact with biological systems. The pyrazole and triazole nucleus possesses a wide range of biological activities especially anticancer, antifungal, and antitumor. Therefore, there is a need to synthesized novel compounds which contains both triazole and pyrazole nucleus in their structure. Herein, we have synthesized series of Schiff bases from pyrazole carbaldehyde and 4-amino-5-(pyridine-4yl)-1,2,4-triazole-3-thiol under microwave irradiation at 70–75 °C in polyethylene glycol-400 in 15–20 min.

ARTICLE HISTORY
Received 5 May 2018
Accepted 28 October 2018

KEYWORDS
Isoniazide; microwave; PEG-400; pyrazolyl carbaldehyde; triazole

Introduction

In the last decades, the problem of multi-drug resistance for microorganisms has been reached around the world. The literature survey reveals that the heterocyclic compounds containing triazole and its derivatives play an important role in the treatment of diseases caused by bacterial and microbial infections. The derivatives of triazole and pyrazole show an important role in the field of medicinal and pesticide chemistry.[1,2] The triazole ring contains two carbon atoms and three nitrogen, so it is five member ring with molecular formula $C_2H_3N_3$ (Figure 1).

The polyethylene glycol (PEG)-400 is biodegradable, nontoxic, and inexpensive medium. It easily forms strong hydrogen-bonding network with substrate which will enhance reaction rate. PEG has a wide range of solubility for organic and inorganic compounds and widely used as a green medium in various organic transformations. It is miscible with water and easily remove from reaction mask.[3–6] Huygens's has developed method for the synthesis of triazoles from the copper (I) catalyzed thermal cycloaddition of azides and alkynes.[7–11] Pyrazole ring containing heterocycles show anti-inflammatory,[12] antipyretic,[13] antibacterial, antioxidant, and antimicrobial activities.[14–16] Schiff bases are versatile C=N (Imine group) containing compounds possess broad spectrum of biological and pharmological activities such as antibacterial, antifungal, antitumor, anticorrosive, and anti-inflammatory activities.[17–28] The PEG-400 is explored as a safer media and it is a biologically acceptable polymer used extensively in drug delivery.[29–36] Electron rich nitrogen attached with sulfur containing heterocycles possess wide range of pharmaceutical activities as well as it is basic structural unit of alkaloids, vitamins, and various pigments of plants. It was inspired us to prepare new heterocycles containing triazoles and pyrazoles as a scaffolds, therefore herein reported the synthesis and evaluation of novel Schiff bases 4-((1,3-diphenyl-1H-pyrazol-4-yl)methyleneamino)-5-(pyridin-4-yl)-4H-1,2,4-triazole-3-thiol from the condensation of pyrazolyl

CONTACT Devendra Wagare dswagare@gmail.com Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India.

© 2018 Taylor & Francis Group, LLC

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park
AURANGABAD. (M.S.)

2018-2019.

E-ISSN: 2278-3229

IJGHC, September 2018 – November 2018; Sec. A: Vol.7, No.4, 843-852.
DOI: 10.24214/IJGHC/GC/7/4/84352.

International Journal of Green and Herbal Chemistry

An International Peer Review E-3 Journal of Sciences

Available online at www.ijghc.com

Section A: Green Chemistry

Research Article

CODEN (USA): IJGHAY

Adsorption equilibrium, kinetics and thermodynamics of malachite green (MG) dye adsorption from aqueous solutions onto Bael (Aegle marmelos) bark

ChangdeoAhilaji Kadam[1] and Mazahar Farooqui[2]

[1]M. E. S., Shri DnyaneshwarMahavidyalaya, Newasa, District- Ahmednagar (MS), India.

[2]Dr. RafiqZakaria College for Women, Navkhanda, Aurangabad, Maharashtra 431 001, India.

Received: 20 September2018; **Revised:** 13 October 2018; **Accepted:** 26October 2018

Abstract: Present research article deals with use of cheap, highly efficient, easily available, novel adsorbent, Indian Bael (*Aegle marmelos*) bark for adsorption of toxic dye like Malachite Green (MG) from the aqueous solution. Different parameters such as temperature, contact time, initial dye concentration, adsorbent dose, pH and effect of salt were studied and optimal experimental conditions were maintained. Batch adsorption technique was used to optimize the process parameter. Obtained result shows that with increase in the adsorbent doses and contact time percentage adsorption of MG increases while decreases with increase in temperature, dye concentration and addition of salt. The MG adsorption on Bael bark untreated, treated with nitric acid and treated with formaldehyde were 96.64%, 97.46% and 97.39 % respectively at optimum pH 8. Adsorption data was well fitted with Langmuir and Freundlich isotherm models. Thermodynamic parameters indicate adsorption as an endothermic process with decrease in randomness.

Keywords: Bael bark (BBUT), Malachite Green, adsorption isotherms models, equilibrium, Kinetics, thermodynamics.

INTRODUCTION

The water soluble dyes are the major environmental pollutants which damage the

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Juhee Park,
AURANGABAD. (M.S.)

Chemistry & Biology Interface, 2019, 9, 1, 71-82

RESEARCH PAPER ISSN: 2249 – 4820

CHEMISTRY & BIOLOGY INTERFACE

An official Journal of ISCB. Journal homepage: www.cbijournal.com

Tetrabutyl ammonium hydrogen sulphate (TBAHS) Catalyzed Convenient and Greener Synthesis of Tetrahydrobenzo[a]xanthene-11-ones

Furqan Diwan,[a] Mohammad Mohsin,[a]* Mohammad Shaikh,[b] Prasad Dixit,[c] Mazahar Farooqui[a]*

[a]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad- 431001, India.*
[b]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad-431001, India*
[c]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad-431001, India*
**Corresponding author, Tel: +919422214765*
*E-mail: * m.mohsin_64@rediffmail.com; drmazharfarooqui@rediffmail.com*
Received 2 February 2019; Accepted 28 February 2019

Abstract: A new efficient and green protocol was developed for the synthesis of Tetrahydrobenzo[a]xanthene-11-ones using Tetrabutyl ammonium hydrogen sulphate (TBAHS), as catalyst and water as a solvent under environmentally friendly conditions. The developed synthetic protocol represents a very simple and novel route for the synthesis of substituted Tetrahydrobenzo[a]xanthene-11-ones derivatives. the advantageous features of this methodology are environmentally friendly and operational simplicity, including excellent yields, shorter reaction time, mild reaction conditions and environmentally benign catalyst and solvent. Furthermore, analysis of the ADME parameters for synthesized compounds showed good drug like properties and can be developed as oral drug candidate.

Keywords: Tetrahydrobenzo[a]xanthene-11-ones; Tetrabutyl ammonium hydrogen sulphate (TBAHS); Water as a solvent; Green protocol; Operational simplicity.

Introduction

The present scenario of organic and green chemistry principles have encouraged the scientific community and researchers for the development of green and eco-friendly protocol for various organic transformation and motivated for the use of solid acid catalyst as an alternative to the conventional organic, mineral toxic and hazardous liquid acid catalyst like sulphuric acid, nitric acid, hydrochloric acid, methane sulphonic acid, trifluoroacetic acid likewise which cannot be use in stoichiometric amount. Whereas solid acid catalyst is economical industrially suitable and user-friendly owing their remarkable properties like negligible toxicity, easy availability, high stability and non-energy intensive methods for preparation and usage of the solid acid catalyst in the various organic transformation.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-2019

Chemistry & Biology Interface, 2019, 9, 1, 71-82

RESEARCH PAPER ISSN: 2249 –4820

CHEMISTRY & BIOLOGY INTERFACE

An official Journal of ISCB, Journal homepage: www.cbijournal.com

Tetrabutyl ammonium hydrogen sulphate (TBAHS) Catalyzed Convenient and Greener Synthesis of Tetrahydrobenzo[a]xanthene-11-ones

Furqan Diwan,[a] Mohammad Mohsin,[b] Mohammad Shaikh,[c] Prasad Dixit,[c] Mazahar Farooqui[c]*

[a]Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad- 431001, India
[b]Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad 431001, India
[c]Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad-431001, India
*Corresponding author. Tel.:+919422214785
E-mail: * mazahar_64@rediffmail.com, diwanfurqan@rediffmail.com

Received 2 Feburary 2019; Accepted 28 Feburary 2019

Abstract: A new efficient and green protocol was developed for the synthesis of Tetrahydrobenzo[a]xanthene-11-ones using Tetrabutyl ammonium hydrogen sulphate (TBAHS), as catalyst and water as a solvent under environmentally friendly conditions. The developed synthetic protocol represents a very simple and novel route for the synthesis of substituted Tetrahydrobenzo[a]xanthene-11-ones derivatives. the advantageous features of this methodology are environmentally friendly and operational simplicity, including excellent yields, shorter reaction time, mild reaction conditions and environmentally benign catalyst and solvent. Furthermore, analysis of the ADME parameters for synthesized compounds showed good drug like properties and can be developed as oral drug candidate.

Keywords: Tetrahydrobenzo[a]xanthene-11-ones; Tetrabutyl ammonium hydrogen sulphate (TBAHS); Water as a solvent; Green protocol; Operational simplicity.

Introduction

The present scenario of organic and green chemistry principles have encouraged the scientific community and researchers for the development of green and eco-friendly protocol for various organic transformation and motivated for the use of solid acid catalyst as an alternative to the conventional organic, mineral toxic and hazardous liquid acid catalyst like sulphuric acid, nitric acid, hydrochloric acid, methane sulphonic acid, trifluoroacetic acid likewise which cannot be use in stoichiometric amount. Whereas solid acid catalyst is economical industrially suitable and user-friendly owing their remarkable properties like negligible toxicity, easy availability, high stability and non-energy intensive methods for preparation and usage of the solid acid catalyst in the various organic transformation.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASSISTANT PROFESSOR
Dr. rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

Research Article

Rapid and environmentally benign protocol for the synthesis of pyrazolyl-4-thiazolidinone

Mujahed Shaikh*, Devendra Wagare, Mazahar Farooqui, Ayesha Durrani

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India

Received: 26 December 2018 Revised: 20 January 2019 Accepted: 11 February 2019

Abstract

Objective: The multi-component one-pot approach becomes the need of the research due to its offer advantage like atom economy, minimum reaction time and most important one time workup. Therefore, there is an urgent need to design and developed the efficient and environmentally benign one-pot protocol for the synthesis of pyrazolyl-4-thiazolidinone. **Material and Methods:** Herein, we have developed a facial and convenient one-pot protocol for the synthesis of pyrazolyl-4-thiazolidinone by irradiating the mixture of isonicotinohydrazide, pyrazolyl carbaldehydes and thioglycolic acid (mercaptoacetic acid) in glycerol at 400 watt under microwave irradiator with 70-75°C temperature. The method provides a better alternative for the existing methods as it involves utilization of in-situ-generated imine linkage, avoids the use of toxic volatile organic solvents, easy work-up, reduces the reaction time to obtain excellent yield and most important the reaction is completed with reactant hence we have not use any external concentrated acid to form the imine linkage. **Results:** Use of glycerol gives us higher yield, lesser reaction time and the most important it will enhance the reaction due to it forms hydrogen bonding network. The results obtained with excellent yield. **Conclusion:** This protocol are operationally simple, rapid, 100% atom economy, potential for recycling of the reaction medium, good to excellent yields, no need to separate intermediate precursor and finally agreement with green Chemistry principles, all these aspects make the designed protocol more reliable and attractive and alternative to existing methods.

Keywords: Pyrazole carbaldehyde, glycerol, thioglycolic acid, green, one-pot

Introduction

The drug discovery relies on the interface of chemical and biological diversity and the most spectacular advances in medicinal chemistry have made in the last few years, where the heterocyclic compound played an important role in regulating biological activities and wide range pharmacological properties. The heterocyclic compounds are an evergreen field in the branch of organic chemistry, which attracts to work not only on natural product but also in synthetic chemistry. Schiff bases are versatile C=N (Imine) containing compounds possessing broad spectrum of biological activity and shows antibacterial, antifungal, anti-inflammatory activity antitumor and also, they are giving many biochemical, clinical and pharmacological properties (Gupta et al., 1998; Isloor et al., 2009; Krishnaraj et al., 2008; Balsells et al., 1998; Eswaran et al., 2009; Przybylski et al., 2009). Schiff bases are formed when any primary amine reacts with an aldehyde under specific conditions. It shows the activity like anti-corrosion agent, Medicine, biological and pharmacological activity.

Schiff bases and amides derived from various heterocyclic compounds displayed broad range of biological activities such as anticancer, antiviral, antimicrobial, anticonvulsant, antidepressant, angiotension-II receptor antagonist, and anti-inflammatory and anti-glycation activity. The modifications of the Schiff bases have proven highly effective with improved potency and lesser toxicity. Thiazolidines derivatives shows pharmacological, medicinal and biological applications like antibacterial, (Somwane and Srivastava, 2008; Mistry and Desai, 2004; Sayyed et al., 2006; Kohli et al., 2007; Mulwad and Abid, 2008; Sattigeri et al., 2005) analgesic, (Fraga-Dubreuil and Bazureau, 2003) anticancer, (Prabhaker et al., 2004) anti-inflammatory, (Ottana et al., 2005; Venkatesh and Pandeya, 2009; Vazzana

*Address for Corresponding Author:
Mujahed Shaikh
Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India
Email: shkh_mujahed@rediffmail.com

DOI: https://doi.org/10.31024/ajpp.2019.5.3.21

2455-2674/Copyright © 2019 N.K. Memorial Scientific Research and Education Society. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/)

Dr. Megha Rai
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Jubilee Park, Aurangabad - 431001

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

pH-Metric Study of Stability Constant of ternary Complexes involving transition Metals, Nicotinamide and Penicillamine

D.D. Kayande[1], Shivaji Jadhav[2], Mazahar Farooqui[3], Megha Rai[3]

[1] S.B.E.S. College, Aurangabad.

[2]Tarai Arts and Science College, Paithan, Aurangabad.

[3]Dr. Rafiq Zakaria College for Women, Aurangabad (M.S), India.

drkayande@gmail.com, dr.shivaji1985@gmail.com

Abstract

Role of Pharmacologically important compounds (Nicotinamide and Penicillamine) as ligand has been focused on the coordination complexes with transition metal ions such as Fe (III), Co (II), Ni (II), Cu (II) and Zn (II). Complexation of metal ions with Nicotinamide as primary ligand whereas Penicillamine as secondary ligand has been evaluated by the potentiometric technique at 25±0.1°C and 0.1M ($NaClO_4$) ionic strength. The protonation constants of the ligand were calculated from the half-integral method of potentiometric pH titrations data of solutions according to Irving and Rossetti's method.

Keywords: Stability constant, Nicotinamide, Penicillamine, mixed ligand complexes.

Introduction:

Various functional groups, active sites present in bioactive compounds able to bind metal ions are present in living organisms. As compare to original biomolecule, Mixed Metal complexes of biomolecule are found to be more effective. Due to this importance of complexation of metal ions with biomolecule most of the researchers are attracted towards mixed metal complexation study of pharmacologically active compounds and it plays life-sustaining role in the bio - chemical activity [1-3]. It is widely used in various fields such as biological processes, pharmaceuticals, separation techniques, analytical processes etc. Complex formation of metal ions of biological importance with amino acids, small peptide and their derivatives are of great significance, as many of these systems offer simple models of otherwise.

Complex metal protein equilibria are occurring in enzymatic processes. At low pH, the peptide group undergoes both protonation and metallation at the carbonyl oxygen atom. Metal ion coordination with amide nitrogen atom takes place only upon substitution of the amide proton, for which primary ligating site at a chelating position is, however, essential G.N. Mukherjee and P. K. Chakraborty studied the effect of a sulfinamide group at a chelating position on the modes of Cu(II) ion coordination with a series of N- Benzene Sulphonyl derivatives [4].

Nicotinamide is a form of vitamin B3 found in food and used as a dietary supplement and medication. As a supplement, it is used by mouth to prevent and treat pellagra. Nicotinamide was discovered between 1935 and 1937. It is on the World Health Organization's List of Essential Medicines, the most effective and safe medicines needed in a health system. The structure of nicotinamide consists of a pyridine ring to which a primary amide group is attached in the *meta* position. It is an amide of nicotinic acid Penicillamine is a medication primarily used for the treatment of the patients which is suffering through kidney stones that have high urine cysteine levels, rheumatoid arthritis, and various heavy metal poisonings. It is taken by mouth. It is also used as a chelating agent in Wilson's disease, a rare genetic disorder of copper metabolism. Penicillamine treatment relies on its binding to accumulated copper and elimination through urine.

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

pH-Metric Study of Stability Constant of ternary Complexes involving transition Metals, Nicotinamide and Penicillamine

D.D. Kayande[1], Shivaji Jadhav[2], Mazahar Farooqui[3], Megha Rai[3]

[1] S.B.E.S. College, Aurangabad.

[2]Tarai Arts and Science College, Paithan, Aurangabad.

[3]Dr. Rafiq Zakaria College for Women, Aurangabad (M.S), India.

drkayande@gmail.com, dr.shivaji1985@gmail.com

Abstract

Role of Pharmacologically important compounds (Nicotinamide and Penicillamine) as ligand has been focused on the coordination complexes with transition metal ions such as Fe (III), Co (II), Ni (II), Cu (II) and Zn (II). Complexation of metal ions with Nicotinamide as primary ligand whereas Penicillamine as secondary ligand has been evaluated by the potentiometric technique at 25±0.1°C and 0.1M ($NaClO_4$) ionic strength. The protonation constants of the ligand were calculated from the half-integral method of potentiometric pH titrations data of solutions according to Irving and Rossetti's method.

Keywords: Stability constant, Nicotinamide, Penicillamine, mixed ligand complexes.

Introduction:

Various functional groups, active sites present in bioactive compounds able to bind metal ions are present in living organisms. As compare to original biomolecule, Mixed Metal complexes of biomolecule are found to be more effective. Due to this importance of complexation of metal ions with biomolecule most of the researchers are attracted towards mixed metal complexation study of pharmacologically active compounds and it plays life-sustaining role in the bio - chemical activity [1-3]. It is widely used in various fields such as biological processes, pharmaceuticals, separation techniques, analytical processes etc. Complex formation of metal ions of biological importance with amino acids, small peptide and their derivatives are of great significance, as many of these systems offer simple models of otherwise.

Complex metal protein equilibria are occurring in enzymatic processes. At low pH, the peptide group undergoes both protonation and metallation at the carbonyl oxygen atom. Metal ion coordination with amide nitrogen atom takes place only upon substitution of the amide proton, for which primary ligating site at a chelating position is, however, essential G.N. Mukherjee and P. K. Chakraborty studied the effect of a sulfinamide group at a chelating position on the modes of Cu(II) ion coordination with a series of N- Benzene Sulphonyl derivatives [4].

Nicotinamide is a form of vitamin B3 found in food and used as a dietary supplement and medication. As a supplement, it is used by mouth to prevent and treat pellagra. Nicotinamide was discovered between 1935 and 1937. It is on the World Health Organization's List of Essential Medicines, the most effective and safe medicines needed in a health system. The structure of nicotinamide consists of a pyridine ring to which a primary amide group is attached in the *meta* position. It is an amide of nicotinic acid. Penicillamine is a medication primarily used for the treatment of the patients which is suffering through kidney stones that have high urine cysteine levels, rheumatoid arthritis, and various heavy metal poisonings. It is taken by mouth. It is also used as a chelating agent. In Wilson's disease, a rare genetic disorder of copper metabolism, Penicillamine treatment relies on its binding to accumulated copper and elimination through urine.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASSISTANT PROFESSOR

POLYCYCLIC AROMATIC COMPOUNDS
https://doi.org/10.1080/10406638.2019.1695637

Taylor & Francis
Taylor & Francis Group

Check for updates

An Efficient and Green Microwave-Assisted One Pot Synthesis of Imidazothiadiazoles in PEG-400 and Water

Devendra S. Wagare[a], Ashwini Sonone[b], Mazahar Farooqui[b], and Ayesha Durrani[b]

[a]Department of Chemistry, Vivekanand College, Aurangabad, M.S, India; [b]Department of chemistry, Rafiq Zakaria College for Women, Aurangabad, M.S, India

Principal Dr. Rafiq Zakaria College for Women

ABSTRACT

Imidazothiadiazoles have attracted great deal of interest because of its several valuable diversified applications in the field of medicinal chemistry. Therefore, there is, requirement to design new environmentally benign protocol for the synthesis of benzo[d]imidazo[2,1-b]thiazoles. Herein, a simple, rapid, green and one-pot cascade process has been developed for synthesis of benzo[d]imidazo [2,1-b]thiazoles from the condensation of aromatic ketones, NBS (*N*-bromosuccinimide) and 5-(Biphenyl-4-yl)-1,3,4-thiadiazol-2-amine under microwave irradiation at 80–85 °C in PEG (polyethylene glycol)-400 and water as a green reaction medium. The product obtained in good to excellent yield (94-98%) in minimum reaction time.

ARTICLE HISTORY
Received 29 October 2018
Accepted 18 November 2019

KEYWORDS
Biphenylimidazo[2,1-b][1,3,4]thiadiazole; 5-(Biphenyl-4-yl)-1,3,4-thiadiazol-2-amine; PEG-400-water; microwave

1. Introduction

The bridgehead azaheterocycles, especially containing imidazole ring systems like imidazothiadiazoles show several valuable diversified pharmaceutical applications and have been attracted great deal of interest of the organic chemists since last many years because of their wide medicinal applications. Biphenylimidazo[2,1-b][1,3,4]thiadiazole derivatives show antitubercular,[1] antiulcer,[2] antibacterial activities.[3] Imidathiadiazoles also act as anticonvulsant, anxiolytic agents,[4] anti-asthmatic,[5] antisecretory,[6] and antimicrobial agents. Among the important heterocyclic compounds, 1,3,4-thiadiazoles are one of the important structural fragments in medicinal chemistry show different biological activities, such as Ca^{2+} channel blockers,[7] anti-inflammatory active agents,[8] antitubercular activity,[9] anti-infectious,[10] antibacterial,[11] antidepressants,[12] and anti-cancer agents.[13](Figure 1)

The broad spectrum anthelmintic agent such as **Tetramisole (1)** open the various routes for the synthesis of imidazo[2,1-b][1,3,4]thiadiazoles.[14] ***Levamisole*** **(2)** appears to be the most effective in patients with small tumor burdens and it acts by stimulating the responsiveness of lymphocytes to tumor antigens.[15] In recent years, microwave irradiation has emerged as a powerful and well controlled heating source for various organic reactions due to it reduces reaction times and increases the product yields.[16,17] Aqueous phase one-pot multicomponent reactions emerged as a powerful tool in organic synthesis, especially in green chemistry.[18–19] PEG-400 is nontoxic, easily available, inexpensive, nonionic liquid medium of low volatility, thermally stable, reusable medium use in green chemistry and also acts as a phase transfer catalyst.[20,21] Different number of methods have been reported for the synthesis of this important framework; the main part of the protocols involves initial coupling reactions between endocyclic nitrogen of 5-(Biphenyl-4-yl)-

CONTACT Ayesha Durrani dswagare@gmail.com Department of chemistry, Rafiq Zakaria College for Women, Aurangabad 431001 (M.S.), India.
Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/gpol.
© 2019 Taylor & Francis Group, LLC

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Juibloe Park,
AURANGABAD. (M.S.)

Ayesha Durrani
Head
Dept. of chem...
Dr. Rafiq Zakaria College...
Navkhanda, Aurangabad

Research Article

Rapid and environmentally benign protocol for the synthesis of pyrazolyl-4-thiazolidinone

Mujahed Shaikh*, Devendra Wagare, Mazahar Farooqui, Ayesha Durrani

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India

Received: 26 December 2018 Revised: 20 January 2019 Accepted: 11 February 2019

Abstract

Objective: The multi-component one-pot approach becomes the need of the research due to its offer advantage like atom economy, minimum reaction time and most important one time workup. Therefore, there is an urgent need to design and developed the efficient and environmentally benign one-pot protocol for the synthesis of pyrazolyl-4-thiazolidinone. **Material and Methods:** Herein, we have developed a facial and convenient one-pot protocol for the synthesis of pyrazolyl-4-thiazolidinone by irradiating the mixture of isonicotinohydrazide, pyrazolyl carbaldehydes and thioglycolic acid (mercaptoacetic acid) in glycerol at 400 watt under microwave irradiator with 70-75°C temperature. The method provides a better alternative for the existing methods as it involves utilization of in-situ-generated imine linkage, avoids the use of toxic volatile organic solvents, easy work-up, reduces the reaction time to obtain excellent yield and most important the reaction is completed with reactant hence we have not use any external concentrated acid to form the imine linkage. **Results:** Use of glycerol gives us higher yield, lesser reaction time and the most important it will enhance the reaction due to it forms hydrogen bonding network. The results obtained with excellent yield. **Conclusion:** This protocol are operationally simple, rapid, 100% atom economy, potential for recycling of the reaction medium, good to excellent yields, no need to separate intermediate precursor and finally agreement with green Chemistry principles, all these aspects make the designed protocol more reliable and attractive and alternative to existing methods.

Keywords: Pyrazole carbaldehyde, glycerol, thioglycolic acid, green, one-pot

Introduction

The drug discovery relies on the interface of chemical and biological diversity and the most spectacular advances in medicinal chemistry have made in the last few years, where the heterocyclic compound played an important role in regulating biological activities and wide range pharmacological properties. The heterocyclic compounds are an evergreen field in the branch of organic chemistry, which attracts to work not only on natural product but also in synthetic chemistry. Schiff bases are versatile C=N (Imine) containing compounds possessing broad spectrum of biological activity and shows antibacterial, antifungal, anti-inflammatory activity antitumor and also, they are giving many biochemical, clinical and pharmacological properties (Gupta et al., 1998; Isloor et al., 2009; Krishnaraj et al., 2008; Balsells et al., 1998; Eswaran et al., 2009; Przybylski et al., 2009). Schiff bases are formed when any primary amine reacts with an aldehyde under specific conditions. It shows the activity like anti-corrosion agent, Medicine, biological and pharmacological activity.

Schiff bases and amides derived from various heterocyclic compounds displayed broad range of biological activities such as anticancer, antiviral, antimicrobial, anticonvulsant, antidepressant, angiotensin-II receptor antagonist, and anti-inflammatory and anti-glycation activity. The modifications of the Schiff bases have proven highly effective with improved potency and lesser toxicity. Thiazolidines derivatives shows pharmacological, medicinal and biological applications like antibacterial, (Somwanc and Srivastava, 2008; Mistry and Desai, 2004; Sayyed et al., 2006; Kohli et al., 2007; Mulwad and Abid, 2008; Sattigeri et al., 2005) analgesic, (Fraga-Dubeeuil and Bazureau, 2003) anticancer, (Prabhaker et al., 2004) anti-inflammatory, (Ottana et al., 2005; Venkatesh and Pandeya, 2009; Vazzana

**Address for Corresponding Author:*
Mujahed Shaikh
Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India
Email: shaikh_mujahed@rediffmail.com

DOI: https://doi.org/10.31024/ajpp.2019.5.3.21

2455-2674/Copyright © 2019, N.S. Memorial Scientific Research and Education Society. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Juiblee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH

INNOVARE ACADEMIC SCIENCES

Vol 12, Issue 2, 2019

Online - 2455-3891
Print - 0974-2441

Research Article

PHYTOCHEMICAL SCREENING AND ANTIAMEBIC STUDIES OF *TAMARINDUS INDICA* OF LEAVES EXTRACT

MANSOUR ABDULNABI H MEHDI[1]*, FADEL YS ALARABI[1], MAZAHAR FAROOQUI[2], VIDYA PRADHAN[2]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, India. [2]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Navkhanda, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad - 431001, India. *Email: Mansourabdulnabi@gmail.com/drvidyasp@gmail.com

Dr. Rafiq Zakaria College for Women

Received: 11 September 2018, Revised and Accepted: 03 November 2018

ABSTRACT

Objective: The present study deals with preliminary phytochemical screening of *Tamarindus indica* extracts and investigates its antiamebic effect against *Entamoeba histolytica* in vitro.

Methods: *E. histolytica* was isolated from stools of patients with amebic dysentery and cultivated in lock-egg medium. The leaves extract was added to check its antiamebic activity.

Results: The phytochemical screening shows that *T. indica* contains alkaloids, flavonoids, phenol, and tannins. *T. indica* extracts (aqueous and ethanolic) were added to culture media *E. histolytica*. It was observed that *E. histolytica* count reduced to zero after 72 h and 96 h when 15 mg/ml of aqueous and ethanolic extracts were added, respectively. It is also revealed that there is no cytotoxicity against erythrocytes even when high concentration of plant leaves extract is used.

Conclusion: The *in vitro* sensitivity of *T. indica* leaves extract against the *E. histolytica* is established.

Keywords: *Entamoeba histolytica*, *Tamarindus indica*, Phytochemical.

© 2019 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/) DOI: http://dx.doi.org/10.22159/ajpcr.2019.v12i2.29684

INTRODUCTION

Entamoeba histolytica has affected 50 million people of the world's population annually with the prevalence of 50% of the general population it is estimated to cause >100,000 deaths per year [1,2]. The prevalence of amebiasis varies from 1% in industrialized countries to 50%–80% in tropical countries [3]. It also represents the second largest cause of mortality from infection with parasitic protozoa after malaria [4].

At present, metronidazole is the therapeutic drug of choice for the treatment of amebiasis [5], but it experiences drug resistance by *E. histolytica* [6], resulting in the need for increased doses to overcome the infection [7]. However, this drug has several untoward side effects such as headache, metallic taste in the mouth, and vomiting as well as neurotoxicity [8,9]. *E. histolytica* parasite has registered some level of resistance to most of the medicines rendering them ineffective [10]. In addition, the risk of potential mutagenicity, carcinogenicity, and side effects of metronidazole, and taking into account, the development of resistant strains of *E. histolytica* against metronidazole, new, more effective, and safer antiprotozoal agents is urgently required [9,11]. In developing countries, medicinal plants are popular because their products are safe and widely available at low cost [12]. Screening natural products provide the chance to discover new molecules of the unique structure with high activity and selectivity [13]. Therefore, there is a need to find new compounds that can help to curb some of the menaces of resistance and also treat this *E. histolytica*.

The aim of this study is to perform preliminary phytochemical screening of the *Tamarindus indica* extracts and to investigate the antiamebic effect of *T. indica* against *E. histolytica* in vitro. In addition, this study aims to investigate cytotoxicity against the erythrocytes for *T. indica* extracts. According to literature survey, antiamebic activity of this plant has not previously been reported. Therefore, this study could be assumed as the first report on this topic.

MATERIALS AND METHODS

Collection of plant sample

T. indica leaves (Fig. 1a) were collected from Rosabagh garden. The collected plant was identified botanically by Dr. Rafiuddin Naser Department of Botany Maulana Azad College, Aurangabad. The leaves were washed well under tap water, then dried in the laboratory in the absence of sunlight and left for two weeks. The leaves were flipped daily to remove damaged leaves and to prevent moisture. When the dried leaves were ready, they were grinded with an electric grinder until they became soft powder. The powder was preserved in bottles at 4°C in refrigerator.

Preparation of plant extracts

The following procedures were used to prepare aqueous and ethanolic 70% extract [14].

Preparation of aqueous extracts

About 40 g of dry plant powder was taken in a beaker and 400 ml of distilled water was added. Then the mixture was stirred with a magnetic stirrer for 24 h. It was then sprayed by four layers of gauze cloth to separate the large fibers. The filter was then separated by centrifuge at 3000 rpm for 10 min. The extract was evaporated by leaving it in an incubator at a temperature of 50°C for 24 h. The extract was weighed and kept in refrigerator in sterilized and dark glass containers.

Preparation of ethanolic extracts

About 40 g of dry plant powder was weighed and transferred to Soxhlet extraction. 400 ml of ethanol was added to it. The plant materials were extracted at 50–55°C, till the color extract disappeared. The solvent was evaporated by rotary evaporator. The dry mass was transferred to incubator and kept for 24 h 50°C. It was weighed and kept in refrigerator in sterilized and dark colored containers.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

E-ISSN: 0975-8232; P-ISSN: 2320-5148

IJPSR (2019), Volume 10, Issue 7

(Research Article)

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 18 October 2018; received in revised form, 02 April 2019; accepted, 30 May 2019; published 01 July 2019

THERAPEUTIC EFFECT OF *TAMARINDUS INDICA* EXTRACTS ON THE PATHOGENESIS OF *ENTAMOEBA HISTOLYTICA IN-VIVO*

Mansour Abdulnabi H. Mehdi *[1], Gozif Mohammed N. Omar [2], Mazahar Farooqui [2] and Vidya Pradhan [1]

Dr. Rafiq Zakaria College for Women [1], Aurangabad - 431001, Maharashtra, India.
Department of Biochemistry [2], Dr. Babasaheb Ambedkar Marathwada University, Aurangabad - 431001, Maharashtra, India.

Keywords:

Entamoeba histolytica, *Tamarindus indica*, Histopathology, Toxicity, *In-vivo*

Correspondence to Author:
Mansour Abdulnabi H. Mehdi

Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, Maharashtra, India.

E-mail: mansourabdulnabi@gmail.com

ABSTRACT: *Entamoeba histolytic* is a protozoan parasite which causes amoebiasis, about 50 million people are affected yearly, and it caused more than 100,000 deaths per year. The study investigates the therapeutic effect of ethanolic and aqueous *Tamarindus indica* leaves extracts on infected rats with *Entamoeba histolytica*. Twenty-one *Rattus norvegicus* rats were infected with *Entamoeba histolytica* and divided into seven groups (three rats in each group). Groups (1, 2, and 3) were treated with aqueous *Tamarindus indica* extracts at doses 125, 250, and 500 mg/kg respectively for ten days. Groups (4, 5 and 6) were treated with ethanolic extract of *Tamarindus indica* at doses 125, 250, and 500 mg/kg respectively for ten days. Group (7) was left untreated as a positive control group. The results showed a significant decrease at $p \leq 0.05$ in the numbers of parasite cell from the second day of treatment in all the groups treated with aqueous as well as ethanolic extract. This decrease gradually continued during the days of treatment until it reached zero on the last day of treatment for the dose of 500 mg/kg for both aqueous and ethanol extract. Histopathological study showed that *Entamoeba histolytica* causes mucosal damage, inflammation and necrosis for colon, while ethanolic extract of *Tamarindus indica* at dose 500 mg/kg repairs the parasite damage in comparison with a range of positive and negative control groups. Extracts of *Tamarindus indica* leaves indicated neither any toxic effect nor mortality up to the 1000 mg/kg.

INTRODUCTION: Approximately 50 million of the world populations are infected by *E. histolytica* and the reach a prevalence of 50% of the general population and it causes more than 100,000 deaths annually [1]. Metronidazole is used for the treatment of *E. histolytica* infection; this drug is resisted by drug resistance from *E. histolytica*, [2] however, this drug has some unwanted side effects such as headaches, metallic taste, nausea, vomiting as well as neurotoxicity, this makes it unpleasant to be taken by patients [3].

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.10(7).3250-56

The article can be accessed online on www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.10(7).3250-56

E. histolytic has registered some levels of resistance to most of the medicines rendering them ineffective [4]. In addition to that, the effective and safer antiprotozoal agents are urgently required [5]. In developing countries, plants are considered as popular because their products are safe and widely available at low cost [6]. This necessitates a search for a safer and effective alternative against *E. histolytica*. This study was performed to evaluate the efficacy of *T. indica* extracts against *E. histolytica* in rats and the study of histological changes after 10 days of treatment.

MATERIALS AND METHODS:

Collection and Identification of Plant: The leaves of *T. indica* were collected from the campus of Dr. Rafiq Zakaria College for Women. This plant was authenticated by herbarium of the Botany Department, Azad College, University of Dr.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD

Chemistry & Biology Interface, 2019, 9, 1, 71-82

RESEARCH PAPER

ISSN: 2249 –4820

CHEMISTRY & BIOLOGY INTERFACE

An official Journal of ISCB, Journal homepage: www.cbijournal.com

Dr. Rafiq Zakaria College for Women

Tetrabutyl ammonium hydrogen sulphate (TBAHS) Catalyzed Convenient and Greener Synthesis of Tetrahydrobenzo[a]xanthene-11-ones

Furqan Diwan,[a] Mohammad Mohsin,[a] Mohammad Shaikh,[b] Prasad Dixit,[c] Mazahar Farooqui[a]*

[a]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad- 431001, India.*
[b]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad-431001, India.*
[c]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad-431001, India.*
**Corresponding author. Tel: +919422214785*
*E-mail: * mazahar_64@rediffmail.com; dewanfurqan@rediffmail.com*
Received 2 Feburary 2019; Accepted 28 Feburary 2019

Abstract: A new efficient and green protocol was developed for the synthesis of Tetrahydrobenzo[*a*]xanthene-11-ones using Tetrabutyl ammonium hydrogen sulphate (TBAHS), as catalyst and water as a solvent under environmentally friendly conditions. The developed synthetic protocol represents a very simple and novel route for the synthesis of substituted Tetrahydrobenzo[*a*]xanthene-11-ones derivatives. the advantageous features of this methodology are environmentally friendly and operational simplicity, including excellent yields, shorter reaction time, mild reaction conditions and environmentally benign catalyst and solvent. Furthermore, analysis of the ADME parameters for synthesized compounds showed good drug like properties and can be developed as oral drug candidate.

Keywords: Tetrahydrobenzo[a]xanthene-11-ones; Tetrabutyl ammonium hydrogen sulphate (TBAHS); Water as a solvent; Green protocol; Operational simplicity.

Introduction

The present scenario of organic and green chemistry principles have encouraged the scientific community and researchers for the development of green and eco-friendly protocol for various organic transformation and motivated for the use of solid acid catalyst as an alternative to the conventional organic, mineral toxic and hazardous liquid acid catalyst like sulphuric acid, nitric acid, hydrochloric acid, methane sulphonic acid, trifluoroacetic acid likewise which cannot be use in stoichiometric amount. Whereas solid acid catalyst is economical industrially suitable and user-friendly owing their remarkable properties like negligible toxicity, easy availability, high stability and non-energy intensive methods for preparation and usage of the solid acid catalyst in the various organic transformation.

PRINCIPAL
Dr. Rafiq Zakaria College For Woman
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Short Communication

Synthesis and stability constant of schiff's bases of triazole

Ashvini Sonone, Mujahed Shaikh, Mazahar Farooqui, Ayesha Durrani*

Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India

Received: 27 December 2018 Revised: 26 January 2019 Accepted: 8 February 2019

Abstract

Objective: Keen of interest to study the stability constant, so that, we developed the environmentally benign protocol for the synthesis of Schiff bases and determine the stability constant of these Schiff bases by the pH-metric method. **Materials and Methods:** Schiff bases were prepared by refluxing the mixture of pyrazole aldehyde and triazole in dry methanol 80-90°C and 3-4 drops of acetic acid added. **Results:** synthesized imine linkage generalizes the scope of reaction. The yield of Schiff bases is very high in dry methanol. **Conclusion:** The proton-ligand stability constant has calculated by using Calvin-Bjerrum titration technique. The observation from titration curve is shown that the deviation of (A+L) at pH range 2.5 to 3.0. (A+L+M) curves were deviated at pH range for Ni(II) is 3.6-4.0, Co(II) is 3.0-3.5, Zn(II) is 3.2-3.6 & Mn(II) is 3.6-3.8. The change in color observed that, yellow to white with Ni(II) and Zn(II), and yellow to brown in Co(II) and Mn(II), this indicates the formation of complex between Ligand and Metal.

Keywords: Dry Methanol, reflux, triazole, stability constant, pH meter

Introduction

Schiff base named after Hugo Schiff. Schiff bases were form by condensation between aldehydes and amines. Schiff bases are containing C=N moiety which possess broad spectrum of biological activity and when they incorporated with metals in the form of metal-complexes then the degree of biological activity enhances. Schiff bases and amides derived from various heterocyclic compounds shows broad range of biological activities such as anticancer, antiviral, antimicrobial, anticonvulsant, antidepressant, angiotensin-II receptor antagonist, anti-inflammatory and anti-glycation activity. So far, modifications of the Schiff bases have improved potency and toxicity decreased.

Schiff base and their metal complexes have been extensively studied due to their wide range of applications including catalysis (Cozzi et al., 2004; Gupta et al., 2008), anti-corrosion agent (Antonijevic et al., 2008; Ahamad et al., 2010) crystal engineering (Krishnamohan et al., 2002), medicine (Soji et al., 2011; Eswaran et al., 2009). Bidentate Schiff bases are the very well known for co-ordination with various metal ions and have been attracted a great deal of interest in recent days because of their rich co-ordination chemistry. Schiff bases of 2-amino- 4,6 dihydroxypyrimidine and P-chlorobenzaldehyde reported to have variety of applications including biological, and pharmacological activity (Eswaran et al., 2009; Bringmann et al., 2004; Souza et al., 2007; Isfoor et al., 2009; Krishnara et al., 2008; Balsells et al., 1998; Türkkan et al., 2011), analytical and clinical fields (Nagajothi et al., 2012; Prashanthi et al., 2010; Gupta et al., 2012; Abraham et al., 2011).

The study of stability constant shows the complex formation between Metal-Ligand, while the study of Schwarzenback and Ackermann found that, as ring size increases the stability of chelates decreases (Durrani et al., 2011; Schwarzenbach et al., 1948).

Materials and Methods

Synthesis of Schiff bases

a) General procedure for the synthesis of Schiff bases of amide linkage [3a-3e]

Schiff bases were synthesis by refluxing pyrazole aldehyde 1.0 mmol and triazole 1.0 mmole in dry methanol by

*Address for Corresponding Author:
Ayesha Durrani
Department of Chemistry,
Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.) India
Email: drayeshamazhar101@gmail.com

DOI: https://doi.org/10.31024/ajpp.2019.5.3.28

2455-2674/Copyright © 2019, N.S. Memorial Scientific Research and Education Society. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

ChemTech

International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.11 No.11, pp 211-216, 2018

Stability constant study of transition metal complexes with pharmacologically active ligand(N-[-(4-chlorophenyl)methylene] nicotinohydrazide) by pH metric Technique

ZamzamTaher Omar (Al-Ahdal)*, Shivaji Jadhav, Mazahar Farooqui, Megha Rai

Department of Chemistry, Dr.Rafiq Zakaria College for Women, Aurangabad - 431001, MS, India.

Abstract : Pharmacologically active organic ligands (N-[-(4-chlorophenyl)methylene] nicotinohydrazide) synthesized through the condensation of equimolar mixture of Anti-mycobacterial agent(nicotinohydrazide)with aromatic aldehyde. The reaction progress and purity of organic ligands were verifying by thin layer chromatography. Formation of organic ligands was confirming with the help of MP, IR, ^{1}H NMR, ^{13}C NMR and elemental analysis.Further formation of complexes of transition elements like Mn(II), CO(II), Ni(II), Cu(II) and Zn(II) with organic ligand (Schiff base) N-[-(4-chlorophenyl)methylene] nicotinohydrazide, were studying by the pH-metric technique at 27±1°C in 70%(v/v) ethanol - water medium at 1M ($NaClO_4$) ionic strength. The stability constants of these binary complexes were evaluating and order of stability constant found as Zn (II) > Cu (II) >Ni (II) >Mn(II) > Co (II).

Key word : Binary complexation,N-[-(4-chlorophenyl)methylene]nicotinohydrazide, transition metals, pH metric technique.

Introduction

In the field of coordination chemistry, metal ions perform vital roles in biological processes. The mineral complexes have been studied with the basic Schiff links to be utilized in the biological, clinical, analytical and pharmacological fields[1].Schiff bases perform an important function in coordination chemistry because they easily form stable complexes with most transitional metal ions[2].Schiff bases have a broad assortment of applications in different regions such as biological chemistry, organic and inorganic chemistry[3].Schiff bases are now attracting the attention of medicinal chemist. Schiff base containing an amine group (–RC=N–) are commonly formed by the intensification of an initial amine with an active carbonyl[4]. Schiff bases and their complexes have a variety of applications in biological clinical and analytical fields[5].The complexation of Schiff base with transition metals increasethebiologicalactivity[6]. Isoniazid is anti-mycobacterial drug and used.

DOI= http://dx.doi.org/10.20902/IJCTR.2018.111121

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Mavkhanda, Juiblee Park,

Dr. Megha Rai
ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Roshanpura, Jubilee Park, Aurangabad

E-ISSN: 2278-3229

IJGHC, September 2018 - November 2018; Sec. A; Vol.7, No.4, 843-852.
DOI: 10.24214/IJGHC/GC/7/4/84352.

International Journal of Green and Herbal Chemistry

An International Peer Review E-3 Journal of Sciences

Available online at www.ijghc.com

Section A: Green Chemistry

Research Article

CODEN (USA): IJGHAY

Adsorption equilibrium, kinetics and thermodynamics of malachite green (MG) dye adsorption from aqueous solutions on to Bael (Aegle marmelos) bark

Changdeo Ahilaji Kadam[1] and Mazahar Farooqui[2]

[1]M. E. S., Shri Dnyaneshwar Mahavidyalaya, Newasa, District- Ahmednagar (MS), India.

[2]Dr. Rafiq Zakaria College for Women, Navkhanda, Aurangabad, Maharashtra 431 001, India.

Received: 20 September 2018; **Revised:** 13 October 2018; **Accepted:** 26 October 2018

Abstract: Present research article deals with use of cheap, highly efficient, easily available, novel adsorbent, Indian Bael (*Aegle marmelos*) bark for adsorption of toxic dye like Malachite Green (MG) from the aqueous solution. Different parameters such as temperature, contact time, initial dye concentration, adsorbent dose, pH and effect of salt were studied and optimal experimental conditions were maintained. Batch adsorption technique was used to optimize the process parameter. Obtained result shows that with increase in the adsorbent doses and contact time percentage adsorption of MG increases while decreases with increase in temperature, dye concentration and addition of salt. The MG adsorption on Bael bark untreated, treated with nitric acid and treated with formaldehyde were 96.64%, 97.46% and 97.39 % respectively at optimum pH 8. Adsorption data was well fitted with Langmuir and Freundlich isotherm models. Thermodynamic parameters indicate adsorption as an endothermic process with decrease in randomness.

Keywords: Bael bark (BBUT), Malachite Green, adsorption isotherms models, equilibrium, Kinetics, thermodynamics.

INTRODUCTION

The water soluble dyes are the major environmental pollutants which damage the whole ecosystem[1].

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

POLYCYCLIC AROMATIC COMPOUNDS
https://doi.org/10.1080/10406638.2019.1695637

Taylor & Francis
Taylor & Francis Group

Check for updates

An Efficient and Green Microwave-Assisted One Pot Synthesis of Imidazothiadiazoles in PEG-400 and Water

Dr. Rafiq Zakaria College for Women Aurangabad

Devendra S. Wagare[a], Ashwini Sonone[b], Mazahar Farooqui[b], and Ayesha Durrani[b]

[a]Department of Chemistry, Vivekanand College, Aurangabad, M.S, India; [b]Department of chemistry, Rafiq Zakaria College for Women, Aurangabad, M.S, India

ABSTRACT

Imidazothiadiazoles have attracted great deal of interest because of its several valuable diversified applications in the field of medicinal chemistry. Therefore, there is, requirement to design new environmentally benign protocol for the synthesis of benzo[d]imidazo[2,1-b]thiazoles. Herein, a simple, rapid, green and one-pot cascade process has been developed for synthesis of benzo[d]imidazo [2,1-b]thiazoles from the condensation of aromatic ketones, NBS (*N*-bromosuccinimide) and 5-(Biphenyl-4-yl)-1,3,4-thiadiazol-2-amine under microwave irradiation at 80–85 °C in PEG (polyethylene glycol)-400 and water as a green reaction medium. The product obtained in good to excellent yield (94-98%) in minimum reaction time.

ARTICLE HISTORY
Received 29 October 2018
Accepted 18 November 2019

KEYWORDS
Biphenylimidazo[2,1-b][1,3,4]thiadiazole; 5-(Biphenyl-4-yl)-1,3,4-thiadiazol-2-amine; PEG-400-water; microwave

1. Introduction

The bridgehead azaheterocycles, especially containing imidazole ring systems like imidazothiadiazoles show several valuable diversified pharmaceutical applications and have been attracted great deal of interest of the organic chemists since last many years because of their wide medicinal applications. Biphenylimidazo[2,1-b][1,3,4]thiadiazole derivatives show antitubercular,[1] antiulcer,[2] antibacterial activities.[3] Imidathiadiazoles also act as anticonvulsant, anxiolytic agents,[4] anti-asthmatic,[5] antisecretory,[6] and antimicrobial agents. Among the important heterocyclic compounds, 1,3,4-thiadiazoles are one of the important structural fragments in medicinal chemistry show different biological activities, such as $^{+}Ca^{2+}$ channel blockers,[7] anti-inflammatory active agents,[8] antitubercular activity,[9] anti-infectious,[10] antibacterial,[11] antidepressants,[12] and anti-cancer agents.[13](Figure 1)

The broad spectrum anthelmintic agent such as **Tetramisole (1)** open the various routes for the synthesis of imidazo[2,1-b][1,3,4]thiadiazoles.[14] ***Levamisole*** **(2)** appears to be the most effective in patients with small tumor burdens and it acts by stimulating the responsiveness of lymphocytes to tumor antigens.[15] In recent years, microwave irradiation has emerged as a powerful and well controlled heating source for various organic reactions due to it reduces reaction times and increases the product yields.[16,17] Aqueous phase one-pot multicomponent reactions emerged as a powerful tool in organic synthesis, especially in green chemistry.[18–19] PEG-400 is nontoxic, easily available, inexpensive, nonionic liquid medium of low volatility, thermally stable, reusable medium use in green chemistry and also acts as a phase transfer catalyst.[20,21] Different number of methods have been reported for the synthesis of this important framework; the main part of the protocols involves initial coupling reactions between endocyclic nitrogen of 5-(Biphenyl-4-yl)-

CONTACT Ayesha Durrani dswagare@gmail.com Department of chemistry, Rafiq Zakaria College for Women, Aurangabad 431001 (M.S.), India.
Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/gpol.
© 2019 Taylor & Francis Group, LLC

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry

Research Article

Rapid and environmentally benign protocol for the synthesis of pyrazolyl-4-thiazolidinone

Mujahed Shaikh*, Devendra Wagare, Mazahar Farooqui, Ayesha Durrani

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India

Received: 26 December 2018 Revised: 20 January 2019 Accepted: 11 February 2019

Abstract

Objective: The multi-component one-pot approach becomes the need of the research due to its offer advantage like atom economy, minimum reaction time and most important one time workup. Therefore, there is an urgent need to design and developed the efficient and environmentally benign one-pot protocol for the synthesis of pyrazolyl-4-thiazolidinone. **Material and Methods:** Herein, we have developed a facial and convenient one-pot protocol for the synthesis of pyrazolyl-4-thiazolidinone by irradiating the mixture of isonicotinohydrazide, pyrazolyl carbaldehydes and thioglycolic acid (mercaptoacetic acid) in glycerol at 400 watt under microwave irradiator with 70-75°C temperature. The method provides a better alternative for the existing methods as it involves utilization of in-situ-generated imine linkage, avoids the use of toxic volatile organic solvents, easy work-up, reduces the reaction time to obtain excellent yield and most impotant the reaction is completed with reactant hence we have not use any external concentrated acid to form the imine linkage. **Results:** Use of glycerol gives us higher yield, lesser reaction time and the most important it will enhance the reaction due to it forms hydrogen bonding network. The results obtained with excellent yield. **Conclusion:** This protocol are operatsonally simple, rapid, 100% atom economy, potential for recycling of the reaction medium, good to excellent yields, no need to separate intermediate precursor and finally agreement with green Chemistry principles, all these aspects make the designed protocol more reliable and attractive and alternative to existing methods.

Keywords: Pyrazole carbaldehyde, glycerol, thioglycolic acid, green, one-pot

Introduction

The drug discovery relies on the interface of chemical and biological diversity and the most spectacular advances in medicinal chemistry have made in the last few years, where the heterocyclic compound played an important role in regulating biological activities and wide range pharmacological properties. The heterocyclic compounds are an evergreen field in the branch of organic chemistry, which attracts to work not only on natural product but also in synthetic chemistry. Schiff bases are versatile C=N (Imine) containing compounds possessing broad spectrum of biological activity and shows antibacterial, antifungal, anti-inflammatory activity antitumor and also, they are giving many biochemical, clinical and pharmacological properties (Gupta et al., 1998; Isloor et al., 2009; Krishnaraj et al., 2008; Balsells et al., 1998; Eswaran et al., 2009; Przybylski et al., 2009). Schiff bases are formed when any primary amine reacts with an aldehyde under specific conditions. It shows the activity like anti-corrosion agent, Medicine, biological and pharmacological activity.

Schiff bases and amides derived from various heterocyclic compounds displayed broad range of biological activities such as anticancer, antiviral, antimicrobial, anticonvulsant, antidepressant, angiotension-II receptor antagonist, and anti-inflammatory and anti-glycation activity. The modifications of the Schiff bases have proven highly effective with improved potency and lesser toxicity. Thiazolidines derivatives shows pharmacological, medicinal and biological applications like antibacterial, (Soowane and Srivastava, 2008; Mistry and Desai, 2004, Sayyed et al., 2006; Kohli et al., 2007; Mulwad and Abid, 2008; Sattigeri et al., 2005) analgesic, (Fraga-Dubreuil and Bazureau, 2003) anticancer; (Prabhaker et al., 2004) anti-inflammatory, (Ottana et al., 2005; Venkatesh and Pandeya, 2009; Vazzana

* *Address for Corresponding Author:*
Mujahed Shaikh
Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India
Email: shkh_mujahed@rediffmail.com

DOI: https://doi.org/10.31024/ajpp.2019.5.3.21

2455-2674/Copyright © 2019, N.S. Memorial Scientific Research and Education Society. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/)

Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Prof.
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Aurangabad

Short Communication

Synthesis and stability constant of schiff's bases of triazole

Ashvini Sonone, Mujahed Shaikh, Mazahar Farooqui, Ayesha Durrani*

Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India

Received: 27 December 2018 Revised: 26 January 2019 Accepted: 8 February 2019

Abstract

Objective: Keen of interest to study the stability constant, so that, we developed the environmentally benign protocol for the synthesis of Schiff bases and determine the stability constant of these Schiff bases by the pH-metric method. **Materials and Methods:** Schiff bases were prepared by refluxing the mixture of pyrazole aldehyde and triazole in dry methanol 80-90°C and 3-4 drops of acetic acid added. **Results:** synthesized imine linkage generalizes the scope of reaction. The yield of Schiff bases is very high in dry methanol. **Conclusion:** The proton-ligand stability constant has calculated by using Calvin-Bjerrum titration technique. The observation from titration curve is shown that the deviation of (A+L) at pH range 2.5 to 3.0. (A+L+M) curves were deviated at pH range for Ni(II) is 3.6-4.0, Co(II) is 3.0-3.5, Zn(II) is 3.2-3.6 & Mn(II) is 3.6-3.8. The change in color observed that, yellow to white with Ni(II) and Zn(II), and yellow to brown in Co(II) and Mn(II), this indicates the formation of complex between Ligand and Metal.

Keywords: Dry Methanol, reflux, triazole, stability constant, pH meter

Introduction

Schiff base named after Hugo Schiff. Schiff bases were form by condensation between aldehydes and amines. Schiff bases are containing C=N moiety which possess broad spectrum of biological activity and when they incorporated with metals in the form of metal-complexes then the degree of biological activity enhances. Schiff bases and amides derived from various heterocyclic compounds shows broad range of biological activities such as anticancer, antiviral, antimicrobial, anticonvulsant, antidepressant, angiotension-II receptor antagonist, anti-inflammatory and anti-glycation activity. So far, modifications of the Schiff bases have improved potency and toxicity decreased.

Schiff base and their metal complexes have been extensively studied due to their wide range of applications including catalysis (Cozzi et al., 2004; Gupta et al., 2008), anti-corrosion agent (Antonijevic et al., 2008; Ahamad et al., 2010) crystal engineering (Krishnamohan et al., 2002), medicine (Siji et al., 2011; Eswaran et al., 2009). Budentate Schiff bases are the very well known for co-ordination with various metal ions and have been attracted a great deal of interest in recent days because of their rich co-ordination chemistry. Schiff bases of 2-amino- 4,6 dihydroxypyrimidine and P-chlorobenzaldehyde reported to have variety of applications including biological, and pharmacological activity (Eswaran et al., 2009; Bringmann et al., 2004; Souza et al., 2007; Idoor et al., 2009; Krishnara et al., 2008; Raiselis et al., 1998; Turkkan et al., 2011), analytical and clinical fields (Nagarolle et al., 2012; Prashanthi et al., 2010; Gupta et al., 2012; Abraham et al., 2011).

The study of stability constant shows the complex formation between Metal-Ligand, while the study of Schwarzenback and Ackermann found that, as ring size increases the stability of chelates decreases (Durrani et al., 2011; Schwarzenbach et al., 1948).

Materials and Methods

Synthesis of Schiff bases

a) General procedure for the synthesis of Schiff bases of amide linkage [3a-3e]

Schiff bases were synthesis by refluxing pyrazole aldehyde 1.0 mmol and triazole 1.0 mmole in dry methanol by

* *Address for Corresponding Author:*
Ayesha Durrani
Department of Chemistry,
Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India
Email: dayeshadurrani301@gmail.com

DOI: https://doi.org/10.31024/ajpp.2019.5.3.28

1455-2674/Copyright © 2019, N.S. Memorial Scientific Research and Education Society. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Dr. Rafiq Zakaria College for Women * Aurangabad *

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.)

International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.11 No.11, pp 211-216, 2018

Stability constant study of transition metal complexes with pharmacologically active ligand(N-[-(4-chlorophenyl)methylene] nicotinohydrazide) by pH metric Technique

ZamzamTaher Omar (Al-Ahdal)*, Shivaji Jadhav, Mazahar Farooqui, Megha Rai

Department of Chemistry, Dr.Rafiq Zakaria College for Women, Aurangabad - 431001, MS, India.

Abstract : Pharmacologically active organic ligands (N-[-(4-chlorophenyl)methylene] nicotinohydraziде) synthesized through the condensation of equimolar mixture of Anti-mycobacterial agent(nicotinohydrazide)with aromatic aldehyde. The reaction progress and purity of organic ligands were verifying by thin layer chromatography. Formation of organic ligands was confirming with the help of MP, IR, ^{1}H NMR, ^{13}C NMR and elemental analysis.Further formation of complexes of transition elements like Mn(II), CO(II), Ni(II), Cu(II) and Zn(II) with organic ligand (Schiff base) N-[-(4-chlorophenyl)methylene] nicotinohydraziде, were studying by the pH-metric technique at 27±1°C in 70%(v/v) ethanol - water medium at 1M ($NaClO_4$) ionic strength. The stability constants of these binary complexes were evaluating and order of stability constant found as Zn (II) > Cu (II) >Ni (II) >Mn(II) > Co (II).

Key word : Binary complexation,N-[-(4-chlorophenyl)methylene]nicotinohydraziде, transition metals, pH metric technique.

Introduction

In the field of coordination chemistry, metal ions perform vital roles in biological processes. The mineral complexes have been studied with the basic Schiff links to be utilized in the biological, clinical, analytical and pharmacological fields[1].Schiff bases perform an important function in coordination chemistry because they easily form stable complexes with most transitional metal ions[2].Schiff bases have a broad assortment of applications in different regions such as biological chemistry, organic and inorganic chemistry[3].Schiff bases are now attracting the attention of medicinal chemist. Schiff base containing an amine group (–RC=N–) are commonly formed by the intensification of an initial amine with an active carbonyl[4]. Schiff bases and their complexes have a variety of applications in biological clinical and analytical fields[5].The complexation of Schiff base with transition metals increasethebiologicalactivity[6]. Isoniazid is anti-mycobacterial drug and used.

DOI= http://dx.doi.org/10.20902/IJCTR.2018.111121

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

Dr. Rafiq Zakaria College for Women

ECB

SYNTHESIS AND BIOLOGICAL ACTIVITIES OF NEW TETRAHYDROQUINOLINE AND PYRIMIDINE DERIVATIVES

Pravin N. Chavan,[a] Dattatraya N. Pansare,[b] Shivaji L. Jadhav[c] and Megha J. Rai[d]*

Principal Dr. Rafiq Zakaria College for Women

Keywords: Tetrahydroquinoline, pyrimidine, biological activity.

A series of new tetrahydroquinoline derivatives **(4a-j)** were prepared by one-pot multicomponent, [4+2] cycloaddition route from 4-aminonaphthalene, aromatic aldehydes and dihydrofurane (DHF) by using $InCl_3$ catalyst under reflux temperature and also pyrimidine derivatives **(5a-n)** were prepared by the same route from benzimidazole, aromatic aldehydes and maleic anhydride by using $InCl_3$ catalyst under ultrasonic irradiations. The synthesized tetrahydroquinoline and pyrimidine derivatives were characterized (IR, ^{1}H NMR, ^{13}C NMR). The synthesized tetrahydroquinoline and pyrimidine derivatives have been evaluated for antimicrobial, anti-tuberculosis and anti-inflammatory activities.

* Corresponding Authors
Fax: +91 02140 250348
E-Mail: chemistryp141286@gmail.com
[a] Department of Chemistry, Doshi Vakil College, Goregaon, District-Raigad, (MS), India.
[b] Department of Chemistry, Deogiri College, Station road Aurangabad, (MS), India.
[c] Department of Chemistry, Taras College, Paithan, Aurangabad, (MS), India.
[d] Department of Chemistry, Dr. Rafiq Zakaria College for Woman, Aurangabad, (MS), India.

INTRODUCTION

Now a day, a huge number of a heterocyclic compound discovered through various eco-friendly methods like one-pot multicomponent reaction, ultrasonic irradiations technique or Diels-Alder reactions.[1-3] Tetrahydroquinoline and pyrimidine derivatives are broadly used in medicinal chemistry. They showed a huge number of important biological properties such as antimicrobial,[4-5] antimalarial,[6-10]analgesic,[11] anthelmintic,[12] antitumor,[13] anti-inflammatory,[14] antiviral[15-17]and anticancer[18] activity. Keeping the view of the biological importance of heterocyclic compounds,[19] we studied the biological activity of tetrahydroquinoline[20] pyrimadine,[21] thiazolone,[22] and benzenesulfonamide[23] derivatives.

EXPERIMENTAL

The starting materials and various solvents were commercially available (Sigma-Aldrich and Avra labs). Reaction courses were monitored by TLC on silica gel precoated F254 Merck plates. Developed plates were examined with UV lamps (254 nm). Melting points were recorded on SRS Optimelt, melting point apparatus and are uncorrected. IR spectra were recorded on an FT-IR (Bruker). ^{1}H NMR spectra were recorded on a 400 MHz Bruker spectrometer and were recorded in DMSO-d_6 solvent ^{13}C NMR spectra were recorded in DMSO-d_6 solvent on a 100 MHz Bruker spectrometer. Chemical shifts are reported as δ ppm units (TMS).

The following abbreviations are used; singlet (s), doublet (d), triplet (t), quartet (q), multiplet (m) and broad (br). Mass spectra were taken with Micromass-QUATTRO-II of WATER mass spectrometer.

General procedure for synthesis of tetrahydroquinoline derivatives

In around bottom flask, 4-aminonaphthalene (0.1 mol), aromatic aldehyde (0.1 mol), dihydrofurane (DHF) (0.1 mol) and catalyst - $InCl_3$ (20 mol %) in EtOH as solvent (5 mL) were refluxed at for 7 h. The reaction condition was checked by employing TLC technique, using ethyl acetate: hexane (5:5) as solvents. After completing reaction, reaction mixture was cooled at room temperature. For crystallization, 10 mL methanol was added to the reaction mixture and then cooled at 22 °C, following stirring for 20 minutes. Products were filtered using G_3 sintered crucible. Products were recrystallized from ethyl alcohol.

11-(2,5-Dimethoxyphenyl)-2,3,3a,10,11,11a-hexahydrobenzo[*k*]furo[2,3-*c*]quinoline (4a)

Blackish grey crystal, m.p. 215-218 °C. FT-IR (KBr cm^{-1}): 3324 (-NH), 2910 (-CH), 1568 (-C=C- aromatic), 1210 (ether), ^{1}H NMR 400 MHz, DMSO-d_6) 9.96 (s, 1H, D_2O exchangeable -NH), 8.32-7.45 (m, 6H, Ar), 6.9-7.10 (m, 2H,Ar), 6.75 (s, 1H, Ar),4.8 (t, 1H, -CH), 4.38 (d, 1H, -CH), 3.77-3.85 (m, 2H, -CH_2), 3.8-(s, 6H, -CH_3), 2.43 (m, 1H, -CH), 1.1-1.7(m, 2H, CH_2).^{13}C NMR (100 MHz, DMSO-d_6): 189.51, 156.24, 153.76, 151.34, 127.72, 125.26, 124.96, 112.90, 111.70, 111.34, 110.34, 104.37, 93.19, 78.0, 76.0, 56.10, 40.0, 38.0, Mass (m/z): $[M+1]^+$: 361.16

11-(4-Cyanophenyl)-2,3,3a,10,11,11a-hexahydrobenzo[*k*]furo[2,3-*c*]quinoline (4b)

Light yellow crystals, m.p 250-253 °C. FTIR (KBr cm^{-1}): 3372 (-NH), 2965 (-CH), 2183 (-CN), 1559 (-C=C- aromatic), 1215 (ether).^{1}H NMR 400 MHz, DMSO-d_6) 10.14 (s, 1H, D_2O exchangeable -NH), 8.33- 7.45(m, 6H,

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

pH-Metric Study of Stability Constant of ternary Complexes involving transition Metals, Nicotinamide and Penicillamine

D.D. Kayande[1], Shivaji Jadhav[2], Mazahar Farooqui[3], Megha Rai[3]

[1] S.B.E.S. College, Aurangabad.

[2]Tarai Arts and Science College, Paithan, Aurangabad.

[3]Dr. Rafiq Zakaria College for Women, Aurangabad (M.S), India.

drkayande@gmail.com, dr.shivaji1985@gmail.com

Dr. Rafiq Zakaria College for Women ★ Aurangabad

Abstract

Role of Pharmacologically important compounds (Nicotinamide and Penicillamine) as ligand has been focused on the coordination complexes with transition metal ions such as Fe (III), Co (II), Ni (II), Cu (II) and Zn (II). Complexation of metal ions with Nicotinamide as primary ligand whereas Penicillamine as secondary ligand has been evaluated by the potentiometric technique at 25±0.1°C and 0.1M ($NaClO_4$) ionic strength. The protonation constants of the ligand were calculated from the half-integral method of potentiometric pH titrations data of solutions according to Irving and Rossetti's method.

Keywords. Stability constant, Nicotinamide, Penicillamine, mixed ligand complexes.

Introduction:

Various functional groups, active sites present in bioactive compounds able to bind metal ions are present in living organisms. As compare to original biomolecule, Mixed Metal complexes of biomolecule are found to be more effective. Due to this importance of complexation of metal ions with biomolecule most of the researchers are attracted towards mixed metal complexation study of pharmacologically active compounds and it plays life-sustaining role in the bio - chemical activity [1-3]. It is widely used in various fields such as biological processes, pharmaceuticals, separation techniques, analytical processes etc. Complex formation of metal ions of biological importance with amino acids, small peptide and their derivatives are of great significance, as many of these systems offer simple models of otherwise.

Complex metal protein equilibria are occurring in enzymatic processes. At low pH, the peptide group undergoes both protonation and metallation at the carbonyl oxygen atom. Metal ion coordination with amide nitrogen atom takes place only upon substitution of the amide proton, for which primary ligating site at a chelating position is, however, essential G.N. Mukherjee and P. K. Chakraborty studied the effect of a sulfinamide group at a chelating position on the modes of Cu(II) ion coordination with a series of N- Benzene Sulphonyl derivatives [4].

Nicotinamide is a form of vitamin B3 found in food and used as a dietary supplement and medication. As a supplement, it is used by mouth to prevent and treat pellagra. Nicotinamide was discovered between 1935 and 1937. It is on the World Health Organization's List of Essential Medicines, the most effective and safe medicines needed in a health system. The structure of nicotinamide consists of a pyridine ring to which a primary amide group is attached in the *meta* position. It is an amide of nicotinic acid Penicillamine is a medication primarily used for the treatment of the patients which is suffering through kidney stones that have high urine cysteine levels, rheumatoid arthritis, and various heavy metal poisonings. It is taken by mouth. It is also used as a chelating agent. In Wilson's disease, a rare genetic disorder of copper metabolism, Penicillamine treatment relies on its binding to accumulated copper and elimination through urine.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

J. Biol. Chem. Chron. 2019, 5(1): 91-95
ISSN (Print): 2454 – 7468
ISSN (Online): 2454 – 7476
www.eresearchco.com/jbcc/

Determination of Metal-Ligand Stability Constant of Transition Metal Complexes with Pharmacologically Active Ligand N-[(E)-(2-Nitrophenyl)methylen]isonicotinohydrazid

Zamzam Taher Omar (Al-Ahdal)[1], Shivaji L. Jadhav[2] and Megha J. Rai[1]*

[1]*Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, MS, INDIA*
[2]*Tarai College Paithan, Aurangabad - 431001, MS, INDIA*

Correspondence: E-mail: drmegha08@gmail.com & zamzamomar1984@gmail.com

DOI: http://dx.doi.org/10.33980/jbcc.2019.v05i01.015

(Received 27 Feb, 2019; Accepted 11 Apr, 2019; Published 16 Apr, 2019)

ABSTRACT: Proton-ligand association constants of organic ligand N-[(E)-(2-Nitrophenyl) methylen]isonicotinohydrazid with Mn (II), Co (II), Ni (II), Cu (II) and Zn (II) metal ions have been studied by pH-metric technique at 27±1C in 70%(v/v) ethanol – water medium at 1M ($NaClO_4$) ionic strength. Organic ligand was synthesized by condensation of equimolar mixture of Anti-mycobacterial agent with aromatic aldehyde. The reaction progress and purity of organic ligands were confirmed by thin layer chromatography. Formation of organic ligands was confirmed with the help of MP, IR, ^1H NMR, ^{13}C NMR and elemental analysis. The stability constants of these binary complexes were evaluated and order of stability constant found as Zn (II) >Ni (II) > Cu (II) > Mn (II) > Co (II).

Keywords: pH-metric technique, Binary complexation, N-[(E)-(2-Nitrophenyl)methylen]isonicotinohydrazid and transition metals.

INTRODUCTION: In the field of coordination chemistry, metal ions carry out spirited roles in biological processes. Schiff bases are now well known for their importance in biological fields such as anticancer, antimicrobial anti-inflammatory, analgesic and pesticidal agents, so schiff bases have a broad variety of applications in different region such as pharmacological activity, organic and inorganic chemistry.[1-2] Schiff bases are assignment in coordination chemistry because they easily form stable complexes with most transitional metal ions.[3&4] Schiff bases containing an amine group (–RC=N–) are usually formed by the condensation of an initial amine with an active carbonyl.[5&6] Isoniazid is a starting point in the search for new vital derivatives and analogues such as hydrazones which have been informed as active anti-tuberculosis drugs, also it is anti-mycobacterial drug and used also primarily as a tuberculostatic.[7-9] The chemistry of Metal-drug coordination compounds is more spread now than before especially in the range of more biologically active drugs.[10-12] The complexes have been studied with the basic Schiff links to be applied in the clinical, biological, analytical and pharmacological fields.[13-46] The complexation of Schiff base with transition metals promote the biological activity.[17-20] PH-metric study is one of the best vastly used technique because it has several distinction such as, it is easy to understand and work, cheap technique etc. A pH meter was used to find the stability constant which is advantageous for the formation of a complex in solution.[21-32] Metal ions are known to affect the action of many drugs.[33] The stability constant of complexes has been found to be greater than zero, if all the possible stability constants for a given system have been determined that means it is possible to calculate the equilibrium activity of complexes.[34]

The stability of metal complexes with medicinal drugs perform greater role in the biological and chemical activity.

Due to these valuable findings observed in literature review and very less work observed on complexation of 2-nitrobenzaldehyde. Present work was planned and well executed for the preparation of organic ligands through the condensation of 2-nitrobenzaldehyde with isoniazid Complexation of newly synthesized organic ligand was carried out with transition metals [Mn(II), Co(II),Ni(II),Cu(II) and Zn(II)] to determine the order of stability constants by using pH-metric technique.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Megha Rai
ASSISTANT PROFESSOR

Chemistry & Biology Interface, 2018, 8, 2, 128-134

RESEARCH PAPER

ISSN: 2249 –4820

CHEMISTRY & BIOLOGY INTERFACE

An official Journal of ISCB, Journal homepage: www.cbijournal.com

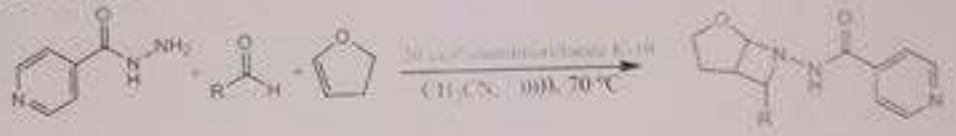
Synthesis of isonicotinamide derivatives viaone pot three-component Cycloaddition Reaction

Pravin N. Chavan[1]*, Shivaji L. Jadhav[2], D.D. Kayande[3], Megha J. Rai[2]

[1]DashiVakilCollege, Goregaon, District - Raigad, 402103 (MH) India.
[2]Dr. Rafiq Zakaria College for Women, Aurangabad - 431001. (MH) India.
[3]S.B.E.S College, Aurangabad - 431001. (MH) India.
Email: chemistryp141286@gmail.com, drmegha08@gmail.com

Received 5 March 2018, Accepted 14 April 2018

Abstract: Herein we report a synthesisof N-(7-R)-2-oxa-6-azabicyclo[3.2.0]heptan-6-yl)isonicotinamide derivatives **4(a-n)**from isoniazide (**1**), aromatic aldehyde**2(a-n)** and 2,3-dihydrofuran (**3**), by novel methodology in which, one pot three-component [2π+2π] cycloaddition reaction were carried out in the presence of Montmorillonite K-10 (green) catalyst under ultrasonic irradiation and targeted compounds were isolated in good to excellent yields.



R= Aromatic aldehydes

Keywords: Cycloaddition, Substituted azitidine, Aromatic Aldehydes, Montmorillonite K-10 and Ultra-sound irradiation.

Introduction:

Now-a-days cycloaddition reactions are a center of heterocyclic synthesis due to its unique properties of cyclic ring formation in single step **[1-2].** Azetidineis one of the most important heterocycles exhibits wide spectrum of biological and pharmaceutical properties such as Antitubercular **[3]** Antimicrobial **[4-6],** Cardiovascular **[7],** Anti-inflammatory**[8],** and Anticonvulsant**[9].** Cycloaddition reactions like [4π+2π] and [2π+2π] using green catalysts have been extensively studied in the last decades as the most straight forward approach for the

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASSISTANT

CODEN [USA]: IAJPS ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

Available online at: http://www.iajps.com

Research Article

SYNTHESIS OF SUBSTITUTED AZITIDINE DERIVATIVES VIA ONE POT THREE-COMPONENT (2H+2H) CYCLOADDITION REACTION UNDER ULTRASONIC IRRADIATION METHOD

Pravin Chavan[1]*, Shivaji Jadhav[2], Megha Rai[2]

[1] Department of Chemistry, Doshi Vakil Arts and G.C.U.B. Science and Commerce College, Goregaon-Raigad, (MS), India.

[2] Department of Chemistry, Dr. Rafiq Zakaria College for Women, Navkhanda, Jubilee Park, Aurangabad, (MS), India.

Abstract:

Keywords:

Corresponding Author:
Pravin Chavan,
Doshi Vakil Arts and G.C.U.B. Science and Commerce College, Goregaon, At/P. Goregaon, Tal. Mangaon, Dist. Raigad (MS) 402105.
e-mail: chemistry24186@gmail.com

QR code

Please cite this article in press as Pravin Chavan et al. Synthesis of Substituted Azitidine Derivatives via One Pot Three-Com. (2H+2H) Cycloaddition Reaction under Ultrasonic Irradiation Method. IAJPS, 05 (01), 817-822.

Dr. Megha Rai
ASSISTANT PROFESSOR

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Chemistry & Biology Interface, 2019, 9, 1, 71-82

RESEARCH PAPER ISSN: 2249 –4820



CHEMISTRY & BIOLOGY INTERFACE

An official Journal of ISCB, Journal homepage: www.cbijournal.com

Tetrabutyl ammonium hydrogen sulphate (TBAHS) Catalyzed Convenient and Greener Synthesis of Tetrahydrobenzo[a]xanthene-11-ones

Furqan Diwan,[a] Mohammad Mohsin,[b] Mohammad Shaikh,[b] Prasad Dixit,[c] Mazahar Farooqui*[b]

[a]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad- 431001, India.*
[b]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad-431001, India.*
[c]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad-431001, India.*
**Corresponding author. Tel: +919422214785*
*E-mail: * mazahar_64@rediffmail.com; diwanfurqan@rediffmail.com*
Received 2 Feburary 2019; Accepted 28 Feburary 2019

Abstract: A new efficient and green protocol was developed for the synthesis of Tetrahydrobenzo[*a*]xanthene-11-ones using Tetrabutyl ammonium hydrogen sulphate (TBAHS), as catalyst and water as a solvent under environmentally friendly conditions. The developed synthetic protocol represents a very simple and novel route for the synthesis of substituted Tetrahydrobenzo[*a*]xanthene-11-ones derivatives. the advantageous features of this methodology are environmentally friendly and operational simplicity, including excellent yields, shorter reaction time, mild reaction conditions and environmentally benign catalyst and solvent. Furthermore, analysis of the ADME parameters for synthesized compounds showed good drug like properties and can be developed as oral drug candidate.

Keywords: Tetrahydrobenzo[a]xanthene-11-ones; Tetrabutyl ammonium hydrogen sulphate (TBAHS); Water as a solvent; Green protocol; Operational simplicity.

Introduction

The present scenario of organic and green chemistry principles have encouraged the scientific community and researchers for the development of green and eco-friendly protocol for various organic transformation and motivated for the use of solid acid catalyst as an alternative to the conventional organic, mineral toxic and hazardous liquid acid catalyst like sulphuric acid, nitric acid, hydrochloric acid, methane sulphonic acid, trifluoroacetic acid likewise which cannot be use in stoichiometric amount. Whereas solid acid catalyst is economical industrially suitable and user-friendly owing their remarkable properties like negligible toxicity, easy availability, high stability and non-energy intensive methods for preparation and usage of the solid acid catalyst in the various organic transformation.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

IJSRCH

International Journal of Scientific Research in Chemistry (IJSRCH) | Online ISSN: 2456-8457
© 2018 IJSRCH | Volume 3 | Issue 2

Synthesis and Characterization of Sulphur Containing Extractant

Uzma Parveen K. Shaikh

Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

ABSTRACT

New sulphur containing extractant was synthesized and characterized. The synthesized extractant belongs to the class Schiff's base, 4-(4-dimethylaminobenzylideneimino)-5-methyl-4H-1, 2, 4-triazole-3-thiol. The class of Schiff bases has been reported as chelating agent for many transition metal ions. The efficiency of synthesized extractant was checked by extracting traces of gold (III) from synthetic mixtures and some gold alloys, by using solvent extraction technique. Extractant shows selectivity towards gold (III) and highly efficient.

Keywords : Extractant, Gold (III), Solvent Extraction, Hydrochloric Acid Media.

I. INTRODUCTION

Schiff base was first reported by Hugo Schiff in 1864 [1]. Schiff bases can be prepared by condensing carbonyl compounds and amines in different conditions and in different solvents with the elimination of water molecules. The class of Schiff bases has been reported as chelating agent for many transition metal ions [2-4].

The most important factor in the solvent extraction of metals is high selectivity of the extractant for the recovery of a specified metal. In order to develop or design highly selective reagents for precious metals, it is necessary to take into account the highly favored complexation due to the chelate effect and the HSAB principle. The term "HSAB principle" which was suggested by R.G. Pearson [5] refers to the rule that "hard acids" prefers to associate with "hard bases", and "soft acids" prefers to associate with "soft bases". Since the sulphur atom has a high affinity for so-called "soft metals" such as gold, palladium, and ruthenium, a sulphur containing reagent is expected to have a high selectivity for these metals. Solvent extraction is one of the most efficient separation technique used for extraction of metals. As compare to other separation techniquet, solvent extraction is easy and cost effective technique, it require only a simple separatory funnel [6,7]. Gold belongs to precious metal family or platinum group metals which includes ruthenium, rhodium, palladium, platinum, gold, osmium and iridium. These metals are better known for their uses in art, jewelry, coinage and pharmaceuticals (gold and platinum). These metals are also known for their role as investments and a store of value.

II. METHODS AND MATERIAL

Synthesis of 4-(4-dimethylaminobenzylideneimino)-5-methyl-4H-1, 2, 4-triazole-3-thiol (DMABIMTT)

Step I: Formation of 3-methyl-4-amino-5-mercapto-1, 2, 4-triazole [8]

A mixture of thiocarbohydrazide and glacial acetic acid was heated and refluxed for 4h., within an hour of refluxing, a solid started separating from the clear solution. It was then crystallized from water with shining faint yellow crystals (M.P. 203 °C).

Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

79

ISSN:2348-7143
February 2019
RESEARCH JOURNEY International Multidisciplinary E-Research Journal
Impact Factor (SJIF) - 6.261 | Special Issue 120 : Recent Developments in Life Sciences for Human Welfare

213

Study of post harvest mycoflora associated with rot diseases of Sweet orange

Sumia Fatima
Dr. Rafiq Zakaria College for Women,
Aurangabad. (M.S.) India

Abstract :
Sweet orange is the second largest fruit of India which is extensively cultivated in all states. The oranges of Nagpur Maharashtra are famous throughout the country and abroad. About 20-25 percent loss of fruits was due to poor storage systems. In India, 2.95 million hectors area occupied by the fruit crop (Sattar, A. And Malik, S. A. , 1939).

Introduction :

Sweet orange is the second largest fruit of India which is extensively cultivated in all states. The oranges of Nagpur Maharashtra are famous throughout the country and abroad. The states of India cultivated sweet oranges in large scale are Punjab, Haryana, Maharashtra, Rajasthan, Karnataka, Andhra Pradesh, and Uttar Pradesh, Maharashtra rank first in production of sweet oranges in India. It is highly nutritious, very good for instant energy, Rai, R. N. Lal, B. and Arya, A. (1982a). It is antifungal, antibacterial and antiaging fruit. It is the best source of vitamin –C and minerals such as Calcium, Phosphorous and Iron. The varieties grown on commercial basis are Pineapple, Mosambi, Satgaddi and Jaffa. The fruits are harvested with fruit picking device. Proper handling is very important. It is attacked by different types of pathogenic organisms, before and after harvest.

During transportation and storage period many of the diseases has been observed the symptoms caused by different types of pathogens. There is great variation in the type of symptoms that depends on interaction of infectious agent with fruit tissue. It has recorded that 30-40% of the fruits get injured during transpiration and 20-25 percent loss of fruits was due to poor storage systems. In India, 2.95 million hectors area occupied by the fruit crop (Saha, J. C., (1945).). In Indian market the losses due to post-harvest diseases are more due to absence of adequate and proper go downs.

Methodology :

During the survey the infected sweet oranges were collected in a sterile polythin bag from market and brought to laboratory for further investigations. The infected fruits were collected in sterile polythin bag. Separate bag used for each fruit.

The mycoflora responsible for post harvest rot of oranges was isolated on solid PDA (Potato Dextrose Agar) medium. The medium was sterilized in autoclave at 120 C° for 15 minutes. A small piece of infected fruit was removed by sterile forceps and inoculated on to the PDA amended petriplate in sterile conditions. The inoculated plates were incubated at room temperature 22 ± 1 C°. The plates were observed daily for arrival of fungus from inoculated material. The fungus causing post harvest diseases of oranges was purified by repeated transfer of single hyphal thread on PDA (Potato Dextrose Agar) medium in sterile condition.

The fungi responsible for post harvest diseases was identified on the basis of growth pattern of colony, hyphal characteristics, shape and colour of spores. The pathogeneoity test was carried out by the method proposed by Kochs postulates. The fungal pathogens isolated from infected oranges were purified by single spore inoculation method.

Table: Postharvest diseases of Sweet orange

Sr. No.	Disease & pathogen	Symptoms
01	Blue mould by *Penicillium crustatum*	Watery shallow spots occur on the infected fruit. Spots extend deeper into the tissue. In severe cases fruits get covered by numerous spores of bluish green in colour. Sumia Fatima, et. al, (2006).
02	Soft rot by *Cladosporium sphaeropermum*	Circular slightly soft colorless spots develop on the fruits. In severe cases the affected regions get covered by light brown mycelial growth. Sumia Fatima, et. al, (2006).
03	Fruit rot by *Penicillium expansum*	At the region of injured region fungus attack the fruit. Gradually the spot increase in size and moldy growth of fungus cover up the infected region. The pathogen causes watery rot of fruit. The rind of fruit breaks easily. The affected areas get covered with bluish green moldy growth of fungus. Fruit emit a foul smell. It is unfit for consumption, Sumia Fatima, et. al, (2006).

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

International Journal of Research in Pharmacy and Life Sciences

Journal Home Page: www.pharmaresearchlibrary.com/ijrpls



Dr. Rafiq Zakaria College for Women Aurangabad

RESEARCH ARTICLE

Impact of environmental factors on growth and sporulation of fungi causing market diseases of fruits and vegetables

Sumia Fatima

Pesticides & Plant Protection Research Laboratory, Dr. Rafiq Zakaria College for Women, Aurangabad-431001, M.S. India

ABSTRACT

The environmental factors such as factor temperature, light and pH plays a very important role in growth and sporulation of fungi. The change in temperature light and pH directly affect the growth and sporulation of fungi. The optimum temperature of each type of fungus is different. At very low temperature several fungi get inhibited, even high temperature restricts the groth and development of fungus. The mycoflora requires optimum temperature for growth and sporulation. Most of the fungi of tropical region responsible for post harvest diseases of fruits and vegetables grow and sporulation takes place at temperatures from 25°C to 30°C. The highest growth of *Alternaria alternata, Aspergillus niger, Aspergillus flavus, Colletotrichum gloeosporioides* and *Penicillium islandicum* was observed at 30°C. Optimum pH 6.5 to 7.5 sporulation was good seen in *Alternaria alternata, Aspergillus niger, Aspergillus flavus, Colletotrichum gloeosporioides* and *Penicillium islandicum*. pH range 5 to 8 were found suitable to the growth of all the pathogen. Four different colours were selected to effect of different light on the growth and sporulation of pathogen.

Keywords: Environmental factors, growth of mycoflora

ARTICLE INFO

Corresponding Author
Sumia Fatima
Pesticides & Plant Protection Research Laboratory,
Dr. Rafiq Zakaria College for Women
Aurangabad-431001, M.S. India
MS-ID: IJRPLS4060

PAPER QR CODE

ARTICLE HISTORY: **Received** 15 March 2019, **Accepted** 18 April 2019, Available Online 24 May 2019

Copyright© 2019 *Sumia Fatima. Production and hosting by Pharma Research Library. All rights reserved.*

This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

Citation: *Sumia Fatima.* Impact of environmental factors on growth and sporulation of fungi causing market diseases of fruits and vegetables. *Int. J. Res. Pharm. L. Sci.*, 2019; 5(1): 25-27.

CONTENTS

1. Introduction 25
2. Materials and Methods 26
3. Results and Discussion 26
5. References 27

1. Introduction

The environmental factors greatly affect the growth and sporulation of fungi causing post harvest diseases of fruits and vegetable. Depletion of physical factors directly impact on growth and sporulation of fungi lowering and high temperature fungal growth will be retarded but at optimum temperature stimulating fungal growth and sporulation. Similar results have been reported by several workers. Rangaswami and Sambandam (1961) suggested the

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

RESEARCH JOURNEY International Multidisciplinary E-Research Journal ISSN : 2348-7143
Impact Factor (SJIF) - 6.261 | *Special Issue 120 :* Recent Developements in Life Sciences for Human Welfare February 2019

Keynote on Safty with The Help of Ethnomedicinal Plants Against Snakebite

Sumia Fatima
1Govt.Ashram school and Junior College,
Nawapada, Tal.-Sakri, Dist-Dhule (M.S.) India.
Jadhav Reena Girdharilal
Rafiq Zakaria College for Women,
Navkhanda Palace, Jubilee Park,
Aurangabad (M.S.) India.

Abstract :

Snakebite is a major health hazard in sakri taluka of district Dhule. Many accidents of snakebite occurred in rainy days when habitat of snake get destroyed due to rainwater or by activities while preparing of land for farming. So, snakebite becomes habitual in rainy season. Agricultural vicinity, seasonable changes and human activities increases the incidents of snakebite. Unavailability of antidote makes such events scareful and deadly. While residing and dwelling in forest areas tribal of sakri came across many interactions between animals and plants where animal uses plants for curing purposes. For example, fight between snake and Mongoose is well known. But when snake bites mongoose during fighting rounds it used to chew roots of *Rauvolfia tetraphylla* and eat seeds of *Butea monosperma*. This keen observation leads to practice of plants as antidote on snakebites. Deadly incidence like snakebite also treated using the observation and practice of the particular plant in sakri taluka.

Key words : *Ethnomedicines*, Snakebites, Sakri taluka in district Dhule.

Introduction :

Tropical environment of the country favors the growth of snakes. So, different kinds of snakes found on the Indian land. Only 35 species of snakes are poisonous. Some snakes are highly poisonous like Cobra and remaining are non poisonous. Nagpanchami is celebrated in the state of Maharashtra in Marathi month of Shrawana to pay respect towards Nagas i.e Snakes. Agricultural and tropical regions report more snake bites than anywhere else (Russell, F.E.1980). In India alone more than 200,000 cases are reported and an estimated 35,000 to 50,000 people die each year. (Bawaskar, H.S.2004) Mortality rate due to snakebite is high as some people died because of fear and heart attack. Snake bite is a major health hazard. World-wide conservative sources estimate that number of accidents globally reach one million, resulting in 600,000 envenomations and more than 20,000 deaths annually (Chippaux, J.P.1998). Antiserum is the only therapeutic agent available throughout the world. Antiserum contains purified, enzyme-refined and concentrated heterologous immunoglobins. (Mebs, D.2000) but antidote is not available in rural areas and its surrounding health providing systems such as Primary health care centers. Mostly plant based ethnomedicines practiced in the tribal and rural areas. Plants are used either single or in combination, as antidotes for snake envenomation by rural populations in India and many parts of the world (Perumal, S. R.).



Nagpanchami festival celebration drawing in village of Sakri district by Kokani tribes

Materials and Methods :

Different areas of Sakri taluka especially small padas are visited regularly as Regular field trips. Semi structured questionnaire with the help of local dialect used for collecting data. Interviews, dialogues and discussion with the Bhagats , vaidus and boharies of different villages are helping tools for collecting data. The plants have been cited in alphabetical order along with their local names, family and part used. Repeated queries were made to verify the data.

Observations and Results :

Ethnomedicinal plants used on snakebite are listed in below table according to their alphabetical order. Botanical name along with common name and plant part used for treatments given in the table.

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park.

ResearchGate

See discussions, stats, and author profiles for this publication at: https://www.researchgate.net/publication/342703199

Preliminary survey on diseases of Mango (Mangifera indica) under nursery conditions

Article · June 2020

CITATIONS
0

READS
359

2 authors:

Priya Lohare
Late Indira Ramdas Patil Dhamal Arts, Science and Commerce College, Ruhuri
14 PUBLICATIONS 1 CITATION
SEE PROFILE

Sumia Fatima
Dr Rafiq Zakaria College for Women, Aurangabad-431001
13 PUBLICATIONS 8 CITATIONS
SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Study of Colletotrichum Blight Disease of Nursery Plants of Mango (Mangifera indica L.) in Ahmednagar District View project

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

All content following this page was uploaded by Priya Lohare on 18 July 2020.

The user has requested enhancement of the downloaded file.

ISSN : 2348-7143
February 2019
RESEARCH JOURNEY International Multidisciplinary E-Research Journal
Impact Factor (SJIF) - 6.261 | Special Issue 120 : Recent Developments in Life Sciences for Human Welfare

The effect of medicinal plant extracts against guava wilt pathogen

Dr. Sumia Fatima & Uzma Quadri
Department of Botany,
Pesticide and Plant Protection Research Lab,
Rafiq Zakaria College for Women Campus-2,
Dist. Aurangabad - 431001 (M.S.) India.

Abstract :

Guava wilt pathogen was isolated from soil of guava orchards and identified as *Fusarium solani* on the basis of its morphological and cultural characteristics. The resistance of this pathogen to the wide variety of chemicals has stimulated the search of new alternatives for control measures. Use of plants extract is one of the most promising, effective, safer and eco- friendly method to eradicate the pathogens from soil. The present paper aims at the study on efficacy of four plant extracts viz., *Eugenia caryophyllata* (Clove), *Moringa oleifera* (Sehjan), *Trachyspermum captivum* (Ajwain) and *Zingiber officinale* (Zinger) against *Fusarium solani* at 10%, 25% and 50% concentrations. Among all four plant extracts tested, *Eugenia caryophyllata* was found to be most effective against *Fusarium solani* on 3rd, 5th and 7th day at 50% concentration and conquered the colony growth by 100% compared to control followed by *Trachyspermum captivum* and *Moringa oleifera*, 3rd day (91.70% and 67.42%), 5th day (92.74% and 72.35%) and 7th day (94.35% and 78.04%) respectively. *Zingiber officinale* has shown least efficiency to suppress the colony growth of *Fusarium solani* on 3rd day (60.65%), 5th day (63.55%) and 7th day (73.50%) after inoculation at 10%, 25% and 50% concentration over control.

Key words : Guava, *Fusarium solani*, plant extract, wilt, management.

Introduction :

The pathogen *Fusarium solani* is a widely distributed soil inhibiting fungus that causes diseases in several economically important crops including guava. Guava is grown almost in all the states of India. Guava crop is severely affected by wilt disease leading to substantial loss in the crop production. *Fusarium solani* is found as the most predominant pathogen causing wilt of guava. Since long the workers are using different chemicals and synthetic compounds against fungal pathogens to control it. Unfortunately, these chemicals are not readily biodegradable; tend to persist for years in the environment and developed new physiological races of the pathogens (Ocamb *et al.*, 2007; Siripornvisal, 2010). This led to the urgent need for development of novel fungicides that are more effective, economically feasible and eco- friendly than the conventional fungicides. Therefore, there is need of alternative methods to control phyto-pathogens which are safer and environment friendly.

Antifungal compounds from plants origin are most suitable being less toxic and more environmentally compatible by nature. From past many years number of plants have been extracted and screened for their antifungal activities and valuable results have been achieved (El. Shami *et al.*, 1986; Bansal and Gupta, 2000; Bajwa *et al.*, 2004; Abdelrahman, 2005; Gupta *et al.*, 2009; Zaker [illegible] 2010; Shukla and Dwivedi, 2012). In this respect present investigation was undertaken to evaluate the antifungal activity of locally available plant extracts viz., *Eugenia caryophyllata*, *Moringa oleifera*, *Trachyspermum captivum* and *Zingiber officinale* against *Fusarium solani* causing guava wilt.

Review of Literature :

The bioactivity of *Eugenia caryophyllata* attributed to eugenol, oleic acid and lipids (Hammer *et al.*,1999), whereas *Trachyspermum captivum* extracts contains thymal (39.1%), oleic acid (10.4%), linoleic acid (9.6%), α-terpinene (2.6%), palmitic acid (1.6%) and xylene (0.1%) (Nagalakshmi and Shankaracharya, 2000; Singh *et al.*, 2004). *Zingiber officinale* has been shown to have a range of medicinal benefits and contains gingerols, gingerdiol and shagelol as the main antifungal compound. (Ficker *et al.*, 2003) while *Moringa oleifera* attributed two main phytochemicals viz., pterygospermin and benzyl isocyanate which have strong antifungal and antimicrobial activity (Jed and Fahey, 2005).

Material And Methods :

Assessment of plant extracts

Antifungal activity of four plant extracts (Table 1) *viz.*, *Eugenia caryophyllata* (Flower bud), *Zingiber officinale* (Stem), *Trachyspermum captivum* (Dried fruits), *Moringa oleifera* (Fresh leaves) were evaluated by "Poisoned food technique" (Thapliyal, 1993) and (Bansal and Gupta, 2000) for their efficacy against *Fusarium solani* which was isolated from wilt affected soil of guava orchards. The collected plant parts of *Eugenia*

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Wo[illegible]

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

RESEARCH JOURNEY International Multidisciplinary E-Research Journal ISSN : 2348-7143
Impact Factor (SJIF) - 6.261 | *Special Issue 120* : Recent Developments in Life Sciences for Human Welfare February 2019

A brief analysis for fungal pathogen Sclerotium rolfsii diseases in Maharashtra.

Sumia Fatima & Uzma Quadri
Pesticide and Plant Protection Research Laboratory,
Dr. Rafiq Zakaria College for Women,
Aurangabad - 431001 (MS), India.

Abstract :

Vegetables contain a great variety of other phytochemicals (bioactive non-nutrient plant compounds), some of which have been claimed to have antioxidant, antifungal, antiviral and anticarcinogenic properties. Many diseases and disorders can affect the vegetables during the growing season. Diseases have been devastating the vegetables in Maharashtra result in low yield and economic losses to the farmers. The most common diseases are by fungi, especially fungal pathogen *Sclerotium rolfsii*.

Key worlds : Fungal pathogen, Vegetables, *Sclerotium rolfsii*, and Soil born Pathogen.

Introduction :

Vegetables are cheapest and richest sources of calories, natural vitamins, minerals, dietary fibre and are, therefore, name as "protected foods" which are essentials to tackle the problems of malnutrition and improve quality of life (Chaudhary and Dhaker 2009). Most of the largest producer of vegetables about (35 per cent to the worlds vegetable production), India is the second and followed by USA, Turkey & Japan (Kabir T.K., et al 2000). The vegetables are cultivated in India and on a large scale in the region of Maharashtra with part of Marathwada including Aurangabad.

This soil-born basidiomycete is very polyphagous. The *Sclerotium rolfsii* is a very common soil-borne fungus infecting a wide range of vegetables, ornamental and field crops. It's most active during warm, wet weather in tropical and subtropical regions. Among the vegetables, it affects are chilli, eggplant, tomato, various lettuces, melon, cucumber, watermelon, beans, artichokes, beets, carrots, cauliflower, celery, garlic, onion, radish, turnip, and sweet potato. The *S.rolfsii* will survive for on plant debris in the form of aggregate mycelium, but the primary inoculums are sclerotia; these structures are found in the soil or associated with plant debris. Their persistence is greater in the first few centimeters of soil rather than deeper. The fungus also remains on different organic substrates in its mycelia from in a saprophytic stage. The fungus cause rots of the lower stem root and crown. It can also cause rot of fruit in contact with soil.

The *Sclerotium rolfsii* is a highly polyphagous pathogen that can attack and persist on some 500 plants, cultivated or not, belonging to a hundred or so botanical families. Among the vegetables, it affects are chilli, eggplant, tomato, various lettuces, melon, cucumber, watermelon, beans, artichokes, beets, carrots, cauliflower, celery, garlic, onion, radish, turnip, and sweet potato. Many ornamental plants are also likely to host it: narcissus, lily, zinnia and chrysanthemum. Peanuts are soybeans are important potential hosts in the area where they are in they are grown. It is also found on apple.

The infections caused by fungi are reported on vegetables. They affected the stem, root and fruits. Some of the diseases caused serious damage in the field as well as in the storage. Therefore these fungal diseases have been paid much attention to different diseases. In the following fungal diseases were observed and they are described with respect to the causal organism and symptoms. The vegetable crop is cultivated on large scale in the region of Maharashtra. The main objective of the present research work is to survey of fungal diseases, especially *Sclerotium rolfsii* fungal pathogen. The specific objective of this study is to identify the problems of the farmer and give a recommendation on how to solve those problems.

Materials and Methods :

A investigate of fungal diseases causing pathogen *Sclerotium rolfsii* was carried out.

Collection and Isolation :

The infected plant infected samples were collected in airtight pre-sterilized polythene bags. The infected sample was brought to the laboratory for isolation of fungi. The diseased parts were cut into small pieces of 2-3 mm diameter with some healthy parts. The samples were washed in running tap water and sterilized by mercuric chloride solution and washed thrice with water. Again rinsed with sterile water and blotted to dry on clean tissue paper. After drying, three aseptically placed into Petri dishes containing Potato dextrose agar medium. Then, the inoculated Petri dishes have been marked and incubated at a temperature of 25°C for five days. Fungal growth was observed on Petri plate fungi were subcultured and pure culture was made with a single spore method.

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

Printed by : PRASHANT PUBLICATIONS

ISSN : 2348-7143 RESEARCH JOURNEY International Multidisciplinary E-Research Journal
February 2019 *Impact Factor (SJIF) - 6.261* | *Special Issue 120 :* Recent Developments in Life Sciences for Human Welfare

Survey report on study of ethnomedicinal uses of Butea monosperma plant by Gorbanjara community of Marathwada region.

Sumia Fatima
Gov. Ashram school and Junior College, Nawapada,
Tal. Sakri, Dist. Dhule (M.S.) India.
Jadhav Reena Girdharilal
Dr. Rafiq Zakaria College for Women,
Navkhanda Palace, Jubilee Park, Aurangabad (M.S.) India.

Dr. Rafiq Zakaria College for Women

Abstract :

The *Butea monosperma* called as Kesula in Gorbanjara community. The saint Sevalal Maharaj of banjara community advice his gorbhai to blooms like a kesula tree in his gorshikwadi. So flower of the Butea, become symbol of cultural growth and development of the community. Beautiful flowers of kesula blooms at the time of celebration of Holi festival. Singing and dancing done holding flowers in hands of banjara men and women. In old days Gorbanjara traders use to carry charcoal made up of Butea monosperma tree. All the above examples focus on cultural and socio economic impact of *Butea monosperma* on the gor community. Different ethnomedicinal formulations used to treat large spectrum of diseases by gorbanjara tribe of Marathwada region.

Key words : *Ethnomedicines, Gorbanjara community of Marathwada region, Butea monosperma.*

Introduction:

The Banjara is an ethnic group among larger populations in any society with a unique culture and common characteristics such as physical features, common language, habits, cultural homogeneity, unifying social organization and habitats. (Suresh Lal, 2006). Holi is the festival of color and celebration for Gor community. Flowers of *Butea monosperma* blooms in forest areas at the same occasion. Dhund i.e naming ceremony of new born baby boy before one day earlier of holi celebrated by singing holi song holding the kesula flowers. At the time of performing Lengi dance in the same festival of holi, flowers kept in hands of gorbanjara men and women. Colors of holi are made by using dry powder of kesula flower. It is interesting to note that all parts of this tree species are employed for various purposes by the rural folks and aborigines. (M. V. Patil, 2006) Different part of and extract of Butea monosperma shows various biological and pharmacological activities such as antimicrobial, antifertility, anticonvulsive, antihelmintic, antidiarrhoeal, antimicrobial, wound healing, antigiardiasis and hepatoprotective, antihypertenstive, antitumor, antidiabetic, anti-inflammatory, free radical scavenging activity (Chandra S. 1977) Different ethnomedicinal uses of same plant also known to Bhagat or Jantya or Maharaj of the community. Ethnobotanical uses of the plant also known to Naik of Tanda. Daaie a lady helping for easy delivery and other ethno gynaeco problems of the women of tanda also know and practices ethnomedicinal uses of the plant.

Methodology :

A survey was conducted in 10 nearby Tandas of Aurangabad district of Maharashtra from June 2017 to June 2018. From each Tanda ten respondents were randomly selected. Category of respondents was defined as Bhagat or Jantya from Gorbanjara community. With the help of semi - structured questionnaire and local dialect, frequent visits plan to confirm the authentical information and data collection from the study area.

Ethnomedicinal uses of the plant :

Sr. No.	Plant parts used	Diseases treated	Ethnomedicinal uses	Photo
1)	Whole plant	Body swellings	Whole plant paste is applied on body swellings.	
2)	Stem bark	Piles Cuts and wound Stomach pain Inflammation	Stem shoot decoction taken to treat piles. Stem bark paste is applied on fresh cuts and wound. Acute stomach pain treated using stem bark powder in warm water. Worm stem back paste is applied on infected area to reduce the inflammation of legs.	

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ISSN - 2348-7143 RESEARCH JOURNEY International Multidisciplinary E-Research Journal
February 2019 Impact Factor (SJIF) - 6.261 | Special Issue 120 : Recent Developments in Life Sciences for Human Welfare

To study the Effect of different temperature level on dry weight of fusarium oxysporium, Rhizoctonia solani and Alternaria solani

[1]Sumia Fatima, [2]Shafa khanand and [3]Shaikh faruk Karim
[1]Department of Botany,
Milliya College of Art, Science and Management Science,
Beed, (M.S.) India.
[2]Department of Botany,
Dr. Rafiq Zakaria womens college navkhanda, jublee park,
Aurangabad. (M.S.) India.

Abstract :

The seedlings of different vegetables were collected in sterilized polythene bags from different sites in taluka Ambad district Beed in the year 2018 from January 2018 to December 2018 for the study of effects of temperature on the growth of fungi, isolation of fungi from the vegetables and dry weight of fungi. The mycoflora was isolated by food poisoning technique on P.D.A. (Potato Dextrose Agar) medium. The pathogenicity was tested according to Koch's postulates. There was variation in the mycoflora according to the type of Vegetables. The common fungi were *fusarium oxysporium* ,*Rhizoctonia solani* and *Alternaria solani*.

There was highly significant difference in the growth of *A.Solani*, *Fusarium oxysporium* and *rhizoctina solani* at different temperature level maximum growth of these fungi was observed at 25 o^c temperature that was Alternaria 81 mg fusarium 103 mg Rhizoctina 98 mg .Followed by 30 o^c ,20 o^c ,35 o^c, 40 o^c and 10o^c and least growth was obtained at 10 o^c 17 mg, 32 mg and 5 mg .At temperature 15 o^c ,20 o^c respectively. The result of study indicated that the growth of fungi is high at temperature 25 o^c and 30 o^c. Therefore temperature is most important environmental factor for regulate vegetative and reproductive activity of fungi in the present study on the influence of temperature the maximum growth was at 25 oc.

Key words : Vegetables, fungal spore and temperature.

Introduction :

Vegetable is recognized as an essential diet with its nutritional and medicinal value, having full of sources of vitamins and minerals. India has securing the second positions in the world with total production of vegetables are more than 91million tons in the country.

Though the productivity of vegetable per unit area is very low, that means the vegetable in India are produce on small scale and raised with principles of intensive farming, which leads to disease infection specially fungal infection.

Vegetable's either raised directly or through transplanted seedling get infected by variety of biotic, messobiotic and abiotic causes. Vegetable seedlings are suffered from number of diseases caused by species of fungi, bacteria, viruses and nematodes. Among this fungal pathogens play important role in reducing yield and quality in vegetable crops.

Each vegetable seedling may be susceptible to several species and due to multiple soils born pathogen which persistent in soil for long period's symptoms of the seedling disease complex appears as patches emergence during the four weeks following seedlings, or up to the four leaf stage . Seedlings diseased damage contain seed decay that is seed fail to germinate and become soft and pulpy and pre-emergence damping- off i.e. seed germinate but the developing seedling decay and fail to emerge sometime seedling could turn to seedling blight, wire stem or post emergence damping-off and even seedling root rot occurs.

Methodology :

The seedlings of different vegetables were collected in sterilized polythene bags from different sites in taluka Ambad district Jalna in the year 2018 from January 2018 to December 2018 for the study of effects of temperature on the growth of fungi. The diseased vegetables were collected separately in polythene bags to avoid contamination. The symptoms were carefully noted; completely rotten vegetables were avoided for isolation as they contained mostly secondary pathogens. If vegetable were present on the infected portions, slides were prepared by scraping the diseased portions. Isolations were made from the juncture of healthy and diseased regions on the peel of the infected vegetables. The diseased tissues were surface sterilized with 90% ethyl alcohol and transferred aseptically to Potato dextrose agar medium [200g Potato, 15g Dextrose 15-20 g Agar-agar and 1000 ml of distilled water] slants. After 8 to 10 days the hyphal tips coming out of the infected tissues were transferred to fresh slants. The fungi were

Dr. Sumia Fatima
Asst. Professor & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

RESEARCH JOURNEY International Multidisciplinary E-Research Journal ISSN : 2348-7143
Impact Factor (SJIF) - 6.261 | *Special Issue 120 :* Recent Developments in Life Sciences for Human Welfare February 2019

Studies on Pollen Biology of Jatropha integerrima Jacq. and Calliandra calothyrsus Meisn.

P.D.Lokare
Department of Botany,
Shri Sai Nirman Arts, Commerce and Science College,
Shirdi - 423 109 (M.S.) India
Sumia Fatima
Department of Botany,
Dr. Rafiq Zakaria College for Women,
Aurangabad-431001 (M.S.) India

Abstract :

The study of pollen it is called as a Palynology. Pollen is a fine course of powdery substance, comprising the male gametophyte of seed plants. Pollen grain is microscopic structures that vary in size and shape. Some are tiny, while others are egg- shaped though too small to see individually they can be seen by the naked eye in large quantities.

Pollen biology is one of the most important and exciting area of plant reproductive biology and play an important role in crop improvement programs. Study of basic mechanism of reproductive biology of species is very important to understand how to maximize the yield and quality of seed produce to improve desired traits and to develop new varieties. These studies are also useful for to conservation, management and recovery of threatened species.

More studies with the two species used in this work will help increase the chance of creating a hybrid of high oil content. Studies of pollen viability and fertility are important for breeding programs. Pollen germination studies are essential for the estimation of the quantity of the pollen grains required for controlled pollination. In present investigation different parameters like micrometry, pollen production, pollen/ovule ratio, pollen viability, in-vitro pollen germination of *Jatropha integerrima* and *Calliandra calothyrsus* studied.

In this study, *Calliandra calothyrsus* showed the poor pollen production and in-vitro germination. Therefore it is necessary to do more efforts for pollen production and its in-vitro germination for that better medium composition is to be needed while in case of *Jatropha integerrima* showed less pollen viability hence a better breeding program is needed to introduce a good variety. In case of *in-vitro* germination *Jatropha integerrima*, showed good result in germination percentage and pollen tube length also. Hence for commercial use of *Jatropha integerrima in-vitro* culture could be done commercially.

Key words : *Jatropha integerrima, Calliandra calothyrsus*, micrometry, pollen production, pollen/ovule ratio, pollen viability, in-vitro pollen germination.

Introduction : The study of pollen it is called as a Palynology. Pollen is a fine course of powdery substance, comprising the male gametophyte of seed plants. Pollen is highly useful in Paleoboilogy, Archeology and Forensic study. Each pollen grain contains vegetative (non reproductive) cells. In flowering plants the vegetative tube cell produced the pollen tube, and the generative cells divides to form the two sperm cells. Pollen in the plants is used for transferring haploid male gametic material from the anther of a single flower to the stigma of another, in cross – pollination. In case of self-pollination, this process takes places from the anther of a flower to the stigma of the same flower. Pollen grain is microscopic structures that vary in size and shape. Some are tiny, while others are egg- shaped though too small to see individually they can be seen by the naked eye in large quantities. Pollen is produced and transported in slightly different ways depending on whether the plant is an angiosperm or gymnosperm. Angiosperms are flowering plants and gymnosperms are non- flowering, in angiosperm pollen is produced by the anther, which slits on the filament in the centre of the flower.

Pollen biology is one of the most important and exciting area of plant reproductive biology and play an important role in crop improvement programs. The ability of pollen to perform its function of delivering male gametes to embryo sac is referred to as pollen viability and the period for which the pollen remains viable varies greatly from species to species. Besides pollen biology, stigma receptivity and pollen pistil interaction also plays a vital role in successful pollination and fertilization. These studies provide clues for finding barriers to fertilization. Study of basic mechanism of reproductive biology of species is very important to understand how to maximize

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For W.

Impact Factor – 6.261 Special Issue - 120 Feb. 2019 ISSN – 2348-7143

INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S

UGC Approved Journal
Multidisciplinary International E-research Journal

Recent Developments in for Human Welfare

- GUEST EDITOR -
Principal Dr. Ashok Pandit

- CHIEF EDITOR -
Dr. Dhanraj T. Dhangar

- EXECUTIVE EDITORS -
Dr. Smt. Sunita Jawale
Dr. J. H. Sawdekar | Dr. K. V. Badar

Printed By PRASHANT PUBLICATIONS, JALGAON

For Details Visit To : www.research

Dr. Sunita Farina
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

Scanned with CamScanner

38. Spectrophotometric determination of polyphenols in royal jelly 131
Syeda Hina Kausar, Dr. V. R. More

39. Effect of Pre-Sowing Treatments on Seeds of Syzygium Cumuni (L.) Skeels. 134
Rajesh Shrirangrao Gaikwad, Gajanan Dinkar Mule

40. Studies on Pollen Biology of Jatropha integerrima Jacq. and Calliandra calothyrsus Meisn. 137
P.D.Lokare, Sumia Fatima

41. Ecofriendly Biosynthesis of Silver Nanoparticles from Aspergillus niger van Tieghem. 142
P.D. Lokare, Sumia Fatima

42. Effect of Mutagens on Relative Efficiency in M2 Generation of Cowpea [(Vigna Unguiculata (L.) Walp.] 145
B. S. Gaikwad, A. D. More

43. Alteration In Biochemials From Guava (Psidium guajava) Fruits Due to Post-Harvest Fungal Pathogens. 147
Mumtaz Baig, Shaikh Farukh Kareem

44. Some traditional genotypes of Sorghum from Aurangabad District, Maharashtra. 149
Uchatkar Balaji P, Dhabe Arvind S

45. Physico-Chemical Profile of Godavari River 155
Shaikh Yasmeen Baig Mumtaz

46. Isolation and Screening of Benzonitrile Degrading Bacteria K7. 157
Dr. Ajane Vaishali Harish

47. Redescription of a genus Raillietina (Fuhrman, 1920) from Francolinus Pondicerianus at Latur Dist, (M.S.) India. 161
Ravi Solunke, Swati Phadke, Sapna Lohat

48. Note on genus Alysicarpus Desv. family-Fabaceae reference to flora of Marathwada 164
Shantanu Y. Chavan, Rupali Taur, Dileep Pokle

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Juit Tee Park,
AURANGABAD. (M.S.)

Scanned with CamScanner

ISSN : 2348-7143
February 2019
RESEARCH JOURNEY International Multidisciplinary E-Research Journal
Impact Factor (SJIF) - 6.261 | *Special Issue 120 :* Recent Developments in Life Sciences for Human ...

Dr. Rafiq Zakaria College for Women, Aurangabad

Ecofriendly Biosynthesis of Silver Nanoparticles from Aspergillus niger van Tieghem.

Bhalerao Sunil
Department of Botany,
Shri Sai Nirman Arts, Commerce and Science College,
Shirdi - 423 109 (M.S.) India
Sumia Fatima
Department of Botany,
Dr. Rafiq Zakaria College for Women,
Aurangabad-431001 (M.S.) India

Abstract :

Nanoparticles are the clusters of atoms, size ranging from 1-100nm. 1 nanometer is equal to the 10-9 meter. For the isolation and preparation of pure culture of *A. niger* standered procedure of serial dilution were followed. The pure culture of *A.niger* were maintained on potato dextrose agar medium (PDA).For the preparation of biomass *A. niger* were allowed to grow in potato dextrose broth (PDB) liquid medium. After that biosynthesis of AgNPs was done with cell filtrate of *A.niger* and AgNO3 solution (10mM). The synthesized AgNPs were characterized by the ultraviolet visible spectrophotometer. In this process AgNPs were synthesized extracellularly by *A.niger* at room temperature. Such green nanoparticles can be used for the various practices includes food storage, as a medicine etc.

Key words : A.niger, Nanoparticles, PDA, AgNO3, AgNPs.

Introduction :

Silver nanoparticles (AgNPs) are attractive option because they are non-toxic to the human body at low concentrations and have broad-spectrum antibacterial actions. The biosynthesis of nanoparticles has received increasing attention due to the growing need to develop safe, cost effective and environment friendly technologies for nanomaterials synthesis. In 1959, the great physicist of our time Prof. Richard Feynman gave the first illuminating talk on nanotechnology. Synthesis of nanoparticles employing microorganisms has attracted great interest due to their unusual optical (Krolikowska *et. al.*, 2003). The interactions between microorganisms and metals have been well documented and the ability of microorganisms to extract and/or accumulate metals is already employed in biotechnological processes such as bioleaching and bioremediation (Gericke *et.al.*, 2006). It is well known that many organisms can synthesize inorganic materials either intra or extracellularly (Dickson, 1999; Kroger *et.al.*, 1999; Mandal *et.al.*, 2006; Mann, 1986; Oliver *et.al.*, 1995; Simkiss *et.al.*, 1989; Lovely *et.al.*, 1987). The use of fungi in the synthesis of nanoparticles is a relatively recent addition to the list of microorganisms possessing nanoparticles biosynthesis "ability".

Application of fungi to produce nanoparticles is potentially exciting because of their ability to secrete large amounts of [illegible]. Some of the microorganisms which are [illegible] widely used for synthesis of silver nanoparticles include microorganisms such as, *Verticillium* sp., *Fusarium oxysporum*, *Pseudomonas stutzeri* AG259 (Kuber *et.al.*, 2006; Sastry *et.al.*, 2003) and *Aspergillus fumigates* (Bhainsa and D'Souza, 2006). Except from *Fusarium oxysporum* and Aspergillus *fumigates*, biosynthesis of silver nanoparticles by the above mentioned microorganisms is intracellular. Nanoparticles are the clusters of atoms, size ranging from 1-100nm. Silver has an advantage of having broad antimicrobial activity against gram-negative and grum-positive bacteria. The quality of silver has developed interest in researchers.

Synthesis of nanoparticles by microbial means is extensively used, because microorganisms typically live under comfortable conditions of temperature, pressure and acidity. Drug resistance bacteria are a major challenge. Therefore there will be necessary to another best option which will be resistant to bacteria, environment friendly, cost effective and non-toxic. The fungi are extremely good candidates in the synthesis of metal nanoparticles. Biological methods with better control over the shape and size of the NPs. The shape of NP could be molded as a sphere or prism shape. Silver nanoparticles have many important applications that include single electron transistors, fuel cells, fluorescent labeling, DNA/RNA detection via specific probes as well as potential uses in biomedical devices, biosensors, nanocomputers, agriculture used to improve wound healing, excellent anti-[illegible] agents. In the field of optoelectronics,

Dr. Sunil Bhalerao
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For W...
Aurang...
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women Aurangabad

International Journal of Applied Research 2019; 5(1): 170-173



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2019; 5(1): 170-173
www.allresearchjournal.com
Received: 21-11-2018
Accepted: 23-12-2018

Shaikh Faruk Karim
Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Dr. Sumia Fatima
Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Jadhav Reena Girdharilal
Govt. Ashram School and Junior College, Nawapada, Tal.-Sakri, Dist-Dhule, Maharashtra, India

Ethnobotanical investigation of underground rhizome bearing plants at Paachmauli village: Green fragment of Kondaibari forest, Taluka Sakri, Dhule, Maharashtra

Shaikh Faruk Karim, Dr. Sumia Fatima and Jadhav Reena Girdharilal

Abstract
Paachmauli is a green fragment of Kondaibari forest area situated in Taluka Sakri dist. Dhule. Paachi pandava hill is famous and surrounded by dense vegetation. Local farmers, villagers, Bhagats, Maharaj, Boharies, and Vaidus are well known to the ethnomedicinal properties of the plants of this area. Many ethnomedicinal plants practiced in this region. Health of the natives is depending upon practice of the local healers. Rainy season favors growth of many types of underground rhizome bearing plants. These rhizomes collected from the forest area for the ethnomedicinal uses. Five important underground plants are studied in the present paper for their ethnomedicinal uses.

Keywords: Paachmauli area, underground rhizomes, ethnomedicinal plants

1. Introduction

Kondaibari forest and its green fragments is located at the end of Sahyadri. Paach mauli is a very small village and one of the green fragments of Kondaibari forest. It contains dense vegetation. Large trees like *Tectona grandis, Syzygium cumini, Terminalia sp., Pongamia pinnata, Holorrhena pubescens, Azadirachta indica, Holoptelea integrifolia, Madhuca indica etc.* were abundant in this area. Plants have always been the source of medicines and have many uses to mankind [4]. Numerous waterfalls, large forest trees, trenches, and small lakes makes it beautiful. The name of Paachmauli indicates residence of five gods in the area. The hilly area called Paachipandava is famous. The five gods called Paachi pandava along with devi mata worshiped by villagers. Fair is held on the hill top yearly. This is the unique example where epic personalities from Mahabharata are worshiped by the tribal people. Kokani, Bhill, Gavit, Gaurbanjara, Pardhi, Thelari, Mauchi, were different ethnic groups [3]. Agricultural activities along with farming and fishing are seen on large scale in this area. Pinjarzadi is the nearby post office. Autorikshaw can get from Pinjarzadi to Paachmauli. On Sunday local weakly market held at Pinjarzadi, here local vegetables, fruits, grains, rice, household utilities, cloths, fishes, meet, and medicinal plant parts sold as per availability.



Fig 1: Name of Pachmauli area five gods

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Correspondence
Shaikh Faruk Karim
Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

http://www.epitomejournals.com Vol. 4, Issue 4, April 2018, ISSN: 2395-6968

Epitome : International Journal of Multidisciplinary Research

ISSN : 2395-6968

AN ALBUM OF TAXONOMIC DESCRIPTION OF HABIT & HABITAT OF PLANTS-2018



Dr. Sumia Fatima

M.Sc., Ph.D., F.S.Sc., F.S.L.Sc.
Associate Prof. & Head, Botany
Dr. Rafiq Zakaria College for Women,
Aurangabad-431001 (MS)



Dr. Syed Zafar Javeed

M.Sc., Ph.D.
(Environmental Science)
Safety Manager
ENOC, Fujairah, UAE

ABSTRACT

All types of soil in India in highly favorable for plants growth. Plants modified them self to survive in water, land or as epiphytes. The study of forms of vegetation helps to understand groups of plants belonging to various geographical orders. On the basis of ecological characteristics the plant may be divided into certain groups. On the basis of habit of plant, the plants are divided as herbs, shrubs and trees. The characteristics which can be noted by number are termed as quantitative features of morphology. The plants differentiated according to water relationship. To study habit and habitat of plants, visited different places in the region to observe habit and habitat of plants. Total nine types of habit of plants observed.

KEYWORDS

Album, habit & habitat, plants

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

 All rights reserved.

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.084
Volume 8, Issue 12, 762-770. Research Article ISSN 2277- 7105

SYMPTOMS AS AN IDENTIFICATION KEY OF POST HARVEST DISEASES OF APPLE (*MALUS DOMESTICA*)

*Sumia Fatima

Pesticides and Plant Rotection Research Laboratory Dr. Rafiq Zakaria College for Women, Aurangabad-431001, (M.S.) India.

Article Received on 22 August 2019,
Revised on 12 Sept. 2019,
Accepted on 02 Oct. 2019,
DOI: 10.20959/wjpr201912-15908

*Corresponding Author
Sumia Fatima
Pesticides and Plant Rotection Research Laboratory Dr. Rafiq Zakaria College for Women, Aurangabad-431001, (M.S.) India.

ABSTRACT

Apple is highly delicious fruit which is very commonly grown in the countries of temperate regions of the world. The injured fruits get injured by saprophytic fungi which cases fruit rot disease during transportation. Sometimes, the pathogenic fungi remain inside fruit tissue and develop into rot of fruit during storage periods. Total 36 types of post harvest fungi which causes different types of symptoms that help as identification key of post harvest diseases of apple.

KEYWORDS: *Malus Domestica*, sapophytic fungi.

INTRODUCTION

In India apple growing areas are limited. The Himachal Pradesh, Simla, Kashmir are the main regions growing apple in large scale. It is the best source of energy, minerals, and vitamins. There are many varieties of apple occur in world. Patel, et, al. (1949) reported about 500 varieties of apple occur in the world. The important varieties of apple which occur in India are Golden delicious, Ambri, Lal Ambri, Maharaji, Red delicious, red June, king of pippins, starking delicious, Benonic, Irish, Peach and Sunehari.

MATERIAL AND METHOD

Collection of infected Apple

The Apple fruits were collected from different fruit store houses of different go Aurangabad. The infected fruits of each type of infection collected in separate polythin bag and from the same lot 10 immature healthy fruits were collected in a sterile polythin bag and from the same lot 10 immature healthy Apples brought to the laboratory in an another

PRINCIPAL
Dr. Rafiq Zakaria College For Wo
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

http://www.epitomejournals.com Vol. 4, Issue 7, July 2018, ISSN: 2395-6968

Epitome : International Journal of Multidisciplinary Research
ISSN : 2395-6968

SCREENING OF MYCOFLORA ASSOCIATED WITH MARKET DISEASES OF BANANA (*MUSA PARADISICA*)





Dr. Sumia Fatima
Dr. Rafiq Zakaria College for Women, Aurangabad-431001, (M.S.) India.

Faruk Shaikh
M.S.S. Arts, Science and Commerce College, Ambad-431204
E-mail: sumiazafar@gmail.com

Fruits are best source of carbohydrates, antioxidants like vit-C, vit-E, vit- A & zinc, selenium, lycopene etc. There are reports from different parts of world that antioxidants play important role in antiaging process. Human body requires different types of essential amino acids all such amino acid are present in fruits. Amino acids prevent infections of pathogens.

Fruits improve overall health of human beings. Strong immune system increases resistance power towards different types of diseases. Fruits provide all types of minerals that are required to our body. The nutritionists placed fruits and green vegetables on the top because, fruits contain all types of essential ingredients which are required for healthy living being. Fruits contain 50-90% moisture.

The loss of fruits after harvest is a major problem of fruit growing countries of the world. There are reports of losses of millions of rupees annually due to post-harvest diseases caused by different genera of mycoflora during transportation and storage periods. In order to ma

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College Fo
Navkhanda, Juibilee P
AURANGABAD. (M

 Dr. Pramod Ambadasrao Patwar, Editor-in-Chief ©EIJMR All rights reserved

http://www.epitomejournals.com Vol. 4, Issue 7, July 2018, ISSN: 2395-6968

Epitome : International Journal of Multidisciplinary Research

ISSN : 2395-6968

Dr. Rafiq Zakaria College for Women Aurangabad

A PHOTOGRAPHIC REPRESENTATION OF SCIENTIFIC TERMINOLOGY OF FLOWERING SHOOT OF PLANTS



Dr. Sumia Fatima

M.Sc., Ph.D., F.S.Sc., F.S.L.Sc.
Asso. Prof. & Head, Botany
Dr. Rafiq Zakaria College for Women
Aurangabad-431001 (MS)



Dr. Syed Zafar Javeed

M.Sc., Ph.D.
Environmental Science
Safety Manager
ENOC, Fujairah, UAE

ABSTRACT

The plants are distributed throughout the world. There are numerous types of plant grow in a variety of habitat. The plant kingdom is consists of different forms which are scattered in greater or less abundance over most of the soil surface of earth as well as in water. The study of angiospermic plants is bases on deep knowledge and complete enculcating of external characteristics of plants.

KEYWORDS

Flowering shoots, scientific description, plants.

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

208

International Journal of Applied Research 2018; 4(11): 125-128



International of Applied Research

ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2018; 4(11): 125-128
www.allresearchjournal.com
Received: 01-09-2018
Accepted: 02-10-2018

Faruk Shaikh
Department of Botany,
Dr. Rafiq Zakaria College for Women, Aurangabad,
Maharashtra, India

SB Chavan
Department of Botany,
Dr. Rafiq Zakaria College for Women, Aurangabad,
Maharashtra, India

Sumia Fatima
Department of Botany,
Dr. Rafiq Zakaria College for Women, Aurangabad,
Maharashtra, India

Correspondence
Faruk Shaikh
Department of Botany,
Dr. Rafiq Zakaria College for Women, Aurangabad,
Maharashtra, India

In vitro effect of nitrogen sources on growth of *Alternaria solani* and *Rhizoctonia solani*, causing diseases of tomato

Faruk Shaikh, SB Chavan and Sumia Fatima

Abstract
Present *In Vitro* investigation was conducted to study of different nitrogen sources effect on growth (dry weight) of *Alternaria solani* and *Rhizoctonia solani* causing early blight and root rot of tomato at Department of Botany, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, during experiment were used different nitrogen sources (0.25% Conc.) viz, Ammonium sulphate, Sodium Nitrite, Calcium Nitrate, Sodium Nitrate, Ammonium Chloride (NH_4Cl), Potassium Nitrate (KNO_3), Magnesium Nitrate (NO_3)$_2$. The effect nitrogen sources on growth of fungi were estimated in the term of biomass production. In Ammonium nitrate with 0.25% concentration showed that suitable source for the utilization nitrogen for growth of both *Alternaria solani* and *Rhizoctonia solani* mycelium with maximum dry weight 117 and 122 mg respectively on 10th inoculation period. These two nitrogen sources may be involved in vegetative and reproductive growth of *Alternaria solani* and *Rhizoctonia solani*.

Keywords: *In vitro*, *Alternaria solani*, *Rhizoctonia solani*, dry weight in mg, nitrogen sources, tomato

1. Introduction
Tomato (*Lycopersicon esculentum* Mill) belongs to the family *Solanaceae* that originated in the Andian region of South America. It is one of the most popular and widely grown vegetable crops, in India and throughout the world. Among the vegetables tomato ranks next to potato in world acreage and ranks first among the processing crops. Tomato is grown for its edible fruits, which can be consumed either fresh or it can be processed to several products like puree, paste, soup, juices, ketchup, whole canned fruits etc.
Tomato plants interact with biotic and abiotic factors which have direct impact on production and productivity. Among different biotic factors diseases, the fungal disease early blight of tomato incited by *Alternaria Solani* (Ellis and Martin). Bose *et al* (1882) first time recorded Early blight of tomato caused by *Alternaria Solani* is of the most destructive disease incurring huge loss both at pre and post-harvest stages in tomato growing tracks in india (Prasad, 2004., Munde *et al*., 2013., Sahu *et al*., 2013) [11, 16, 18]. C. D. Mayee *et al*. (1986) [9] reported that Symptoms of the disease are characterized by brown to dark brown colored necrotic spots. Severe infection of the early blight fungus leads to defoliation, drying off of twigs and premature fruit drop causing 50 to 86% losses in fruit yield (K.P. Akhtar *et al*. 2004) [1].
Alternaria Solani necessary different nutrient for their growth and development. In *In vitro* study, *Alternaria Solani* was isolate as pure culture in media containing different nitrogen sources with specific concentration for studies on dry weight growth. Different nitrogen sources containing media was favor the dry weight growth and sporulation. It has shown that *Alternaria Solani* variation respond in the utilization of nitrogen from different nitrogen sources for dry weight growth. Hence, thorough knowledge on the influence of culture media containing nitrogen sources on growth of the fungus as well as sporulation of the fungus isolated from early blight and Root Rot infected tomato leaves is needed to be developed for suitable management strategies of the disease and may help in taxonomical and physiological study of the fungus.

2. Material and Methods
2.1 Collection of material
The present experiment conducted *In Vitro* [illegible] of Botany, Dr. Rafiq Zakaria College for Women, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

http://www.epitomejournals.com Vol. 4, Issue 9, September 2018, ISSN: 2395-6968

Epitome : International Journal of Multidisciplinary Research

ISSN : 2395-6968

EFFECT OF DIFFERENT SUGAR SOURCES ON DRY WEIGHT OF *RHIZOCTONIA SOLANI* CAUSING ROT OF TOMATO SEEDLING ON 10TH DAYS OF INOCULATION PERIOD UNDER IN-VITRO CONDITIONS





Shaikh Faruk Karim[1]

Dr. Sumia Fatima[2]

Dr. Rafiq Zakaria College for Women,

Department of Botany, Aurangabd-431001 (MS), India

Email Id: pfaruk123@gmail.com

ABSTRACT

Physiological and biochemical study of *Rhizoctonia Solani* on different sugar sources in conical flask containing potato dextrose liquid medium were incubated at 25±1°C for 10 days inoculation period and observed that growth and sporulation of fungus in different sugar sources and also mycelium mats were harvested, dried and weighed on electronic weighing balance. The result were noted that maximum growth was recorded on potato dextrose liquid medium containing Glucose as a sugar source (138 mg) followed by Fructose (136 mg), mannose (119

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

ISSN : 2348-7143
February 2019
RESEARCH JOURNEY International Multidisciplinary E-Research Journal
Impact Factor (SJIF) - 6.261 | *Special Issue 120 :* Recent Developments in Life Sciences for Human Welfare

To study the Effect of different temperature level on dry weight of fusarium oxysporium, Rhizoctonia solani and Alternaria solani

[1]Sumia Fatima, [2]Shafa khanand and [3]Shaikh faruk Karim
[1]Department of Botany,
Milliya College of Art, Science and Management Science,
Beed, (M.S.) India.
[2]Department of Botany,
Rafiq zakeria, campus womens college navkhanda, jublee park,
Aurangabad. (M.S.) India.

Abstract :

The seedlings of different vegetables were collected in sterilized polythene bags from different sites in taluka Ambad district Beed in the year 2018 from January 2018 to December 2018 for the study of effects of temperature on the growth of fungi, isolation of fungi from the vegetables and dry weight of fungi. The mycoflora was isolated by food poisoning technique on P.D.A. (Potato Dextrose Agar) medium. The pathogenicity was tested according to Koch's postulates. There was variation in the mycoflora according to the type of Vegetables. The common fungi were *fusarium oxysporium* ,*Rhizoctonia solani* and *Alternaria solani*.

There was highly significant difference in the growth of *A.Solani, Fusarium oxysporium* and *rhizoctina solani* at different temperature level maximum growth of these fungi was observed at 25 o^c temperature that was Alternaria 81 mg fusarium 103 mg Rhizoctina 98 mg .Followed by 30 o^c ,20 o^c ,35 o^c, 40 o^c and 10o^c and least growth was obtained at 10 o^c 17 mg, 32 mg and 5 mg .At temperature 15 o^c ,20 o^c respectively. The result of study indicated that the growth of fungi is high at temperature 25 o^c and 30 o^c. Therefore temperature is most important environmental factor for regulate vegetative and reproductive activity of fungi in the present study on the influence of temperature the maximum growth was at 25 oc.

Key words : Vegetables, fungal spore and temperature.

Introduction :

Vegetable is recognized as an essential diet with its nutritional and medicinal value, having full of sources of vitamins and minerals. India has securing the second positions in the world with total production of vegetables are more than 91million tons in the country.

Though the productivity of vegetable per unit area is very low, that means the vegetable in India are produce on small scale and raised with principles of intensive farming, which leads to disease infection specially fungal infection.

Vegetable's either raised directly or through transplanted seedling get infected by variety of biotic, messobiotic and abiotic causes. Vegetable seedlings are suffered from number of diseases caused by species of fungi, bacteria, viruses and nematodes. Among this fungal pathogens play important role in reducing yield and quality in vegetable crops.

Each vegetable seedling may be susceptible to several species and due to multiple soils born pathogen which persistent in soil for long period's symptoms of the seedling disease complex appears as patches emergence during the four weeks following seedlings, or up to the four leaf stages. Seedlings diseased damage contain seeds decay that is seed fail to germinate and become soft and pulpy and pre-emergence damping- off i.e. seed germinate but the developing seedling decay and fail to emerge sometime seedling could turn to seedling blight, wire stem or post emergence damping-off and even seedling root rot occurs.

Methodology :

The seedlings of different vegetables were collected in sterilized polythene bags from different sites in taluka Ambad district Jalna in the year 2018 from January 2018 to December 2018 for the study of effects of temperature on the growth of fungi. The diseased vegetables were collected separately in polythene bags to avoid contamination. The symptoms were carefully noted; completely rotten vegetables were avoided for isolation as they contained mostly secondary pathogens. If vegetable were present on the infected portions, slides were prepared by scraping the diseased portions. Isolations were made from the juncture of healthy and diseased regions on the peel of the infected vegetables. The diseased tissues were surface sterilized with 90% ethyl alcohol and transferred aseptically to Potato dextrose agar medium [200g Potato, 15g Dextrose 15-20 g Agar-agar and 1000 ml of distilled water] slants. After 8 to 10 days the hyphal tips coming out of the infected tissues were transferred to fresh slants. The fungi were

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

2018-2019.

P.D. Lokare et al, IJPNM, 2019, 6(2): 68-72

CODEN (USA): IJPNRC | ISSN: 2321-6743

International Journal of Pharmacy and Natural Medicines

Journal Home Page: www.pharmaresearchlibrary.com/ijpnm



Dr. Rafiq Zakaria College for Women

RESEARCH ARTICLE

Antifungal Activity of Medicinal Plants *Cymbopogon sprenge* L., *Mentha spicata* L. and *Murraya koenigii* L. against Growth of Fungi *Aspergillus niger* and *Mucor spp.*

Sumia Fatima, *P.D.Lokare[2]

Department of Botany, Dr. Rafiq Zakaria College for Women, Aurangabad-431001, Maharashtra, India
**Department of Botany, Shri Sai Nirman Arts, Commerce and Science College, Shirdi-423 109, Maharashtra, India*

ABSTRACT

Medicinal plants are distributed all over the world. Plants are affected by the various types of the diseases as bacterial, nematodal, viral, fungal etc. These all are the infectious diseases caused to any part of plants and damage it. These medicinal plants extracts are used to stop the fungal infection hence; it is called as 'antifungal'. An antifungal is a drug produced from the extract of the medicinal plants and use to cure the fungal infections. From the above result it concludes that *M. koenigii* and *C. sprenge* has highly antifungal activity in aqueous extract than n-butanol solvent against *A. niger* and *Mucor spps.* Therefore, now a days use of natural plant derived fungicide is evolved as an alternative to synthetic fungicides.

Keywords- Antifungal activity, *Aspergillus niger, Mucor* spp.

ARTICLE INFO

***Corresponding Author**
P.D.Lokare
Department of Botany, Shri Sai Nirman Arts, Commerce and Science College, Maharashtra, India
MS-ID: IJPNM4061

PAPER QR-CODE

ARTICLE HISTORY: Received 11 May 2019, **Accepted** 29 June 2019, **Available Online** 15 December 2019

Copyright© 2019 P.D. Lokare, *et al. Production and hosting by Pharma Research Library. All rights reserved.*

This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

Citation: P.D. Lokare, *et al.* Antifungal Activity of Medicinal Plants Cymbopogon sprenge L., Mentha spicata L., and Murraya koenigii L. against Growth of Fungi Aspergillus niger and Mucor spp. *Int. J. Pharm. Natural Med.*, 2019, 7(2): 68-72.

CONTENTS

1. Introduction 69
2. Materials and Method 69
3. Results and Discussion 69
4. Conclusion 72
5. References 72

1. Introduction

All these medicinal plants showed the phytochemical compounds as alkaloids, tannins, flavanoids and it showed the antioxidants, antidibetic , antibacterial , antifungal activities due to this properties this plants are used as medicinal plants. These phytochemical compounds of the plants are used to cure the various infectious diseases. (Monoorkar and Gachande, 2014). Plants are affected by the various types of the diseases as bacterial, nematodal, viral, fungal etc. These all are the infectious diseases caused by any part of plants and damage it. These medicinal plant

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Journal of Drug Delivery and Therapeutics

Dr. Rafiq Zakaria College for Women, Aurangabad

Introduction to major post-harvest diseases of *guava*

Sumia Fatima

Research Laboratory, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India

ABSTRACT

Keywords:

Cite this article as:

DOI:

Address for Correspondence:

INTRODUCTION

MATERIALS AND METHODS

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-2019.

IOSR Journal Of Pharmacy www.iosrphr.org
(e)-ISSN: 2250-3013, (p)-ISSN: 2319-4219
Volume 9, Issue 1 Version. I (January 2019), PP. 30-33

GC-MS Analysis of the Polyherbal Mixture

Sumia Fatima*[1], Dr. C Ramesh[2], A Saheel Qureshi[3]
*[1]Research Scholar, Jawaharlal Nehru Technological University, Hyderabad-500 085, India. E-mail
[2]Department of Pharmacology, Sai Pranavi College of Pharmacy, Keesara-501 301, India
[3]Associate Professor, Shadan College of Pharmacy, Peeranchern, Hyderabad-500 091, India
Corresponding Author: Sumia Fatima*

ABSTRACT: The aim of the study was to investigate the phytoconstituents of chloroform extract of polyherbal mixture containing Argemone mexicana leaves, Echinops echinatus roots and Tricholepis glaberrima aerial parts using GC-MS (gas chromatography-mass spectrometry). GC-MS analysis of polyherbal mixture was performed by using Agilent 6890 GC with 59739N MSD and GC-MS equipped with Elite-I fused with silica capillary column (Cpsil 8cb: 30mm x 25mm x 0.25mm). The result of analysis confirms the presence of 11 compounds. The most prevailing compounds of medicinal value are Azotensin, Thymol, Erythrocentaurin, Neophytadiene, Hexadecanoic acid, Cis-9,cis-12-Octadecadienoic acid, Squalene etc.

Keywords: Polyherbal mixture, Argemone mexicana leaves, Echinops echinatus roots and Tricholepis glaberrima aerial parts, GC-MS Analysis.

Date of Submission: 30-12-2018 Date of acceptance: 15-01-2019

I. INTRODUCTION

Use of plants as a source of medicine has been inherited and is an important component of the health care system. India is the largest producer of medicinal herbs and is thus aptly called the "botanical garden of the world.[1] At present a number of plants such as *Argemone mexicana*, *Echinops echinatus* and *Tricholepis glaberrima* are known by the trade name Brahmadandi. It is a well-known drug in the Indian system of medicine for the treatment of numerous diseases.[2]

Argemone mexicana (family - Papavaraceae) known as Ghamoya is an indigenous herb found in India. Ghamoya has occupied a pivotal position in Indian culture and folk medicine. It has been used in almost all the traditional system of medicine, such as in Ayurveda, Unani and Siddha. Traditionally, the plant is reported to be used as diuretic, purgative, anti-inflammatory, analgesic and believed to destroy worms, cures itching, various skin diseases and as antidote to various poisons. Some of the reported pharmacological activities are Wound healing, Anti-asthamatic, Anti-stress, Hepatoprotective, Anti-HIV, Anti- diabetic, Anti- inflammatory.[3]

Echinops echinatus, Indian Global thistle, belonging to the family Asteraceae is a shrub found in India, Pakistan and Sri Lanka. It contains various chemical constituents like carbohydrates, alkaloids, flavonoids, terpenoids, steroids etc. Traditionally, the plant is reported to be used in the treatment of fever, inflammation, asthma, sexual disorders, in brain disorders etc. The root is abortifacient and aphrodisiac. Some of the reported activities are Antifungal, Analgesic, Anti-inflammatory, Diuretic, Antioxidant, Wound Healing etc.[4]

Tricholepis glaberrima DC (Asteraceae), commonly known as "Brahmadandi" is an important medicinal plant used in our traditional system of medicine to treat various diseases. It is used in Ayurveda for nervine tonic, aphrodisiac, skin disease and in cough. It is used because of the broad area of biological activities like anti-inflammatory, urinary troubles, antiseptic activities. The plant is rich in many pharmaceutical active ingredients like flavonoids, triterpenoids, saponin glycosides and sterols.[5]

In the last few years, gas chromatography mass spectrometry (GC-MS) has become firmly established as a key technological platform for secondary metabolite profiling in both plant and non-plant species.[1] A detailed literature review on the polyherbal mixture containing *Argemone mexicana* leaves, *Echinops echinatus* roots and *Tricholepis glaberrima* aerial parts in investigation has shown that so far there are no published reports worldwide, related to the possible chemical components in the mixture. So, the present study was aimed to investigate the possible chemical components by first preparing the chloroform extract and identification of the compounds by subjecting it to GC-MS analysis.

II. MATERIALS AND METHODS

2.1 Collection and Authentification of Plant Material

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-19

RESEARCH JOURNEY International Multidisciplinary E-Research Journal ISSN : 2348-7143
Impact Factor (SJIF) - 6.261 | Special Issue 120 : Recent Developments in Life Sciences for Human Welfare February 2019

Alteration In Biochemials From Guava (Psidium guajava) Fruits Due to Post-Harvest Fungal Pathogens.

Mumtaz Baig And Shaikh Farukh Kareem
Dr. Rafiq Zakaria College For Women, Aurangabad. (M.S.) India

Abstract :

In the present investigation six fungi were studied from Guava fruits which cause considerable biochemical anges which alter the quality of Guava fruits. Guava (Psidium guajava fruit is highly perishable susceptible to schanical damage and chilling injury which has limited post harvest shelf life. The nutritional value of fruits inly depends on the quality and quantity of chemical substance which are nutritive. The infected guava showed decrease in the quantity of total soluble sugars, ash, protein, vitamins and minerals, when compared with the ntrol. Pestalosia psidii, Gleosporium psidii, Rhizoctonia solani, Fusarium spp, Alternaria alternata and Geotrichum ndidum, were found to be associated with the ripening of Guava and also causes rot during storage.

Key words : Pestalosia psidii, Gleosporium psidii, Rhizoctonia solani and, Fusarium spp

Introduction:

Guava (Psidium guajava, L) is the most widely own and important commercial crop of the Myrtaceae nily. It is native to tropical America and is widely stributed throughout the tropics (Kennard and Winters, 60). Guava is an important resource in the domestic onomy of many countries in the tropics (Yavada 1996). uits constitute an important part of human diet. Fruits : rich source of sugars ,amino acids ,organic acids tamin and other nutrients ,but during pathogenesis uits causes biochemical changes which reduces their od and market value. Mehrotra R.S Agarwal (1998). ya and Arun(1993). Guava is a delicate, soft and delicious fruit which is very nutritious and rich in scorbic acid. Several minerals useful for human health andon and Chanda, Wilson)1980. Due to the delicate e, short post harvest life and susceptibility to chilling ury and disease of the fruit poor handling practices d storage facilities limits its long duration storage and nsportation which in turn are limited the potential r commercialization of guava fruit. The main factors preciating post harvest quality in guava are fast loss of een color ,excessive softening, loss of turgidity (Brown d Wills, 1990). The fruits are delicious in taste the fruit ntain 74-87%, moisture 13-26%, dry matter 0.5-1.0%, h 0.4-0.7%, fat 0.8-1.5% (Chin and Young, 1980). It is :h in Ascorbic acid, vitamin-c. It also contains alarge nount of phosphorous, calcium, Iron, Potassium and dium (Lim and Khoo, 1990).

Materials and Methods :

Infected guava fruits were collected from local arket and brought to the college laboratory in separate can and sterile polythene bags. After bringing the fected fruits in laboratory symptoms were critically observed and noted. The stage of disease development noted. The extend of damage tissue of fruit were carefully estimated. The isolation were made from infected fruits on PDA medium. Small piece of infected part of fruit were carefully removed and surface sterilized with 0.1Hgcl$_2$ and transferred to petridishes which were then incubated for 8 days at 28°c.Different fungal colonies were recorded. Fungal cultures were purified and maintained in test tube slants at 4°c for further investigation. The colonies of fungus were identified by referring Gilman(1971), Smith (1960) Tilak (1998) and with standard literature .By using Koch"s Postulates, the pathogenecity of various fungi isolated from infected guava fruits was carried out in laboratory.Healthy and uninjured ripened guava fruits of uniform size were washed with distilled water.Surfaced sterilized fruits were wounded 2 X 2 X 2 mm spore suspension of Pestalosia psidii, Gleosporium psidii, Rhizoctonia solani, Fusarium spp, Alternaria alternata and Geotrichum candidum,inoculated in guava fruits separately. The fruits were incubated at 28±°c for 8 days. The control healthy fruits without inoculation served as control. The healthy and inoculated fruits were analyzed for total sugars, protein, reducing sugar, total free amino acid, vitamin- c, total ash, total phenol calcium and potassium. Free amino acids were estimated by the method of Jayaraman (1984). Dubols, etal.1956 and Miller (1959) methods are used for estimation on changes in total sugar and reducing sugar. The ash content was estimated by using the technique of Hart and Fisher (1971). Non reducing sugar content was determined by substracting the values of reducing sugar from total sugar. The method for quantitative estimation of total phenol and estimation of Ascorbic acid was done by referring the method given by Sadasivam and Manikam.

Pri. inted by : PRASHANT PUBLICATIONS

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College
for Women, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

RESEARCH JOURNEY International Multidisciplinary E-Research Journal ISSN : 2348-7143
Impact Factor (SJIF) - 6.261 | Special Issue 120 : Recent Developments in Life Sciences for Human Welfare February 2019

Physico-Chemical Profile of Godavari River.

Shaikh Yasmeen Baig Mumtaz
Dr. Rafiq Zakaria College for Women
Navkhanda Jubilee Park, Aurangabad (M.S.) India

Abstract :

The present study deals with comparative study of water quality of Godavari River, Aurangabad (M.S.) India. The physico-chemical parameter characteristics were studied and analyzed. The result revealed that the parameters of Godavari River are temperature, conductivity, pH, dissolved oxygen (DO), biological oxygen demand (BOD), calcium(Ca2+), magnesium(Mg2+), chloride(Cl-), ,TDS,TH and total alkalinity beyond the permissible limits according to WHO and ISI standards for drinking process.

Key words : Physico-chemical parameters, seasonal variation.

Introduction :

Hydrochemical studies of water depend on numbers of factor including nature of recharge, residence time of aquifer and pollution by anthropogenic activities. Water demand has increased over the year, which leads to water scarcity, in many parts of world. India is now leading towards ground water crises, mainly due to improper management of water resources and environmental degradation. Major areas in Maharashtra, including Godavari River and its area, facing significant shortage of drinking water supply due to the lack of insufficient monsoon rainfall in the study area and water flow in the river. The water reservoirs like Manjra project, Dhanegaon, Majalgaon project, Majalgaon Bendsura project, pali are the major drinking sources of water. But most of the residents in study area are depends mainly on ground water sources of drinking water.

Materials and Methods :

Ten ground water samples were collected from the study area in different seasons i.e. summer, monsoon and winter. The chemical analysis of samples was carried out by following standard procedures.

Result and Discussion :

To analyze physico - chemicals parameters, of waters samples were collected. The season wise data was presented in the table. Some of the interesting observation is summarized below. temperature, conductivity, pH, dissolved oxygen (DO), biological oxygen demand (BOD), calcium (Ca2+), magnesium (Mg2+), chloride (Cl-), TDS, TH and total alkalinity were analyzed in laboratory using pertinent literature, APHA (2005)

Physico-chemical parameters	Summer	Monsoon	Winter	Average
Temperature	27.34	23.25	21.00	24.33
pH	6.48	7.80	7.80	8.553333
Conductivity	148.25	293.50	136.75	192.8333
TDS	92.5	126.15	81.89	80.78
TA	430.25	528.75	402.75	453.9167
TH	413.37	536.75	350.00	433.3667
CL	131.85	365.18	147.78	214.9367
Ca^{2+}	143.82	182.5	121.5	149.2733
Mg^{2+}	13.05	13.25	9.55	10.28333
DO	5.4	7.5	8.0	6.966667

Seasonal Variations of water parameters.

1. Temperature (T) :

In present investigation maximum value of water temperature were recorded in summer season corresponding with the atmospheric temperature. Our findings are in good agreement with those of Palharya et.al. (1993) Verma et.al., (1978) and Ganpati (1943). During summer, water temperature was higher because of low water level, clear atmosphere and greater solar radiation. Water temperature is lower in rainy season and it was due to frequent cloud, high percentage of humidity and high water level.

2. pH :

There is seasonal fluctuation in ph values which is also reported by Sireenivasan (1965), Vyas and Kumar (1969). However maximum pH observed during winter is in agreement with Goals work. The higher value of pH in winter may be due to the growth of microscopic as well as filmental algae which utilize carbon from carbonates, sulpher from sulphate. Nitrogen from nitrates and phosphorous from phosphate converting them in to hydroxyl ion which are responsible for increase in pH.

3. Conductivity :

In the present investigation maximum conductivity values were observed in the water sample. Usually high conductivity values were observed in summer season as compared to rainy and winter season which is in agreement with the observation made by Jeevan (1995)

Dr. Baig Mumtaz
Asst. Prof. Botany
Dr. Rafiq Zakaria College
for Women, Aurangabad.

Printed by : PRASHANT PUBLICATIONS

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD

INTERNATIONAL JOURNAL OF RESEARCH CULTURE SOCIETY
Monthly, Peer-Reviewed, Refereed, Indexed Journal
ISSN: 2456-6683 Volume - 2, Issue - 11, Nov – 2018
Impact Factor: 4.526 Publication Date: 30/11/2018

Gas Chromatography- Mass Spectroscopic Analysis of Oil Extracted From Freshwater Edible Magur Fish (*Clarias Batrachus*) From Marathwada Region

Vishal Ladurya [1], Mohammad Moaviyah Moghal [1], Mazahar Farooqui [2], Vidya Pradhan [2]
[1] Maulana Azad College of Arts, Science & Commerce, Aurangabad, Maharashtra, India
[2] Dr. Rafiq Zakaria College for Women, Navkhanda, Aurangabad, Maharashtra, India
Email - vidyapradhan7@gmail.com

Abstract: *Gas Chromatography Mass Spectrometry (GC-MS) is only one of its kind method for the study and measuring quantity of organic volatile and semi-volatile compounds. Gas chromatography is utilized to separates mixtures into individual components employing a temperature-controlled capillary column. Mass spectrometry is applied to recognize a variety of components from their mass spectra. In the present study volatile semi-volatile compounds present in Oil extracted from Magur Fish (Clarias Batrachus) are analyzed. Magur Fish oil is extracted by Supercritical fluid extraction method and then analyzed by Gas Chromatography Mass Spectrometry (GC-MS). A total of 30 compounds were found and quantified in this study.*

Key Words: *Gas Chromatography, Mass Spectrometry, Fish Oil, Magur Fish, (Clarias Batrachus).*

1. INTRODUCTION:

The Asian catfish Clarias batrachus is an air-breathing indigenous catfish in India it is popularly known as magur fish[1] In india Magur fish is commonly found in fresh water and brackish waters. It is a commercially important in India, Bangladesh, Thailand, Philippines, Myanmar and China because of its good taste, high protein amount and non content. It also has therapeutic application [2]

Sinha M. *et al* conducted comprehensive study of breeding and larval rearing of C. batrachus with some improvised modifications for production of magur seed in large scale at farm level in respect of brood fish management, larval feeding, water quality management and disease prevention [1]. Kishore Dhara and Nemai Chandra Saha conducted study on Controlled Breeding of Asian Catfish Clarias batrachus using Pituitary Gland Extracts and Ovaprim at different Temperatures, Latency Periods and their Early Development [2]. S. P. Singh, *et al* performed experimental work in order to find out the effect of water temperature on physiological responses of Asian catfish clarias Batrachus [3]. K. Tasleem & T. Ahmed conducted study on seed production technique of indigenous magur (clarias Batrachus), Shing (Heteropneustes fossilus) and Pabda (Ompok Pubda) through induced breeding [4]. T. Asha *et al* performed study on " Field trials on culture of clarias batrachus[5]. Nimmy Joseph *et al* performed investigational work in order to find out Genetic Variation in the Natural Populations of Clarias batrachus from India Using Microsatellite Markers [6] in recent times, we used supercritical fluid extraction technology in order to extract compounds from various biological material such as plants and animals, performed GC-MS analysis of oil extracted for fresh water crab and also analyzed fatty acid composition of some animals [7-13].

2. MATERIAL AND METHOD:

The Magur Fish (*Clarias Batrachus*) is purchased from local market, at Aurangabad District (Maharashtra) India. The Magur Fish meat is dried in oven for 8 hours at 50 ° C. After proper drying, the dried Magur Fish meat is subjected to supercritical fluid extraction process in order to obtain Magur Fish oil. Extraction is performed using SFC (Jasco, Japan) instrument. Carbon dioxide is used as supercritical fluid. Hexane is used as a modifier (co-solvent). Extraction is performed at constant flow rate, Constant temperature and constant pressure. Extraction Conditions: flow rate of supercritical carbon dioxide = 1 ml/min, flow rate of hexane = 1 ml/min, temperature = 40° C and pressure = 25 Mpa. Extracted oil from the freshwater Magur Fish is used as a sample for gas chromatography Mass spectroscopy analysis.

Table 1: Specification of GC-MS

Conditions During gas chromatography/ Mass spectroscopy analysis	
Run Time(min)	54.00
Injection Volume(uL)	1.00
Scan	1.00
Low Mass(m/z)	6430
High Mass(m/z)	40
	400

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

INTERNATIONAL RESEARCH JOURNAL OF PHARMACY
www.irjponline.com
ISSN 2230 - 8407

Dr. Rafiq Zakaria College for Women

Research Article

THE EFFECT OF *ALOE VERA* EXTRACTS ON THE VIABILITY OF *ECHINOCOCCUS GRANULOSUS* PROTOSCOLICES

Fadel Y. Al-Arabi *, Mansour Abdulnabi H. Mehdi, Mazahar Farooqui, Vidya Pradhan
Department of Zoology Dr. Rafiq Zakaria College for Women, Aurangabad 431001, India
*Corresponding Author Email: alaraby1100@gmail.com

Article Received on: 06/02/19 Approved for publication: 14/03/19

DOI: 10.7897/2230-8407.1004147

ABSTRACT

The study included the preparation of alcohol and aqueous extracts of *Aloe Vera* leaves at concentrations 50-75-100 mg / ml to study the effect of the viability protoscolices of the parasitic *Echinococcus granulosus in vitro* and their growth *in vivo* in order to reach an effective focus in killing the protoscolices during the shortest period of time. The results showed a significant decrease in the treatment of the alcoholic and aqueous extracts *Aloe Vera* leaves. Total killings for protoscolices at 100 mg / ml at 24 hours followed by concentration 75 and 50 mg / ml at 48 hours exposure period.

Keywords: *Echinococcus granulosus*, Protoscolices, Extracts, *Aloe vera*

INTRODUCTION

Hydatid cyst disease is parasitic disease common in humans and ruminants and is a health and economic problem in most parts of the world.[1] Hydatidosis is particularly prevalent in rural areas where cattle, especially sheep and dogs, are abundant. The parasite needs to complete its life cycle to a host of sheep, goats, camels, pigs, horses, donkeys, monkeys and other animals of the platoon to survive alive. [2] It is a parasitic disease which transmitted from carnivores to humans and animals, Herbivorous [3], cause the larval stage of *Echinococcus granulosus* parasite the disease, which belongs to the Platyhelminthes phylum of the Cestoda species infect the small intestine of the carnivorous. [4]

The Hydatid cyst has also posed a serious health problem for human life, and the disadvantage is the disease does not appear clearly until after the development of infection and increase the size of the cyst. [5] There are no definitive cure for this disease so far and surgery is considered the best way to treat and it is difficult to work in some cases because of the location of the cyst, as that the substances that are used to kill protoscolices during surgery having side effects, therefore studies in recent years have directed to many diseases using the folk Medicine known as a herbal medicine for effective, safe and economical. [6] Medicinal plants are better than medicines for two reasons. The first is that plants are considered as a repository of medicines that can be tested on humans without any side effects and the second is its availability in large quantities in most countries of the world. [7] The importance of this study to show the effect of the extract of alcoholic and aqueous of the leaves of the plant *Aloe vera* in the vitality of the protoscolices of *Echinococcus granulosus* of sheep origins *in vitro* and their growth *in vivo*.

The plant *Aloe vera* has a history back to the old time which, belongs to the family Liliaceae. [8] *Aloe vera*, a semi-tropical plant is one of the 400 species of *Aloe*. [9] *Aloe vera* has been used for medicinal aims in several applications for millennia: India, Egypt, Greece, Mexico, Japan, and China. It is utilized in functional foods especially for the preparation of health drinks with no laxative effects. It is also used in other food products including milk, ice cream, confectionery, etc. *Aloe vera* gel is also used as flavoring component and preservative in some foods. [10] *Aloe vera* is being generally used in herbal medicine as an antiviral, antibacterial, antifungal, and anti-inflammatory agent. Its ant diabetic effect in rats is also reported it is also used as a treatment for many skin diseases. Looking at its large medicinal outcomes. [11]

MATERIALS AND METHODS

Plant source

The leaves of the plant under study were obtained from the campus of Dr Rafiq Zakaria college for women of is authenticated.

Preparation of plant extracts

Aqueous extract

Adapted method has been followed. [12] The aqueous extract of the leaves of *Aloe vera* plant was prepared by weighing 40 g of leaves powder and 400ml of distilled water. The mixture was stirred by magnetic stirrer for 24 hours. Then the mixture was filtered through four pieces of medical gauze and poured into the centrifuge tubes at speed of 3000 rpm for 10 minute. After that mixture was put in Petri dishes and placed in oven at 40 C° to dry. Finally the extract was scraped and collected in clean glass vials and kept in refrigerator for use.

Alcoholic extract

Alcoholic extract was prepare by using Soxhlet apparatus 40gm of the plant leaves powder was taken and placed in the apparatus. Then 400 ml ethyl alcohol concentration of 70% was added. It was left undisturbed. The solvent was evaporative by rotary evaporative. The mixture was finally placed in clean Petri dishes as the aqueous extract.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH

INNOVARE ACADEMIC SCIENCES

Vol 12, Issue 2, 2019

Online - 2455-3891
Print - 0974-2441

Research Article

PHYTOCHEMICAL SCREENING AND ANTIAMEBIC STUDIES OF *TAMARINDUS INDICA* LEAVES EXTRACT

MANSOUR ABDULNABI H MEHDI[1*], FADEL YS ALARABI[1], MAZAHAR FAROOQUI[2], VIDYA PRADHAN[1]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, India. [2]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Navkhanda, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad - 431001, India. Email: Mansourabdulnabi@gmail.com/devidyasp@gmail.com

Dr. Rafiq Zakaria College for Women

Received: 11 September 2018, Revised and Accepted: 02 November 2018

ABSTRACT

Objective: The present study deals with preliminary phytochemical screening of *Tamarindus indica* extracts and investigates its antiamebic effect against *Entamoeba histolytica* in vitro.

Methods: *E. histolytica* was isolated from stools of patients with amebic dysentery and cultivated in lock-egg medium. The leaves extract was added to check its antiamebic activity.

Results: The phytochemical screening shows that *T. indica* contains alkaloids, flavonoids, phenol, and tannins. *T. indica* extracts (aqueous and ethanolic) were added to culture media *E. histolytica*. It was observed that *E. histolytica* count reduced to zero after 72 h and 96 h when 15 mg/ml of aqueous and ethanolic extracts were added, respectively. It is also revealed that there is no cytotoxicity against erythrocytes even when high concentration of plant leaves extract is used.

Conclusion: The in vitro sensitivity of *T. indica* leaves extract against the *E. histolytica* is established.

Keywords: *Entamoeba histolytica*, *Tamarindus indica*, Phytochemical.

© 2019 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/) DOI: http://dx.doi.org/10.22159/ajpcr.2019.v12i2.29684

INTRODUCTION

Entamoeba histolytica has affected 50 million people of the world's population annually with the prevalence of 50% of the general population it is estimated to cause >100,000 deaths per year [1,2]. The prevalence of amebiasis varies from 1% in industrialized countries to 50%–80% in tropical countries [3]. It also represents the second largest cause of mortality from infection with parasitic protozoa after malaria [4].

At present, metronidazole is the therapeutic drug of choice for the treatment of amebiasis [5], but it experiences drug resistance by *E. histolytica* [6], resulting in the need for increased doses to overcome the infection [7]. However, this drug has several untoward side effects such as headache, metallic taste in the mouth, and vomiting as well as neurotoxicity [8,9]. *E. histolytica* parasite has registered some level of resistance to most of the medicines rendering them ineffective [10]. In addition, the risk of potential mutagenicity, carcinogenicity, and side effects of metronidazole, and taking into account, the development of resistant strains of *E. histolytica* against metronidazole, new, more effective, and safer antiprotozoal agents is urgently required [9,11]. In developing countries, medicinal plants are popular because these products are safe and widely available at low cost [12]. Screening natural products provide the chance to discover new molecules of the unique structure with high activity and selectivity [13]. Therefore, there is a need to find new compounds that can help to curb some of the menaces of resistance and also treat the *E. histolytica*.

The aim of this study is to perform preliminary phytochemical screening of the *Tamarindus indica* extracts and to investigate the antiamebic effect of *T. indica* against *E. histolytica* in vitro. In addition, this study aims to investigate cytotoxicity against the erythrocytes for *T. indica* extracts. According to literature survey, antiamebic activity of this plant has not previously been reported. Therefore, this study could be assumed as the first report on this topic.

MATERIALS AND METHODS

Collection of plant sample

T. indica leaves (Fig. 1a) were collected from Rozabagh garden. The collected plant was identified botanically by Dr. Rafiuddin Naser Department of Botany Maulana Azad College, Aurangabad. The leaves were washed well under tap water, then dried in the laboratory in the absence of sunlight and left for two weeks. The leaves were flipped daily to remove damaged leaves and to prevent moisture. When the dried leaves were ready, they were grinded with an electric grinder until they became soft powder. The powder was preserved in bottles at 4°C in refrigerator.

Preparation of plant extracts

The following procedures were used to prepare aqueous and ethanolic 70% extract [14].

Preparation of aqueous extracts

About 40 g of dry plant powder was taken in a beaker and 400 ml of distilled water was added. Then, the mixture was stirred with a magnetic stirrer for 24 h. It was then sprayed by four layers of gauze cloth to separate the large fibers. The filter was then separated by centrifuge at 3000 rpm for 10 min. The extract was evaporated by leaving it in an incubator at a temperature of 50°C for 24 h. The extract was weighed and kept in refrigerator in sterilized and dark glass containers.

Preparation of ethanolic extracts

About 40 g of dry plant powder was weighed and transferred to Soxhlet extraction. 400 ml of ethanol was added to it. The plant materials were extracted at 50–55°C, till the color extract disappeared. The solvent was evaporated by rotary evaporator. The dry mass was transferred to incubator and kept for 24 h 50°C. It was weighed and kept in refrigerator in sterilized and dark colored containers.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

INTERNATIONAL RESEARCH JOURNAL OF PHARMACY
www.irjponline.com
ISSN 2230 – 8407

Dr. Rafiq Zakaria College for Women

Research Article

AN EVALUATION OF THE EFFECT OF *HYPHAENE THEBAICA* SAP AGAINST HYDATID CYSTS PROTOSCOLECES *IN VIVO* AND *IN VITRO*

Fadel Y. S. Al-Arabi [1]*, Mansour Abdulnabi H. Mehdi [1], Gozif Mohammed N. Omar [2] and Vidya Pradhan [1]
[1]Department of Zoology Dr. Rafiq Zakaria College for Women, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India
[2]Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India
*Corresponding Author Email: Alaraby1100@gmail.com

Article Received on: 09/11/18 Approved for publication: 09/01/19

DOI:

ABSTRACT

In the present work investigated the effect of the sap of the plant *Hyphaene thebaica* in the vitality of the protoscolices of *Echinococcus granulosus*of sheep origins in vitro and their growth *in vivo*. The results of this study showed that the sap of the *Hyphaene thebaica* stem has fatal effects on the protoscolices of the *Echinococcus granulosus* of sheep origin. The 100% concentration led to complete death of the protoscolices over the time period of 10 min. There were also significant differences among concentrations used at $p < 0.05$. When injecting the laboratory animals with the treated protoscolices they failed to formation secondary hydatid cysts.

Keywords: Hydatid cysts, Echinococcosis, protoscolices, *Hyphaene thebaica*

INTRODUCTION

Hydatidosis is a very serious healthy and epidemic problem in the countries where it spreads.[1] *E. granulosus* requires dog and other canids as definitive hosts and livestock as an intermediate plete its life cycle.[2] It does not appear early and its symptoms are not clinically clear, but after arriving in an advanced stage and due to its evolution increase in size, it causes pressure on the organ adjacent to its location.[3] It has two developmental stages in its life cycle: the adult tapeworm, which is the sexual stage, and the cystic larval metacestode, which is reproduced asexually.[4] Human beings are accidental intermediate hosts and get infected due to food or water contaminated with feces of dog containing eggs of parasite or with direct contact with dogs.[5] Therefore, the studies in recent years have been directed to investigate many diseases using folk medicine known as a herbal medicine for being effective, safe and economical factors.[6] The significance of this study is to show the effect of the sap of the plant *Hyphaene thebaica* in the vitality of the protoscolices of *Echinococcus granulosus* of sheep origins *in vitro* and their growth *in vivo*.

Hyphaene thebaica has local names such as (doum) in Arabic , (gingerbread palm) in English, and (palmier doum) in French. *Hyphaene thebaica* belongs to the family of Arecaceae, which is a deciduous palm of 10-17 m height, with a girth of 90 cm. The trunk is Y-shaped, and the tree is easily recognizable by the dichotomy of its stem forming up to 16 crowns.[7] *Hyphaene thebaica* is one of the 11 species of the genus found in Africa. Widespread in the Sahel, it grows from Mauritania to Egypt, from Senegal to Central Africa and east to Tanzania. In Egypt, the doum palm has been cultivated since ancient times and has long been considered a sacred tree, symbolizing masculine strength. It was also planted in the belief that it protects and supplies people with shade, water and food after their death.[8] In medicine, its roots are used in the treatment of bilharzia.[7] The fruit pulp extract is also used in the treatment of bleeding especially after childbirth.[9] It is also used as a treatment to lower blood pressure.[10] The anti-cancer, antioxidant and antimicrobial activities of the fruit pulp has also been well documented.[11, 12]

MATERIALS AND METHODS

Plant source

The plant sap of *Hyphaene thebaica* was obtained from Al-Hasmo Area, Aden-Yemen.

Preparation of plant sap

The first stage is to peel the scales that grow in the stem of the tree softly so that it becomes free of the leaves and scale. Then, a highly accurate stage comes which is amputation of a specific part of the tree's neck to separate its head from the rest of the trunk. After that, the most dangerous step comes on the life of the tree which is the digging of a hole on the neck(the heart) where a light layer is peeled superficially to the level that let the transparent liquid (Taari) come out without causing death to the tree. In the above-mentioned stages, various kinds of knives are used, and a natural tongue made of a piece of light plastic is set up away from the heart bark to regulate the flow of the liquid and maintain it without loss and leakage out of the box that is placed in the lowest neck. This process of (peeling and collecting liquid sap) is repeated three to four times per day in the early morning, in the afternoon and then in the middle of the night.

This fluid is called in its fresh state (Taari) and is characterized by sugar taste and smell similar to the smell of palm fluid of coconut "Nargil", and is used for the treatment of some types of worms that infect human intestines.

This liquid is collected in clean containers for the maximum of 40 days until it becomes mature vinegar. Before its 40 days age, this sap is characterized as a narcotic substance that affects human mind. If this liquid is exposed to a simple degree of air pollution

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Naukhanda, Jubilee Park,

Research Article

Effect of *Tamarindus indica* extracts on haematological parameters in albino rats infected with *Entamoeba histolytica* parasite

Mansour Abdulnabi H. Mehdi[a*], Fadel Y. S. Alarabi[a], Gozif Mohammed N. Omar[b], Vidya Pradhan[a]

[a]*Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad 431001 India*

[b]*Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad 431001, India.*

Received: 1 February 2019 Revised: 19 March 2019 Accepted: 23 March 2019

Abstract

Objective: The study aimed to investigate the effect of *Tamarindus indica* extracts on hematological parameters in rats infected with *Entamoeba histolytica* parasite which causes Amoebic dysentery disease. **Material and Methods:** A total of 12 albino rats were grouped into 4 groups of 3 rats each. Group 1 of rats serve as negative control group, while group 2, 3 and 4 were treated with metronidazole drug, ethanolic extract and aqueous extract respectively, at concentration 500mg/kg for 10 days, the blood parameters were evaluated hemoglobin (HG), hematocrit (HCT), red blood cell count (RBC), mean platelet volume (MPV), mean cell volume (MCV), mean corpuscular haemoglobin (MCH), red cell distribution width (RDW), procalcitonin test (PCT), total white blood cell platelet distribution width (PDW), mean corpuscular haemoglobin concentration (MCHC), total white blood cell (TWBC), lymphocyte (LY), monocyte (MO) and mixed cells of neutrophile, eosinophile and basophile in the rats blood, using haematology auto-analyser system (CBC Mindray BC-3000Plus). **Results:** Show a significant increase at P≤0.05 in HG, HCT, RBC, MPV, MCV, MCH, RDW, PCT, TWBC, LY and mixed cells of neutrophile, eosinophile and basophile when compare with metronidazole drug and the control group of rats during treatment stages. The results also indicate a significant decrease at P≤0.05 in PDW, MCHC and MO compared to the control group of rats. **Conclusion:** Based on the results of this study, the present data suggest that the efficiency of *T. indica* extracts in improving blood standards through variations occurring in blood proportion.

Keywords: *Tamarindus indica*, *Entamoeba histolytica*, haematological parameters

Introduction

Entamoeba histolytica is an intestinal protozoan parasite. It is the second leading cause of death in humans after malaria (Tachibana et al., 2004; Al-Warid et al., 2013). The World Health Organization (WHO) estimates that the *E. histolytica* parasite causes approximately 50 million cases of dysentery and 100,000 deaths per year (Ravdin et al., 2005). Amoebiasis is spreading worldwide and represents a serious health threat in tropical and subtropical developing regions and in the industrialized countries (Al-Warid et al., 2013). These high rates of mortality are due to several factors including ignorance, poverty, overcrowding, sewage contaminated drinking water and low maintenance of public health. These factors facilitate the transmission of infection from person to person (Allason-Jones et al., 1986).

Tamarindus indica is a plant belonging to the Fabaceae family (Wagh and Bhagure, 2012). This plant is cultivated in large quantities in different regions of India (Zohrameena et al., 2017). The extracts have received considerable attention for their potential therapeutic properties for many diseases. These include antiparasitic (Bhadoriya et al., 2011; Ahmed and Ayoub 2015), Antifungal (Satpute and Vanmare, 2017) antimicrobial (Abubakar, 2016). It has also been used as a folk remedy to treat various ailments such as abdominal pain, laxative, fever, wound healing, dysentery, and chronic diarrhoea exhaustion (Havinga et al., 2010). The study aimed to investigate the effect of *T. indica* extracts on haematological changes in rats infected by *E. histolytica* parasite.

Materials and methods

Plant sample

Leaves of *T. indica* were collected from the campus of Dr.

*Address for Correspondence Author:
Mansour Abdulnabi H. Mehdi
Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad, 431001 India.
Email: mansourabdulnabi@gmail.com; drvidyasp@gmail.com

DOI: https://doi.org/10.31024/ajpp.2019.5.5.5

2455-2674/Copyright © 2019, N.S. Memorial Scientific Research and Education Society. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

The Pharma Innovation Journal 2018; 7(11): 22-26

www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.03
TPI 2018; 7(11): 22-26
© 2018 TPI
www.thepharmajournal.com
Received: 13-09-2018
Accepted: 15-10-2018

Fadel YS Al-Arabi
Dr. Rafiq Zakaria College for Women, Aurangabad, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India

Gozif Mohammed N Omar
Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India

Mansour Abdulnabi H Mahdi
Dr. Rafiq Zakaria College for Women, Aurangabad, Dr Babasaheb Ambedkar Marathwada University, Aurangabad, India

Vidya Pradhan
Dr. Rafiq Zakaria College for Women, Aurangabad, Dr Babasaheb Ambedkar Marathwada University, Aurangabad, India

Correspondence
Fadel YS Al-Arabi
Dr. Rafiq Zakaria College for Women, Aurangabad, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India

The effect of *tamarindus indica* extracts on larval stage of *Echinococcus granulosus* parasite *in vivo* and *in vitro* study

Fadel YS Al-Arabi, Gozif Mohammed N Omar, Mansour Abdulnabi H Mahdi and Vidya Pradhan

Abstract
It is known that medicinal plants are the most important alternative to chemical drug resources, especially for antimicrobial and parasite targets and the treatment of various diseases. The present study aimed at determining the effect of aqueous and alcohol extracts of the leaves of the *Tamarindus indica* plant on the vitality of the protoscolices of sheep *in vitro*. The results study show that alcohol and aqueous extract solutions used had an inhibitory effect on protoscolices compared with control group over all concentration range. The percentage of homicide was measured by using the eosin stain test, which depends on changing the green color of the alive protoscolices to red after killing it. The study revealed that the concentration of 100 mg / ml was the optimal focus for killing the protoscolices after 4 hours of exposure. It was observed that when laboratory animals were injected with the protoscolices treated with the extracts, the protoscolices failed in the formation of secondary hydatid cysts.

Keywords: Hydatidosis, *Echinococcus granulosus*, protoscolices, *Tamarindus indica*

Introduction
Cystic echinococcosis or hydatidosis is a silent cyclozoonotic infection of humans and domestic animals produced by the larvae of the cestode *Echinococcus granulosus* [1]. The larval stage of granulosus parasite is the cause of the disease, which belongs to the Platyhelminthes phylum of the Cestoda species infect the small intestine of the carnivorous [2]. Hydatid cyst spreads throughout most of the world, especially in areas where sheep are found in high rate and is endemic in Asia, North Africa, South and Central Americas, North America, Canada, and the Mediterranean region. In many countries, hydatid disease is more prevalent in rural areas where there is close contact between people, dogs, and various domestic animals which act as intermediate hosts [3].
Therefore the studies in recent years have been directed towards investigating many diseases using the folk medicine known as a herbal medicine for its effective, safe and economic factors [4].
The importance of this study is to show the effect of the alcohol and aqueous extract of the leaves of the plant *T. indica* in the vitality of the protoscolices of *Echinococcus granulosus* of sheep origins *in vitro* and their growth *in vivo*. There is a growing interest of research on medicinal plants due to their potential to cure many diseases, because of low prices and lower incidence of side effects when compared to synthetic drugs [5].
T. indica which belongs to the family Leguminosae (Fabaceae), commonly known as Tamarind tree, is one of the fruit tree species that is used as traditional medicine. Tamarind tree is found especially in the Indian subcontinent, Africa, Nigeria, Bangladesh, Pakistan, and most of the tropical countries. It is preferred to be used for diarrhoea, abdominal pain, and dysentery, some bacterial infections and parasitic infestations, constipation, wound healing, and inflammation. It is a rich source of most of the essential amino acids and phytochemicals, and hence the plant is reported to possess antidiabetic, antimicrobial, antivenomic, antioxidant, antimalarial, cardio protective, hepatoprotective, antiasthmatic, laxative and anti-hyperlipidemic activity. *T. indica* has amelsorative effects on many diseases. It can also be favoured as a nutrient addition for malnourished patients as it is cheap and easy to access [6].
T. indica is a plant that can be used traditionally in wound healing, snake bite, colds, helminth infections, and fever. It may also play a role as antimicrobial, antidiabetic, antiinflammatory and effects on the control of satiety, playing a potential role in the treatment or prevention of

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

IJPSR (2019), Volume 10, Issue 7 (Research Article)

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES AND RESEARCH

Received on 18 October 2018; received in revised form, 02 April 2019; accepted, 30 May 2019; published 01 July 2019

THERAPEUTIC EFFECT OF *TAMARINDUS INDICA* EXTRACTS ON THE PATHOGENESIS OF *ENTAMOEBA HISTOLYTICA IN-VIVO*

Mansour Abdulnabi H. Mehdi *[1], Gozif Mohammed N. Omar [2], Mazahar Farooqui [1] and Vidya Pradhan [1]

Dr. Rafiq Zakaria College for Women [1], Aurangabad - 431001, Maharashtra, India.
Department of Biochemistry [2], Dr. Babasaheb Ambedkar Marathwada University, Aurangabad - 431001, Maharashtra, India.

Keywords:

Entamoeba histolytica, *Tamarindus indica*, Histopathology, Toxicity, *In-vivo*

Correspondence to Author:
Mansour Abdulnabi H. Mehdi

Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, Maharashtra, India.

E-mail: mansourabdulnabi@gmail.com

ABSTRACT: *Entamoeba histolytic* is a protozoan parasite which causes amoebiasis, about 50 million people are affected yearly, and it caused more than 100,000 deaths per year. The study investigates the therapeutic effect of ethanolic and aqueous *Tamarindus indica* leaves extracts on infected rats with *Entamoeba histolytica*. Twenty-one *Rattus norvegicus* rats were infected with *Entamoeba histolytica* and divided into seven groups (three rats in each group). Groups (1, 2, and 3) were treated with aqueous *Tamarindus indica* extracts at doses 125, 250, and 500 mg/kg respectively for ten days. Groups (4, 5 and 6) were treated with ethanolic extract of *Tamarindus indica* at doses 125, 250, and 500 mg/kg respectively for ten days. Group (7) was left untreated as a positive control group. The results showed a significant decrease at $p \leq 0.05$ in the numbers of parasite cell from the second day of treatment in all the groups treated with aqueous as well as ethanolic extract. This decrease gradually continued during the days of treatment until it reached zero on the last day of treatment for the dose of 500 mg/kg for both aqueous and ethanol extract. Histopathological study showed that *Entamoeba histolytica* causes mucosal damage, inflammation and necrosis for colon, while ethanolic extract of *Tamarindus indica* at dose 500 mg/kg repairs the parasite damage in comparison with a range of positive and negative control groups. Extracts of *Tamarindus indica* leaves indicated neither any toxic effect nor mortality up to the 1000 mg/kg.

INTRODUCTION: Approximately 50 million of the world populations are infected by *E. histolytica* and the reach a prevalence of 50% of the general population and it causes more than 100,000 deaths annually [1]. Metronidazole is used for the treatment of *E. histolytica* infection; this drug is resisted by drug resistance from *E. histolytica*, [2] however, this drug has some unwanted side effects such as headaches, metallic taste, nausea, vomiting as well as neurotoxicity, this makes it unpleasant to be taken by patients [3].

QUICK RESPONSE CODE

DOI: 10.13040/IJPSR.0975-8232.10(7).3250-56

The article can be accessed online on www.ijpsr.com

DOI link: http://dx.doi.org/10.13040/IJPSR.0975-8232.10(7).3250-56

E. histolytic has registered some levels of resistance to most of the medicines rendering them ineffective [4]. In addition to that, the effective and safer antiprotozoal agents are urgently required [3]. In developing countries, plants are considered as popular because their products are safe and widely available at low cost [5]. This necessitates a search for a safer and effective alternative against *E. histolytica*. This study was performed to evaluate the efficacy of *T. indica* extracts against *E. histolytica* in rats and the study of histological changes after 10 days of treatment.

MATERIALS AND METHODS:

Collection and Identification of Plant: The leaves of *T. indica* were collected from the campus of Dr. Rafiq Zakaria College for Women. This plant was authenticated by herbarium of the Botany Department, Azad College, University of Dr.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

Physico-Chemical Profile of Godavari River. 2018-2019

Shaikh Yasmeen Baig Mumtaz
Dr. Rafiq Zakaria College for Women,
Navkhanda Jubilee Park, Aurangabad (M.S.) India

Abstract :
The present study deals with comparative study of water quality of Godavari River, Aurangabad (M.S.) ... physico-chemical parameter characteristics were studied and analyzed. The result revealed that the param... odavari River are temperature, conductivity, pH, dissolved oxygen (DO), biological oxygen demand (BO... um(Ca2+), magnesium(Mg2+), chloride(Cl-), TDS,TH and total alkalinity beyond the permissible limits ...rding to WHO and ISI standards for drinking process

Key words : Physico-chemical parameters, seasonal variation

Introduction :

Hydrochemical studies of water depend on numbers ...ater including nature of recharge, residence time of ...r and pollution by anthropogenic activities. Water ... increased over the year, which leads to water ...city, in many parts of world. India is now leading ...with ground water crises, mainly due to improper ...agement of water resources and environmental ...radation. Major areas in Maharashtra, including ...avari River and its area, facing significant shortage ...rinking water supply due to the lack of insufficient ...season rainfall in the study area and water flow in ...river. The water reservoirs like Manjra project, ...negaon, Majalgaon project, Majalgaon Bendsura ...ject, pals are the major drinking sources of water. But ...st of the residents in study area are depends mainly on ...und water sources of drinking water.

Materials and Methods :

Ten ground water samples were collected from the ...dy area in different seasons i.e. summer, monsoon and ...ter. The chemical analysis of samples was carried out ...following standard procedures.

Result and Discussion :

To analyze physico - chemicals parameters, of ...ters samples were collected. The season wise data was ...ented in the table. Some of the interesting observation ...summarized below: temperature, conductivity, pH, ...solved oxygen (DO), biological oxygen demand ...OD), calcium (Ca2+), magnesium (Mg2+), chloride ...-), TDS, TH and total alkalinity were analyzed in ...boratory using pertinent literature, APHA (2005).

Physico-chemical parameters	Summer	Monsoon	Winter	Average
Temperature	37.34	25.25	21.80	28.13
pH	8.46	7.80	7.40	8.555555
Conductivity	548.25	393.74	438.75	460.2133
TDS	6[illegible]	106.13	83.69	90.28
CA	430.75	338.75	402.75	433.9167
TH	402.37	336.13	370.00	403.3667
Cl	131.85	86.13	147.75	214.9267
Ca	141.85	85.1	121.7	149.2733
Mg	37.05	13.21	4.55	10.78333
DO	5.4	7.1	8.0	8.966667

Seasonal Variations of water parameters

1. Temperature (T) :

In present investigation maximum value of water temperature were recorded in summer season corresponding with the atmospheric temperature. Our findings are in good agreement with those of Palharya et.al. (1993) Verma et al., (1978) and Ganpati (1943). During summer, water temperature was higher because of low water level, clear atmosphere and greater solar radiation. Water temperature is lower in rainy season and it was due to frequent cloud, high percentage of humidity and high water level.

2. pH :

There is seasonal fluctuation in ph values which is also reported by Sreenivasan (1965), Vyas and Kumar (1969). However maximum pH observed during winter is in agreement with Goals work. The higher value of pH in winter may be due to the growth of microscopic as well as filmental algae which utilize carbon from carbonates, sulpher from sulphate, Nitrogen from nitrates and phosphorous from phosphate converting them in to hydroxyl ion which are responsible for increase in pH.

3. Conductivity :

In the present investigation maximum conductivity values were observed in the water sample. Usually high conductivity values were observed in summer season as compared to rainy and winter season which is in agreement with the observation made by Jeevan (1995).

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

2015-2019

ISSN 2349-4506
Impact Factor:

Global Journal of Engineering Science and Research Management

METAL EXPOSURE TO FRESHWATER BIVALVE MOLLUSCS LAMELLIDENS MARGINALIS FROM KUTLUQ LAKE OF DUALTADABAD DISTRICT AURANGABAD (M. S.) INDIA, IN RELATION TO ASCORBIC ACID CHANGES DURING SUMMER SEASON

Shaikh Yasmeen

*Department of Zoology, Dr. Rafiq Zakaria College for Women, Navkhanda, Jubilee Park, Aurangabad (M.S.), India

DOI:

KEYWORDS: Lamellidens marginalis, cadmium, toxicity, ascorbic acid

ABSTRACT

The present study was conducted to determine alterations in ascorbic acid contents after 96hrs acute toxicity of cadmium in different body parts viz. mantle, gill, gonad, hepatopancreas, siphon, foot, anterior adductor muscle and posterior adductor muscle of freshwater bivalve in *Lamellidens marginalis* in summer season in respective groups i.e. control Lc0 and Lc50 groups. In control group the content was high from posterior adductor muscle (1.897±0.036). In Lc0 group when compared to control group the content was high from gonad (209.25% p< 0.001). In Lc50 group content was high from gonad (138.43% p< 0.001) when it was compared to control group. On the other hand when compared to Lc0 group show significantly increased from gill (4) 75% p< 0.001).

INTRODUCTION

Research Background

When animals are exposed to polluted aquatic environment containing metals, these metals accumulate in various tissues significantly (Fernandes et al., 2008). Accumulated heavy metals induce generation of reactive oxygen species (ROS), which attack unsaturated fatty acids of the cell membrane which leads to formation of lipid peroxidation (Viarengo, 1989). Heavy metals are responsible for biochemical and physiological changes in the organisms. C biochemical composition serve as the initial sensitive indicators of toxic effect on tissues (Thaker and Haritos, 1989).

Biochemical analysis of benthic organisms as monitors is the best option for conventional metal pollution monitoring system which may be insufficient, that leads to inaccurate water quality assessment. It is evident that, even at low concentrations, toxicant causes biochemical changes within individual organisms, before these effects are observed at higher levels of organization (Sarkar et al., 2006). Biochemical responses in aquatic organisms have been used in several monitoring programs to study the anthropogenic pollution (Cajaraville et al., 2000).

Ascorbic acid is important biomolecule. It is responsible for several metabolic reactions (Kaya, 2003). It is important antioxidant that prevents oxidative damage in tissues of organisms. The ascorbic acid has antioxidant property which helps to prevent free radical formation from toxic water soluble molecules that may cause cellular injuries. It a as a hydrogen carrier and plays an important role in carbohydrate, protein or both metabolisms. Lackner (1998) studied that ascorbic acid level was decreased during chronic exposure to different stressors. Waykaret al., (2001) studied the effect of cypermethrin on ascorbic acid content in the mantle, foot, gill, digestive gland and whole body tissues of freshwater bivalve, study of change in ascorbic acid content in molluscs exposed to heavy metals can be useful as an indicator of toxicant stress condition. Nandi et al., (2005) reported that, ascorbic acid prevents oxidative damage to the membranes against peroxydation by increasing the activity of tochoperol. Ascorbic acid is well known to play protective and therapeutic role against pollutant or metal toxicity (Rao et al., 2001). Changes in ascorbic acid content due to exposure to heavy metals were reported by Deshmukh (2013) and Rahane (2014).

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Journal of Association of Zoologists, India 2018-2019 ISSN: 2229-6549

Journal of Association of Zoologists, India. Vol. 7 (I), 78-82 (2019)

CADMIUM LEVELS IN FRESHWATER BIVALVE *LAMELLIDENS MARGINALIS* AFTER ACUTE TOXICITY TEST IN WINTER.

Shaikh Yasmeen* & Pathan Tanvir

*Department of Zoology, Dr. Rafiq Zakaria College for Women, Navkhanda, Jubilee Park, Aurangabad (M.S.), India

Department of Zoology, Kalikadevi Arts, Commerce and Science College, Shirur (Ka), Tal. Shirur Dist. Beed, India

Email: shaikhyasmeen762@gmail.com

Abstract:

The present study was conducted to determine heavy metal, cadmium concentrations in whole body and different body parts viz. mantle, gill, gonad, hepatopancreas, siphon, foot, anterior adductor muscle and posterior adductor muscle of freshwater bivalve *Lamellidens marginalis* in respective groups i.e. control, Lc0 and Lc50 groups. In control group the content was high from gill (1.7272±0.3977). In Lc0 group when compared to control group the content was high from foot (525.03% < 0.001). In Lc50 group content was high from foot (850.00% < 0.001) when it was compared to control group. On the other hand when compared to Lc0 group show significantly high from foot (52.0% < 0.005).

Key words: *Lamellidens marginalis*, Cadmium Acute Toxicity

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

...ember 2019, Volume 6, Issue 4 2018-2019 www.ijrar.org (E-ISSN 2348-1269, P-ISSN 2349-...

Effect of Cadmium on the Histology of Hepatopancreas of the Freshwater Bivalve mollusks Lamellidens marginalis in monsoon season

Shaikh Yasmeen

Associate Professor

Department of Zoology

Dr. Rafiq Zakaria College for Women, Navkhanda Palace, Jubilee Park, Aurangabad (M. S.) India.

Abstract : : Histopathological studies would help in evaluating the extent of damage caused to the tissues under stress. Hence, in the present study an attempt has been made to observe the structural changes in the hepatopancreas of the *Lamellidens marginalis* exposed to acute toxicity of cadmium. In hepatopancreas, enlargement of intertubular area, cell necrosis and the formation of sinuses on exposure to acute concentration of cadmium.

Key Words: Heavy metal Cadmium toxicity *Lamellidens marginalis* Hepatopancreas Histology Degenerative changes Cell necrosis

1. Introduction

Pollution an undesirable changes in the physical, chemical and biological characteristic of air, water and soil, which is harmful to living organisms. Whatever may be the mode of contamination polluted environment is not suitable for existing life forms.

The physico-chemical properties of heavy metals in aquatic systems are the principal factors for their accumulation in animals (Davyd Kova et al. 2005). Heavy metals are posing great threat to the health of Indian aquatic ecosystems due to their toxicity and accumulation behaviour. Many effluents, discharged into nearby ponds and drains without any treatment, contain highly toxic dyes, bleaching agents and heavy metals (Mathur et al. 2005). The common feature of these metals is that they can be easily accumulated by the aquatic biota and become relatively toxic even at fairly low concentrations. Some of these metals are essential in limited quantities to normal growth of animals and human body. Even essential metals are toxic if concentration exceeds the normal requirement. Metals like mercury, copper, cadmium, lead, chromium, nickel and zinc are very toxic, of which ...pt copper and zinc the others are non-essential. Cadmium is the second member of Group II B triad (Zn, Cd, and Hg) in the periodic classification of elements. It has the atomic weight 112.4, atomic number 48, and density 8.6, melting point 320.9° Cand boiling point 765°C. It is a hexagonal crystalline, silver-white malleable metal with stable oxidation state +2. It has a medium class B character compared to zinc and mercury. This character imparts moderate covalence in bonds and high affinity for sulphydryl groups leading to increased lipid solubility, bioaccumulation and toxicity. The chloride, sulphate and nitrates of cadmium are soluble compounds whereas carbonate and hydroxides are not. Cadmium is one of the most toxic and widespread heavy metals, and is a recognized carcinogen in mammals (Pruski & Dixon 2002). There has been rapid and continuous increase in the worldwide production and use of cadmium since 1925. It is used in a number of industrial processes. Because of its ability to protect iron rusting, it is used for coating items of iron by electroplating. Cadmium coated parts of automobiles are most resistant to rust than zinc coated (galvanized) objects. Cadmium sulphide is used as colour ...igment in plastics and in various types of paints. Cadmium reaches the water bodies primarily from the industrial ...ources such as zinc melting and electroplating, combustion of fuels, plastics, phosphate fertilizers, pesticides, ...omestic wastes, oil refineries, etc. The study of environmental effects of cadmium is now very timely. Cadmium ...as become the focus of intense research globally because of its toxicity to humans and terrestrial and aquatic ...rganisms. Exposure to cadmium causes anaemia, and hepatic, renal and cardiovascular diseases. Cadmium ...cumulated in endocrine glands exerting its effect on gametes quality and reproductive functions, and its role as

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

Impact of Mercury on Oxygen Consumption of Freshwater Bivalve, *Lamellidens marginalis*

Shaikh Yasmeen
Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad. (M.S.)
shaikhyasmeen7862@gmail.com

Abstract

The present study was carried out to investigate Mercury induced Oxygen Consumption in freshwater bivalve ***Lamellidens marginalis,*** a sentinel species in aquatic environment. The bivalves were exposed to acute dose of heavy metal, Mercury chloride. Oxygen Consumption rate for acute treatment was determined in groups Lc0 and Lc50 concentration for 96 hour. All results were compared with control groups of respective treatment. Our results showed that oxygen consumption rate was found to decrease with increased concentration of mercury and exposure period.

Keywords Oxygen consumption rate; Mercury chloride; *Lamellidens marginalis*; Acute toxicity.

Introduction

Heavy metals have devastating effects on ecological balance of the recent environment and a diversity of aquatic organisms (Farombi *et. al.* 2007). In order to evaluate the adverse effect of the pollutants on aquatic organisms, there is a worldwide trend to complement physical and chemical parameter with bio markers in aquatic pollution monitoring (Abdel, *et. al.* 2012).

In living animals respiration is most important process of life for derivation of energy in the form of ATP to perform various activities of body like movement, metabolic reaction, growth, development, muscular contraction, reproduction etc. oxygen consumption is a phenomenon which denotes the metabolic state of animals. In generals, the rate of oxygen consumption is greatly influenced by size, stages in life cycle of animals along with different environmental factors such as pH, temperature, salinity, light, oxygen tension, turbidity etc.[4-6] Therefore the activity of animals can be measured in term of oxygen uptake.

Aquatic molluscans are considered as a bioindicator of heavy metals pollution.[7,8] Among that bivalves are good candidates for ecotoxicological studies. As they are filter feeder macro content of toxicant can pass to their respiratory surface and entered into the body. Oxygen consumption rate of whole bivalve are altered by heavy metals. Such study implies bivalve health. Some researchers have studied effect of mercury chloride and cadmium chloride on oxygen uptake in crab.[9] Ganeshwade *et. al.*, (2012)[10] also observed the toxicity of pesticides on freshwater fish *Channa striatus*. Also Jadhav, (2011)[11] studied on respiratory physiology of bivalve *Lamellidens marginalis*. The connection between respiratory activity of animals and heavy metals has been revived by several workers.[12,13] The effects of heavy metals on aquatic animals (marine and freshwater) have been studied extensively by many workers.[14-16]

Considerable attention has been paid towards aquatic animals like fish, prawn, bivalve, crab as they respired though gills. Survey of literature showed that little information is known on the impact of heavy metals on respiratory mechanism in freshwater bivalves. So the present study is taken on

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-2019

'RESEARCH JOURNEY' International E- Research Journal
Impact Factor - (SJIF) - 6.261, (CIF) - 3.452(2015), (GIF)-0.676 (2013)
Special Issue 166 - Recent Advancement in Chemistry
UGC Approved Journal

E-ISSN : 2348-7143
March-2019

Effect of Heavy Metal Cdcl2 on Glycogen Activity of Bivalve Lamellidens marginalis in summer

Shaikh Yasmeen
Dr. Rafiq Zakaria College for Women, Navkhanda Palace,
Jubilee Park, Aurangabad. (M. S.)
E-mail: shaikhyasmeen7862@gmail.com

Abstract:

Heavy metal and pesticide pollutants cause stress to the aquatic organism and change its metabolic activity. The heavy metal pollutants give rise to alterations in the metabolic and physiological activity after short term exposures. To investigate the physiological changes after heavy metal treatment the most fundamental one would be the study of change in the glycogen contents in the different groups i.e., control, Lc0 and Lc50. The glycogen content in freshwater bivalve, L. marginalis was altered indicating the effects of heavy metals.

Keywords: Heavy metalCdcl2,L. marginalis, Glycogen, acutetoxicity

Introduction:

Most information about the effect of environmental pollutants on aquatic animals has been obtained from mortality studies. Often very little is known about damage to different internal organs or about disturbed physiological and biochemical processes within an organism following exposure to environmental poisons. Consequently knowledge about the mode of action of toxicants and causes of death in poisoned aquatic animals is often lacking. A better understanding of these mechanisms is necessary if we want to predict the potential harmfulness of various chemicals to the environment. Since different environment pollutants are likely to affect biological systems in different ways according to their respective chemical properties, the sum of physiological changes created by a particular pollutant is likely to be characteristic of that pollutant. Thus by observing the effects of pollutants on a set of physiological parameters, it might be possible to establish specific responses of that pollutant, and may take it possible to identify a pollutant on the basis of its physiological effect pattern. The higher concentrations of toxicants bring the adverse effects on aquatic organisms, at cellular level or molecular level and ultimately lead to disorder in biochemical composition which is useful in determining different toxicants and protective mechanism of the body to resist the toxic effects of the substances. The toxic chemicals (pollutants) act as one kind of stress to organism and organism responds to it by developing necessary potential to counter act that stress. The biochemical changes occurring act that stress. The biochemical changes occurring in the body give first indication of stress. During stress the organism needs sufficient energy which is supplied from reserve materials (glycogen, lipid and protein). If the stress is mild then only stored glycogen is used, as a source of energy, but if the stress is strong then the energy stored in lipid and protein may be used. The heavy metals cause metabolic dearrangement in the living system, when come in contact. Heavy metals due to their potential toxicity produce biochemical changes in the tissues of animals.

Even though there is much work on the toxic effects of pesticides and heavy metals on specific target animals, little attention was paid to study the physiological and biochemical changes on non target aquatic species. Since Lamellidens marginalis are fresh water bivalves an

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRIN...
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-2019

National Journal of Life Sciences, Vol. 16(1&2) 2019 : 67-70 ISSN : 0972-995X (Print), 2321-7960 (Online)

ACUTE TOXICITY STUDY OF CADMIUM CHLORIDE ON THE FRESHWATER BIVALVE, *LAMELLIDENS MARGINALIS*

Dr. Rafiq Zakaria College for Women Aurangabad

SHAIKH YASMEEN

Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.)

ABSTRACT : The active substance cadmium chloride is highly toxic and showed damage to a multitude of non target species. The bivalves have been used for many years to determine the pollution status of water. In the present study static bioassays were performed on bivalve, *Lamellidens marginalis* to evaluate the median lethal concentrations of cadmium chloride ($CdCl_2$) for 96 hrs. The LC_{50} values for 96 hrs were 3.5, 9.0 and 2.0 ppm, in summer, monsoon and winter respectively. The results showed that the LC_{50} values decreased with increase in exposure period.

Key words : *Toxicity, Kutluq lake, Cadmium chloride, Lamellidens marginalis, LC_{50} values.*

INTRODUCTION

Water is the most natural resource that exists on our planet and is essential for survival and the development of modern technology. Thus, rapid industrialization is one of the main causes for aquatic pollution. Discharged wastewater has been used in different regions of the world for fish raising (Wong *et al.*,2001; Ashraf,2005 and Gad,2009). The occurrence and concentrations of various contaminants have increased in the environment along with increasing anthropogenic activities in the industrial, agricultural and other sectors (Manoj and Padhy,2013). Water is a valuable resource and plays a vital role in supporting all forms of life (Rajiv *et al.*,2012). Water pollution is, therefore, of universal concern. Among the various contaminants, environmental concentrations of heavy metals have been increasing in aquatic environments in recent years. Cadmium and copper are highly toxic to aquatic animals (Jezierska & Witeska,2001 and Mendez-Armenta & Rios,2007). Pollution as a general Tenn is associated with unfavorable alterations in the ecology, resulting in deleterious effects on human health and resources. It is an insidious and growing process, which manifests itself only when the outflow of effluents exceeds the capacity of the receiving ecosystem of environment to recover. Pollution is the changing of a natural environment, either by natural or artificial means, so that the environment becomes harmful to the living things normally found in it. Most often than not, this refers to the input of toxic chemicals into the environment as a consequence of human activities.

The various causes of pollution are the explosive growth of population, increasing urbanization, rapid industrialization, and indiscriminate use of fertilizers, chemicals and pesticides, and lack of general awareness on environmental issues. Pollution results in human health hazards and destruction of aquatic food resources such as fishes, prawns, crabs, lobsters, molluscs and so on. The release of increasing quantities of heavy metals and their salts into the terrestrial and aquatic environment, and their accumulation in living and non-living systems endangers the life of all living organisms.

In recent years, concern has increased over the issues related to heavy metal pollution, as all heavy metals are potentially harmful to most organisms at some level of exposure. The nature of environment is of critical importance when considering homeostasis mechanism of an animal. Whereas terrestrial animals are generally exposed to metals through their diets, or through the air they breathe, aquatic organisms are exposed to dissolved and particulate metals in the ambient medium. The toxicological studies of pollutants are gaining more significance in recent time and worldwide attempts has been made to identify a "hazard" from toxic chemical present or released in aquatic environment. Polluted state of the water resources has led to steady decline in aquatic flora and fauna Freshwater mussels are in serious global decline and in urgent need of protection and conservation.

The declines have been attributed to a wide array of human activities resulting in pollution and water-quality degradation. The freshwater mussels are an ecologically important fauna because they are used as sensitive biomarkers of aquatic ecosystem pollution. Bivalves are stationary filter-feeding organisms able to bioaccumulate and concentrate most pollutants even if they are present fairly low concentrations (Niyogi *et al.*,2001). The acute effects are directly related to the ingestion of the toxic chemical. These effects occur rapidly as s result of short-term exposure of a few hours, days, or week to a chemical.

In the study of the effects of a toxic substance in a single species, we seek to understand how the toxic substance affects the physiological function of individuals and how this toxin affects the demography (birth and death rates) of the population. The effect of the toxic substance may also vary among populations of a species as well as among species. At the community level, we seek to understand how the presence of the toxin alters the relative and absolute abundances of the species present. For example, a disproportionate affect on predators might allow the increase of prey species. Some simple measures of toxicity use bioassays to measure death rates in order to quantify the effect of the toxin. Such measures are commonly known as LD_{50} and LC_{50}. The LD_{50} is defined as the lethal dose at which 50% of the population if killed in a given period of time, an LC_{50} is the lethal concentration required to kill

*Corresponding author (shaikhyasmeen7862@gmail.com)

Received 11.04.2019 Accepted 16.05.2019

Dr. Shaikh Yasmeen
Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad (M.S.) India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Juiblee Park

50% of the population. The LC_m is a measure, e g. in mg/l, of the concentration of the toxin whereas a dose is a more general term (need not be a concentration but may be a specific temperature, etc.). These bioassays involve subjecting several replicate groups of individuals to a range of concentrations (or doses) of a toxic compound and measuring the mortality after a defined time interval, e.g. 24 hours, 1 week, 1 month, etc. The data are then plotted and the LC_m is interpolated from the graph. Bioassays such as LC_m have been criticized on a number of grounds. Such bioassays are not representative for the species as a whole as they are most often performed on a small subset of one population and then extrapolated to the species as a whole. There can be a wide range of tolerance to toxic agents among different populations of a species which should be taken into account. An often ignored component in such studies is the evolution of resistance to the toxic substance. A sudden release of a pollutant at a concentration that is toxic to most organisms is likely to have an immediate and drastic effect on the density and species distribution within an ecosystem. A slow build-up of pollutants in an ecosystem will more likely allow for an increase in resistance over time; changes in taxonomic composition in this case should be less severe.

The toxicology not only protects human and the environment from the deleterious effects of toxicants, but also to facilitate the development of more selective toxicants with clinical drugs and pesticides. Toxicant is a quantitative concept, where substance become harmful at some higher doses but, at lower become less 422 effective to organisms. In between these limits there is a range of possible effects, from long-term chronic toxicity to immediate lethality. Contamination also, caused when an input from human activities causes an increase of a substance in fresh or seawater, sediments and organisms above the natural background level for that area and for those organisms (Clark,2001). Industrial development in the developing and undeveloped countries has resulted in heavy metal contaminatson of local water. Metal pollution may damage aquatic organisnts (either fresh or marine water) at the cellular levels and possibly affect ecological balance. Contamination is usually measured as parts per million (ppm=mg/l) or parts per billion (ppb=µg/l) and measured as "wet weight" (contamination in moist water containing-tissues) or as "dry weight" (contamination in dehydrated tissues) as water content can vary considerably, weight was found to be a better measure (Clark,2001). The present study has been planned to evaluate the impact of cadmium chloride on toxicity of the freshwater bivalve, *L. marginalis*.

MATERIAL AND METHODS

After collection of the animals they were immediately transported to the laboratory. After bringing to the laboratory the fouling biomass and mud on shell valves were removed withought disturbing the siphonal regions. The equal sized animals (90-100 mm in shell length) were grouped and kept in a sufficient quantity of water (each animal/litre in aquaria with aeration for 24 hrs to adjust animals in laboratory condition (with removal of water at interval of 12-13 hrs). No food was given during this time and during experiment. After 24 hrs animals of equal size (90-100 mm shell length) were grouped in 10 and exposed to different test concentration of mercury chloride for static bioassay test.

The stock solution of cadmium was prepared by dissolving appropriate quantity of cadmium chloride ($CdCl_2 2H_2O$ AR Grade CDH Bombay) in double distilled water. The pH of water is brought between 6.9-7.1 by adding 1N HCL (due to the insolubility of cadmium in reservoir water having 7.6-8.1). Appropriate test concentration were than prepared and animals were exposed, the experiment were conducted in natural day-night rhythm. The water of appropriate test concentration and control groups were renewed twice a day at appropriate interval of 12 to 13 hrs the mortality and behaviour of the animals were recorded before every renewal of water. Such experiments were performed for the log of concentrations and percentage survival of the bivalves. The percentage mortality in various concentrations set particular period were converted into probit values and plotted against the log of concentrations (Ghosh and Chatterjee,1985). The experiments were repeated three times for confirming observed LC0 and LC50 values. The 96 hrs acute tests were recorded in three different seasons *i.e.* summer (April/May), monsoon (July/August) and winter (December/January). The regression equation between log concentration in ppm (X) and probit mortality (Y) were delivered statically using formula $Y = \bar{y} + b(x-\bar{x})$ and 95% fiducial limits were also determined by (Finney,1971).

RESULTS AND DISCUSSION

The LC_m values were calculated for 96 hrs by Finney's method. The LC values obtained for cadmium chloride exposed for 96 hrs exposure were 3.5, 9.0 and 12.0 ppm in summer, monsoon and winter respectively. The results showed that LC values decreases with increasing periods of exposure of tributyltin chloride. The LC_m values, regression results, Chi square, variance and 95% fiducial limits, lethal concentration and safe concentration were calculated and are shown in Table 1. From the above results it appears that the freshwater bivalve, *Lamellidens marginalis* is highly sensitive to cadmium chloride.

Mortality rate : In summer at the end of 96 hr total mortality of 10% in1.5 ppm, 20% in 2.0 ppm, 30% IN 2.5 ppm 40% in

Table. 1 Seasonal variation in toxicity of cadmium chloride to *Lamellidens marginalis* by regression equation.

Seasons	Observed		Y= a+bx	Calculated LC_m	95% Fidecial Limit
	LC_0	LC_m			
Summer	1.0 ppm	3.5 ppm	Y=2.48205+3.6926 x	3.37	1.55-5.19
Monsoon	4.0 ppm	9.0 ppm	Y=1.8360+3.2899 x	9.16	4.23-14.09
Winter	7.0 ppm	12.0 ppm	Y=2.970+7.425 x	11.85	6.62-17.08

HISTOPATHOLOGICAL ALTERATIONS IN FEMALE GONAD OF FRESHWATER BIVALVE MOLLUSKS, *LAMELLIDENS MARGINALIS* DUE TO TOXICITY OF MERCURY

SHAIKH YASMEEN

Department of Zoology, Dr. Rafiq Zakaria College for Women, Navkhanda Palace, Aurangabad. M.S.
. Email: shaikhyasmeen7862@gmail.com

ABSTRACT

This study aimed to investigate the effect of mercury on the gonad in female fresh water bivalve *Lamellidens marginalis*. The experiment was carried out on the bivalves collected from Godavari River, [illegible] District Aurangabad, Maharashtra state. After collection of the animals they were immediately transported to the laboratory. After bringing to the laboratory the fouling biomass and mud on shell valves were removed withought disturbing the siphonal regions. The equal sized animals (90-100mm in shell length) were grouped and kept in a sufficient quantity of water (each animal / litre in aquaria with aeration for 24 hrs to adjust animals in laboratory condition (with removal of water at interval of 12 to 13 hrs). No food was given during this time and during experiment. After 24 hrs animals of equal size (90-100 mm shell length) were grouped in 10 and exposed to different test concentration of mercury for static bioassay test. Sections of 6 to 7 µ thickness were stained with Mallorys triple stain was used. Photomicrographs of the stained sections were taken using a Trinocular research microscope. The histolopathological findings include partial disruption of ovarian follicle vacuolation of germinal cells cytoplasm and damaged interfollicular connective tissue. The cytomorphological structure of ovarian follicles got deformed and elongated, losing their typical configuration. Necrosis and fibrosis in the connective tissue and damage to yolk vesicles of maturing sites were observed.

KEYWORDS: Mercury, female gonad, *Lamellidens marginalis*, histopathology.

INTRODUCTION

In order to understand a pattern of damage caused by particular chemical to the tissue it is essential to have an insight into the histological analysis of the tissues. Histopathology deal with the study of pathological changes of the microscopic structure of the body tissue. Any peculiar type of alteration of cells may indicate the presence of the disease or the effect of toxic substances. Every organism has capacity to tolerate suboptimal stress conditions. The maximum tolerance is at the extreme stress condition which exhibit physiologically defined limitations which are reflected predominantly in the structural architecture of various tissues of the animal. Traces of toxicants introduced in the body can be neutralized by immune system, but when high amount of toxicant enters, it affects the structure and fuoction of different organs in the body of animal. Structural and functional changes which occur in the tissues of animals due to different toxicants vary from organs to organs. Histopathology can be helpful for better understanding of the pathological condition or abnormalities and damages of tissues under toxic stress of pesticides. Thus histopathology is an extremely useful tool for assessing effects of toxicants at individual level. The use of various classes of insecticides as organophosphates, organochlorines, carbamates and pyrethroids have been increased many folds for the last 10 years (Wolansky, *et al.*, 2006). Their uncontrolled use may cause profound effects and a long term environmental impact on natural aquatic environments (Bellas, *et al.*, 2004). Pesticides may impair the functioning of organisms in aquatic environment even at low concentration. Histopathological abnormalities caused due to toxicity of pesticides have been reported earlier by many investigators (Muley and Mane, 1990; Jonalgadda and Rao, 1996; Waykar, 1998). Zhou, *et al.* (1993) studied the histological changes in the ovotestes of snail *Biomphalaria glabrata* on exposure to molluscicides. Jyothi and Narayan, (1996) studied the effect of organophospborous insecticide phorate on gonads of freshwater fish *clarius batrachus*. Kumari and Kumar, (1997) studied the histopathological alterations in ovary induced by aquatic pollutants in *Channa punctatus*. Hazarika and Das, (1998) investigated the histopathological changes induced in ovary of *Heteropneustes fossilis* exposed to BHC. Khan and Jha, (2000) studied gonad histopathology of the freshwater fish, *Channa punctatus* after exposure to phosalone.

Ramchandra Mohan, (2000) studied malathion induced changes in the ovary of freshwater fish, *Glossobius guaris*. Baruah and Das, (2002) studied histopathological changes in ovary of fish *Heteropneustes fossilis* exposed to paper mill effluent. Phirke, (2008) studied the effect of quinolphos and thiodan on gonads of freshwater bivalve, *Parreysia corrugata*. Ostoloju, *et al.*, (2009) studied the histopathlogy and bioaccumulation of heavy metals in ovotestes of giant land snail, *Archachatina marginata*. Kandasamy and Muthukumaravel, (2010) studied the toxic effect of chromium on the histoarchitectural alterations in ovary of freshwater fish, *Oreochromis mossambicus*.
Therefore, the present investigation was undertaken with a view to studying the histopathological changes in the female gonad of *Lamellidens marginalis*, under mercury toxicity.

Dr. Shaikh Yasmeen
Assistant Professor
Department of Zoology
Dr. Rafiq Zakaria College for Women
Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Research article Available online www.ijsrr.org ISSN: 2279–0543

International Journal of Scientific Research and Reviews

Correlation of Physical and Electrical Properties of Black Soil

Quadri F B[1*] Syed Ruhi N[2] Gulam Rabbani[3] Chishty S O[4]

[1*]Dept of Physics, Dr. Rafiq Zakaria College For Women, Aurangabad, 431001,(M.S.),India.
[2]Dept of C S, Maulana Azad College for Arts, Sci. and Comm., Aurangabad, 431001, (M.S.) India.
[3]Director, Dr. Rafiq Zakaria Center for Higher Learning and Research, Aurangabad, 431001, (M.S.)India.
[4]Head,Dept of Physics, Dr. Rafiq Zakaria College For Women, Aurangabad, 431001,(M.S.),India

ABSTRACT

Soil is a composite matter consisting of solids, liquid and some gases. Study of electrical parameters of it is of outmost importance as it enables one to understand the composition of it. Another importance of the study is to develop new and novel materials for the electronic industry. The study is also having much importance in exploring the new regions where its not possible to reach physically. Ten soil samples are collected from various agricultural lands and are dried and sieved. Dielectric parameters of these soil samples are studied at X-band microwave frequency of 9.8 GHz operating at TE_{10} mode at the room temperature. Further correlation with physical properties is found out. Infinite sample method is used in the following study.

KEYWORDS: Dielectric constant, dielectric loss, Waveguide transmission method, Infinite sample method, porosity, VSWR.

Correspondence author

Mrs. Quadri F B

Department of Physics,

Dr.Rafiq Zakaria College for Women,

Aurangabad- 431001(M. S.), INDIA.

Email id: firdose_q@rediffmail.com, Mob. No.- 9730960361

Dielectric Properties of Soil as a Function of Frequency Using LCR Meter

Quadri F B[1] Chishty S Q[2] Gulam Rabbani[3]
[1] Asst Professor, [2] Head & Asst Professor, [3]Director & Guide,
[1] Department of Physics, Dr. Rafiq Zakaria College For Women, Aurangabad. M.S. India.

Abstract: Dielectric parameters of soil are function of many factors like frequency, humidity, temperature, electrolytes and physical properties of it . The variation of these properties with frequency is a consequences of formation and alignment of induced dipoles at the molecular scale within the material. The internal phenomenon of polarization and its arrangement is dependent on the frequency of the external applied field. The dielectric properties of four different soil samples collected from various remote areas of Aurangabad division are determined using LCR meter. The soil samples are converted into pellets of known dimensions so as to affix them in the sample holder. The dielectric parameters are then expressed as a function of frequency at constant temperature.

Index Terms: **LCR meter, Heterogeneous materials, series capacitance, parallel capacitance dielectric constant, dielectric loss, AC conductivity, relaxation time, tangent loss, quality factor.**

I INTRODUCTION

Dielectric materials are the insulators that depicts a peculiar response in the presence of external, frequency dependent electrical field. These materials gets polarized as a effect of external field and an induced electric dipoles are formed. The number of dipoles formed is dependent on the strength of the applied field and temperature of the material. They get properly arranged in the direction of applied field and a net polarization is developed. The polarization is the combined effect of atomic polarization, electronic polarization, dipolar or rotational polarization, accumulation of charges, etc. Maxwell -Wagner effect is seen in heterogeneous materials [A D Vyas and G H Gadani 2008]. In the presence of external field, the centers of positive and negative charges get separated from the mean position in an atom giving rise to electronic polarizibility. Secondly, one nuclei gets displaced with respect to the other under the influence of external field resulting in atomic polarizibility. For a polar molecule having dipole moment, there is addition term of polarization called rotational or dipolar polarization. There are numerous dielectric mechanisms that contribute to the dielectric nature at microscopic level. At microwave frequencies, atomic and electronic polarization are very weak and are almost constant whereas dipole orientation and ionic conduction interact strongly at this frequency. There is a characteristic frequency called "cut off frequency" for each of these dielectric mechanism described. When the frequency of the applied electric field exceeds this value of frequency, the slow interacting dielectric mechanism drops out and only the strong interacting one contributes to the value of ϵ_r . The magnitude of the dielectric mechanism and the value of "cut off frequency" for each mechanism is unique for different materials [Totoreanu R and Malaescu I 2014]. The magnitude of dielectric loss ϵ peaks at each corresponding frequency. The magnitude of charge stored in the form of polarization is the dielectric constant, ϵ [Rosaih Osman et al 2017]. As the external field is removed the dipoles orient randomly back and some energy is lost in the alignment of the dipoles, this is called dielectric loss. Conductivity has a low but, finite frequency dependent value in dielectric materials. Relaxation time is the time taken by the dipoles to show the response and align themselves in the direction of the field. The amount of energy lost in one cycle is the tangent loss.

II METHODOLOGY

LCR meters are analogous to multimeters with multi functioning facility and it measures the electrical parameters at a wide range of frequencies ranging from 40Hz to 5MHz [Aligent Technologies]. Presently **IM 3570 HIOKI** LCR meter and impedance analyzer is used for the measurements of the dielectric parameters.

Soil with minimum moisture was collected from different locations of Marathwada region during the summer season. This soil was converted into fine powder and oven dried at 100° C for 4-5 hours to remove the moisture content of it .Using suitable binders, pellets were formed by a mechanical compressor machine. These pellets were sintered at a temperature of 200° C to evaporate the binder and the pellets were cooled down to the room temperature. The dimensions of the pellets were measured using screw gauge and were noted. The pellets were held between the sample holder and its parameters like parallel capacitance, series capacitance, quality factor, dissipation factor, etc were noted directly from the display of IM 3570 HIOKI for frequencies varying from 100Hz to 1 MHz.

Dr. S. Q. Chishty
HEAD
Department of Physics
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018 IJRAR November 2018, Volume 5, Issue 4 www.ijrar.org (E-ISSN 2348-1269, P- ISSN 2349-5138)

Complex Dielectric Analysis of Agricultural Soil From Marathwada Region at Microwave Frequency

Sayyed Rabia Sayyed[1], Pathan J.M[2], Gulam Rabbani[3], Shaikh Farooque[4]

[1] Assistant Professor, [2] Research Student, [3] Head, Department of Physics, [4] Principal

Department of Physics, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.), India

Dr. Rafiq Zakaria College for Women, Aurangabad

Abstract: Soil is a composite mixture of organic matter, liquid and gases that are present in different proportions and dielectric loss of the agricultural soil are calculated at 9.86GHz microwave frequency at 35°C and 60°C are collected from the agricultural land of Marathwada region. The soil is also analysed for its available chemical relationship between different chemical properties and dielectric constant and dielectric loss is reported. Infinite sample method is used for the measurement.

Index Terms: Complex dielectric permittivity, macronutrients, micronutrients, waveguide cell method and standing wave.

I INTRODUCTION

Interaction of electromagnetic waves with matter has always been a topic of study for the researchers. When electromagnetic waves are incident on the matter, a part of it is absorbed, a part is reflected and the remaining part is transmitted. The nature of the matter or material can be studied by knowing the either part of the electromagnetic wave or energy. Dielectric permittivity is the measure of response of the matter to the incident electromagnetic waves. It is the sum of the real part and the imaginary part. The real part is the measure of amount of electrical energy stored that is termed as dielectric constant (DC) and the imaginary part is the losses that has occurred in the material. It is called as dielectric loss (DL). This study is important in sensing of remote [1].

Soil is one of the vital components of the natural ecosystem and has been studied extensively. Different properties of soil are been explored (Kumar G Choudhary, 2013). Soil is a complex material that provides the nutrients required for the plant growth and supports vegetative growth on the surface of earth. The nature of soil depends on its formation process which is a dual phenomenon and is subjected to geographical location of the landscape. Wide variation in the properties of the soil have been noted from region to region. The different constituents of soil are like Nitrogen, Phosphorus, Potassium. These are the primary macronutrients of the soil. Calcium, sodium and magnesium are present in somewhat smaller quantities hence are called secondary macronutrients. Other elements like boron, iron, copper, manganese, zinc, etc. are the micronutrients that are present in the form of traces. These are called as micro nutrients. (Kumar M. and Bared A. 2011). In addition to these elements soil has organic carbon. For CaCO3 (Mass F.S. et al. 1990), pH of the soil plays a vital role in defining its fertility factor and affects other aspects of the soil. The acidity or alkaline nature of soil is managed by use of fertilizers.

II LITERATURE REVIEW

Dielectric properties of the soil have been studied at microwave frequency (Hoekstra P. and Delaney A. 1974). The effects of salt present, on dielectric properties of the rocks have been studied in depth (Anbalagan G. 2010). A database of effect of chemical and physical properties on the dielectric properties of rocks was established (Thomas J. Jackson T.J. and O'Neil P. 1987). Complex dielectric permittivity and other dielectric parameters of dry rocks were studied (Tabe T.T. et al. 1995). The effect of moisture in the soil in terms of its dielectric constant was noted (Wang J.R. 1980). A wide variation in the dielectric properties of soil with its physical properties is noticed for soils of arable mining areas of Mewat region, Rajasthan state of N. India (Rana P.C. and Joshi S. 2013). The dielectric properties of the soil of Sirsa region have shown dependence on its physico-chemical properties (Dodaye et al. 2016).

III OBJECTIVES

To determine the electrical properties of the soil at X band microwave frequency using waveguide cell method. Soil is also analysed for its available chemical composition like macro nutrients, micro nutrients, organic carbon, pH, electrical conductivity etc. Correlations if any, have been explored and regression equations and coefficients are determined to see the extent of dependence.

Dr. Sayyed R.J.
Asst. Prof.
Dept. of Physics
Dr. RZCW, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018 IJRAR November 2018, Volume 5, Issue 4 www.ijrar.org (E-ISSN 2348-1269, P-ISSN 2349-5138)

Impact of Fertilizers on Dielectric Parameters of Two Different Soils at Microwave Frequency

Qadria B.* Rubi S.Nodia* Ansari Mohd Jaleel* Gulam Rabbani* Mazhar Farooqui*

*Asst Professor **P.G. Research student ***Head and Director ****Professor

Department of Physics, Dr. Rafiq Zakaria College for Women, Aurangabad (M.S.) India

Abstract : Dielectric properties of material is the measure of its response to the applied external field. Depending on its structure and chemical composition, the dielectric properties of the material vary. In the present paper, a detailed study of dielectric properties of Sand and Black soil with fertilizers in different concentrations is formulated. Inorganic fertilizers triple super phosphate is added to the dried soil in varying concentration of 2 -20 %. Microwaves of frequency 9.8 GHz with dominant TE10 mode is used and Gain sample method is employed for calculating the dielectric properties. The findings of the work showed that, with the addition of fertilizers, the dielectric properties of the soil increases progressively for both kinds of soil.

Keywords : Polarization, dipoles, dielectric constant, dielectric loss, relaxation time, triple super phosphate .

I. INTRODUCTION

Insulators are classified as polar and non polar depending on the electrical structure of the molecular scale within. The molecules behave differently in the presence of external field. Depending on their dipole formation and its alignment, the substances are either polar or non polar [1, 2, 3, 4, 5]. Polar molecules in the material the dipoles are already formed and they have permanent dipole moments. In the absence of the external field, they are oriented randomly. So the net polarization is zero. For non-polar materials, the centers of positive and negative charges overlap so it has neither any dipole moment nor polarization.

In the presence of external electric field, both these materials show net polarization due to formation of induced dipoles and their proper alignment thereby a net electric field is developed within the material. The measure of the reaction of these dipoles to applied external field is the dielectric properties of the material. Dielectric properties of the materials are the dielectric constant, dielectric loss, ac conductivity, relaxation time, tangent loss, etc. Dielectric constant is the amount of energy stored per cycle of the applied electric field. Dielectric loss is the amount of energy lost in aligning the dipoles. Displacement of centers of positive and negative charges gives rise to ac conductivity. The time taken by the dipoles to align in the direction of applied field is the relaxation time. The ratio of energy stored to the energy lost per cycle is called the tangent loss (Trapp G.C. et al 1981).

II. SURVEY OF LITERATURE

Dielectric properties of soil varies as the structure of its constituent particle varies (Calla O.P.N. et al 1999). The moisture content of the soil is easily predicted by analyzing the dielectric constant of the soil (Chaudhari H. C. and Shinde V. R. 2011). The dielectric properties show a significant difference, with the impurities present in microbial Nodia S. and Chaudhari H.C. (2013) have found relations between the physicochemical properties and electrical properties of the soil. Nodia S. Chaudhari H. C. and Shinde D.V. (2014). Chemicals present in the soil can be correlated with the dielectric properties of the material (Nicola Yaccarino et al 2006). Organic and inorganic matter added to the soil brings a change in the dielectrical parameters of the soil (Never Khaki et al 2008).

Triple super phosphate(TSP) is a type of phosphatic fertilizer that contains the macronutrient phosphorus in absorbable form (Mina I. K 2006). It is having phosphate in 46% of P_2O_5. The molecular formula is $Ca(H_2PO_4)_2$. It is used in any time during the plant growth. Used particularly for acidic soils along with organic manure. It is suitable for all types of soils and crops. It is also known as calcium dihydrogen phosphate or mono calcium phosphate.

III. PROCEDURE

The soil samples are first analyzed for their physical and measurable chemical properties from the local agricultural office. These properties are given in table 1. The dielectric measurements are carried out with X-band microwave source and other accessories like attenuator, frequency meter, slotted line and sample holder with matched termination are all good quality. The microwave detector is a crystal detector that reads the power of the VSWR that is formed in the slotted line. The VSWR is measured by the microammeter connected in line with the detector. Both the soil samples are prepared in different concentrations of the fertilizer TSP varying from 2 to 20%. These soil samples with 1.5 cm height are filled in the sample holder and connected in line with the slotted line and matched termination. The

PRINCIPAL
Dr. Rafiq Zakaria College For Wo
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-2019

Land Degradation: A review Paper

Dr.Khan Uzma Khatoon

Assit.Professor

College Name:-Dr.Rafiq Zakaria College for Women Aurangabad



Abstract

This article **provides** a review **toward land** degradation **mistreatment** Remote Sensing and Geographical **system** (GIS). Land degradation **could be a method during which the worth** of the biophysical **atmosphere** is **littered with a mix** of human-induced processes acting upon the land. This remote sensing and GIS technique **is employed** on **varied** parameters on the bases of areas **like rough** region, hill slopes and **watercourse** banks. Land degradation is slow and continual deterioration **method principally iatrogenic** by human activities and equally catalysed by few natural parameters **additionally**. **Until** they grew in their full strength it couldn't be seen by naked eyes, its tropical identification takes **many** years **whereas** its consequences **typically** remain forever. **Rough** regions **are a lot of** prostrated **to the present** land degradation and **is** a caricature **to** witness its **world** consequence. **During this** review **several** papers **are** studied on analysis of **land** degradation. **Two** major case studies **are conferred** below **that** shows the techniques **accustomed** analyse this land degradation **method** by **mistreatment** remote sensing **and GIS.**

Introduction

Human Landscapes **are areas** of Earth's terrestrial surface **wherever** direct human alteration of ecological patterns and **vital** and **in progress** processes **that are** directed toward the services **that** are **wants** of human populations for food, shelter and **different** resources etc. Their development **is littered with** the over-use of natural landscapes **within the** past **like** overgrazing, frequent fires, or excessive depletion of forests. A literature review done **that** is highlight **however** GIS **will offer sensible** integration of geographic **spatial** structures (habitation, soils, and **watercourse** drainage) to past and current relationships between the **atmosphere** and human systems.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

"CRIME TENDENCY AMONG YOUTH IN INDIA"

Siddiqui BushraZareeen
(Research Student)

Dr.(Smt.) M.G. Dhopeshwarkar
(Research Guide)

Dr.Babasaheb Ambedkar-Marathwada University Aurangabad
Asst. Professor
Dept. of Computer Science & IT
Aurangabad 431001

Principal Dr. Rafiq Zakaria College for Women

Abstract

This paper deals with the study to find the causes and decline measures of crime trends among youth. Youth is a crucial stage in life, full of provocation and insecurities . It is a phase that acts as a arch between childhood and adulthood . Our country is affected with many socio-economic problems such like corruption, terrorism, illiteracy and poverty. There is an emergency to overcome these problems by youth is very important. Criminologist and Sociologists have been broadly concerned with locating the cause of crime and analysing the effectiveness of the criminal justice system. With the passage of time crime rates are increasing all over the world. Several factors are responsible for this increase which relates Economic, Social and Family situations and problems.. Separate corrective homes may be established for such criminal youths as are not considered a threat to society. New work programmes may be introduced in prisons for training youths to help them in economic rehabilitation. Reshaping of police sub culture, through police organisation, and the professionalization of the police force are necessary for winning confidence and cooperation of the young criminals.

Keywords— Crime, Criminal Behaviour, youth, stress.

Objective:-

1:- To contribute in maintaining unity and integrity of india.

2:- To promote education and organize vocational courses.

3:- To solve all the possible problems amongst the members of society.

4:- To raise fund to help poor and needy people relate.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

H.O.D.
Computer Science Department

Suicide Analysis Using Data Mining Techniques

Sukhjot Bushra Zareen, Research Student, Dept. of CS and IT, Dr Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra, India. E-mail: zareensukhjot83@yahoo.com

Mukta Dhopeshwarkar, Asst. Prof., Dept. of CS and IT, Dr Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra, India. E-mail: drmukhomark@gmail.com

Dr. Khan Uzma Khatoon, Asst. Prof., Dept. of CS, Dr. RZCW, Aurangabad, Maharashtra, India. E-mail: rzcw.uzma@gmail.com

Abstract--- Suicidal crime is an area of significant importance in the youth and now days suicide of youth has become problem of each empire around the globe. Many nations are trying to control this problem. Preventive measures are taken to decrease the increasing number of cases of suicide against youth. A huge amount of data set is generated every year due to reporting of suicide. The data can be used more in analyzing and predicting suicide and assist us to stop the suicide rate to some extent. Suicide data can help us examine suicide with different states and district, with causes & important for which cause the youth has committed suicide in that particular state. So data mining can be a special service to analyse, see and predict suicide using suicide data set. Classification and correlation of data set makes it easy to understand similarities & dissimilarities amongst the data objects. Data objects are grooped together using clustering technique here grouping is done according to various types of suicides against youth taking place in different states of India. Suicide mapping help the administration to plan strategies for prevention of suicide. Further using data mining technique data can be predicted and visualized in various form in order to provide better understanding of suicide patterns.

Keywords--- Suicide, Cluster, ESS, Dendrogram, Euclidean Distance

1. Introduction

India is a wide country with different people and having different thinking. Youth has been of great importance since ancient times in Indian culture. Unfortunately current scenario depicts a different story. According to survey, suicidal crime among youth has significantly increased in recent years. It has become the most prior to the administration to enforce law & order to reduce this increasing rate of the youth suicide. Durkheim has presented an elaborated analysis of suicide – a social fact and phenomenon in his book "Le Suicide". According to him suicide is not an individual act or a personal action. It is caused by some power which is over and above the individual or 'super individual' [1] According to Durkheim, suicide has the following three forms.

1. Egoistic Suicide:- when a man becomes socially isolated or feels that he has no place in the society he destroys himself.
2. Anomic Suicide:- This is the result of external and unaccepting circumstances which causes extreme frustration to a person.
3. Altruistic Suicide:- In this type of suicide man commits suicide with the object of doing good to others. Once we find our values or objectives are getting damaged which takes the form of Altruistic.
4. Suicide which is based on emotions. There are various causes which leads the youth to commit suicide.

As suicidal crime is increasing day by day, it is a great problem for our country. It has been seen that majority this crime is occurring due to psychological imbalance in the youth. If this issue is not handled on priority it can become dangerous. So the background analysis and future perception both are important in this area. So use of data mining techniques can produce important results from suicide dataset. Suicide analysis is exploring, inter relating and detecting relationships between various causes and characteristics of suicide. This data set contains huge amount of data with complex relationships which needs use of data mining techniques in order to be transformed into useful information. The knowledge extracted from the dataset can be a great tool & support to the police department to prevent suicide among youth.

An ideal suicide analysis tool is prepared to identify suicidal crime patterns quickly and in an efficient manner for crime pattern detection and perception. However, in the present scenario, the following major challenges are encountered.

ISSN: 1943-023X
Received: 30 October 2018/Accepted: 07 November 2018

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nawkhanda, Jubilee Park,
AURANGABAD. (M.S.)

H.O.D.
Computer Science Department

2018

اردو خطوط نگاری

از

ڈاکٹر سیدہ فرحت نسرین
لیکچرار ڈاکٹر رفیق زکریا کالج فار ویمن
نوکھنڈہ، جوبلی پارک،
اورنگ آباد

Dr. Rafiq Zakaria College for Women Library

خط لکھنا ایک فن ہے اور اس فن کا اپنا منفرد انداز ہے۔ دیگر فنون لطیفہ کی طرح اس فن کے بھی چند اصول مقرر کئے گئے ہیں۔ ناول، افسانہ، ڈرامہ یہ سب ادب کی نثری اصناف ہیں جس میں انسانی سیرت اور اس کے اعمال کی مکالمی بڑی خوبصورتی کے ساتھ کی جاتی ہے لیکن ان اصناف میں لکھنے والا تکلف، تصنع سے کام لیتا ہے اور ان اصناف میں یہ ضروری بھی نہیں سمجھا جاتا کہ لکھنے والے کے احساسات و جذبات صد فیصد سچے ہوں۔ ان اصناف میں طبع آزمائی کرتے وقت فنکار کو ہمیشہ سامعین و قارئین کا خیال رہتا ہے اور ساتھ ساتھ فن کا۔ یہ بھی خیال رکھتا ہے کہ قارئین و سامعین کی پسند شامل رہے جب کہ خطوط نگاری میں خط ایک فرد کی ذاتی تحریر ہوتی ہے جس میں لکھنے والے کی شخصیت ہر پہلو سے جلوہ گر ہوتی ہے ہم کو کسی بھی شخصیت کا اندازہ ہو تو اس کے خطوط کا مطالعہ ہماری بہترین رہنمائی کر سکتا ہے۔

خطوط عام طور پر پیام رسانی کا کام کرتے ہیں۔ دور دراز کے فاصلے سے جب ایک انسان خط کے ذریعے دوسرے انسان سے مخاطب ہوتا ہے تو اس کی روزمرہ کی چھوٹی چھوٹی باتیں درد مندی میں چھپ کر ایک خاص شکل اختیار کر لیتی ہے اور ایسے تمام خطوط اپنائیت اور سرگوشی کے حامل نظر آتے ہیں۔ اس فن کی ایک خاص بات ہے کہ خط چاہے ذاتی ہی کیوں نہ ہو مکتوب نگار اپنے مکاتب میں معاصرین کا اتنی بے تکلفی سے ذکر کرتا ہے کہ مکاتب ذاتی ہونے کے باوجود اپنے عہد کے سیاسی، سماجی، تاریخی اور تہذیبی حالات کے مظہر بن جاتے ہیں۔ اس سے ایک بڑا فائدہ یہ ہوتا ہے کہ خط کسی فرد واحد یا اس کے معاصرین کی سیرت نگاری لکھنے میں بڑے معاون و مددگار ثابت ہوتے ہیں۔ باوجود اس کے ایسے خطوط کے واقعات میں کوئی ربط و تسلسل نہیں پایا جاتا اور اس فن کی یہ کمی بھی اس فن کی خوبی بن جاتی ہے اور یہ بے ربط انداز میں سیاسی، سماجی، تہذیبی، جغرافیائی اشارے مل جاتے ہیں۔

دوسرے فنون لطیفہ کی طرح مکتوب نگاری بھی باقاعدہ ایک فن ہے۔ یہ دو اشخاص کے درمیان تحریری گفتگو ہوتی ہے اور ایسے مکاتب فرد کی ذاتی تسکین کی بھی مکافی کرتے ہیں۔

ایسے خطوط جو اپنے کسی چاہنے والے کو، دوستوں کو اور ہم عمر کے لوگوں کو لکھے جاتے ہیں وہ اپنائیت اختیار کر جاتے ہیں۔ جس میں ہم لکھنے والے کی پوری شخصیت کو خوبی دیکھ سکتے ہیں۔ اس فن کی آسانی نے اس کو لافانی ادبی حیثیت عطا کی۔ اور اس فن کو ذاتی فن بھی کہا جا سکتا ہے۔ خط کو دو انسانوں کے درمیان رابطے کی کڑی سمجھا جاتا ہے۔ دراصل خط اپنے خیالات کو دوسرے تک پہنچانے کا بہترین وسیلہ ہے۔ بابائے اردو مولوی عبدالحق بھی خط کو دلی جذبات کا روزنامچہ اور اسرار حیات کا صحیفہ بتاتے ہیں۔ خطوط میں موجود صداقت و خلوص رہتا ہے ویسا انداز دوسری اصناف میں کم کم ہی نظر آتا ہے۔ خطوں کے ذریعہ کسی انسانی شخصیت کا اندازہ لگانا بڑا آسان ہو جاتا ہے۔

خطوط نگاری کا فن ہی ہے جو فن کار کی سیرت کے ہر پہلو کو اجاگر کرتا ہے اور اس میں رنگا رنگی پیدا کرنا بھی فن کار کا ہی کام ہوتا ہے اور ایسے فن کار ہی ہیں جو اپنی کئی باتوں کو اس انداز سے خطوط میں پیش کرتے ہیں کہ ان کے خطوط غیر معمولی اہمیت حاصل کر لیتے ہیں۔ خطوط کی بے ساختگی ایک ایسی خوبصورت فضاء و ماحول پیدا کر لیتی ہے جس سے خطوط لازوال حیثیت حاصل کر لیتے ہیں۔

خط میں گفتگو کا آغاز صرف ایک جانب سے ہی ہوتا ہے۔ دوسری جانب سکوت پایا جاتا ہے جو بات ہم روبرو نہیں کر سکتے وہ

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
Volume: 05, Issue: 05, Sept. - Oct. 2018
Impact Factor (SJIF) - 5.266
eISSN NO. 2394-5362

2018-2019



قومی شاعر۔ برج نارائن چکبست

لے چلی بزم سے کس وقت مجھے مرگ شباب
لب تک آیا بھی نہیں ہاتھ میں پیمانہ ہے

ڈاکٹر سید فرحت نسرین
اسسٹنٹ پروفیسر شعبۂ اُردو
ڈاکٹر رفیق زکریا کالج فار ویمن، اورنگ آباد

اب چکبست ایک قومی شاعر کے روپ میں ہمارے سامنے آ ے ہیں وہ ہمارے درمیان نہ رہے ہوئے کافی عرصہ گزر چکا ہے اس کے باوجود ہم چکبست کی علمی خدمات کو فراموش نہیں کر سکتے۔ دنیا سے ان کا بے وقت کا گذر جانا تو جیسے کل ہی کی بات ہو۔

چکبست ۱۹ جنوری ۱۸۸۲ کو شہر فیض آباد میں پیدا ہوئے ان کے والد بھی شاعر تھے یقین تخلص کیا کرتے تھے۔ چکبست کا خاندان علمی اعتبار سے بلند مقام رکھتا تھا۔ روایت زمانہ کے مطابق ان کی ابتدائی تعلیم گھر ہی ہوئی۔ ایک مولوی صاحب ان کو اردو و فارسی پڑھانے آیا کرتے تھے۔ کشمیری برہمن خاندان کے چشم و چراغ تھے۔ فارسی ادب سے لگاؤ ورثہ میں ملا تھا۔ قدرت نے طبیعت بھی ایسی موزوں دی تھی پھر گھر کا ماحول بھی شعر و ادب کا تھا ایسے میں چکبست کم عمری میں سخن کرنے لگے۔ یہ وہ زمانہ تھا جب آتش اور ناسخ غزل کے لیے زمین ہموار کر چکے تھے۔ ایسے میں چکبست نے بھی اسی انداز میں اپنے دل کی بات کہی۔ لیکن زمانہ بدل رہا تھا۔ اس وقت کی شاعری میں ماتم دلبری میں کوئی کشش باقی نہیں تھی۔ دنیا کے مسائل اور غم اہم ہو گئے تھے۔ ایسے میں چکبست نے بھی وہی رنگ اپنایا۔ ان کی شاعری میں غم جاناں کے بجائے غم دوراں نظر آنے لگا۔ وہ ایک نئے جہاں کی تعمیر میں مصروف ہو گئے لیکن ان کی فطرت میں چھپا ہوا حب الوطنی کا جذبہ ابھی خاموش ہی تھا۔ چکبست نے خالص ہندوستانی قومیت کے شاعر کی حیثیت جو تاریخ رقم کی وہ شاید ہی کسی کے نصیب میں آئی۔

نواب جعفر علی خاں اثر کا دعویٰ صد فیصد درست ہے کہ

"صرف چکبست ہی وہ قومی شاعر ہے جس نے کل ہندوستان کے جذبات و
ضروریات کی بلا امتیاز تفریق مذہب ترجمانی کی ہے"

چکبست کا مطالعہ بہت وسیع تھا اردو فارسی کے علاوہ انگریزی و فلسفہ پر بھی عبور رکھتے تھے۔ ان کے خیالات و نظریات پر گوکھلے رانا ڈے اور تلک کا اثر نظر آتا تھا۔ وہ بڑے قوم پرست تھے۔ ان کی قوم پرستی کا دائرہ بے حد وسیع تھا۔ وہ ہندوستانی تہذیب کے بڑے قدرداں تھے۔ اور تہذیب و تمدن کے دھارے میں قدیم و جدید کے امتزاج سے ترقی پسند

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-19

VOLUME - VIII, ISSUE - 1 - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

13. Linguistic Imperialism: Myth or Re[illegible]

Dr. Nilofer Shaikh
Head, Dept. of English, Dr Rafiq Zakaria College for Women, Aur[illegible]

Imperialism means extending national power through colonization. Ling imperialism is associated with the domination of one language over other languages of the wo It is a term that assumes significance in the light of the colonization of various countries by the European countries especially British from 15th century onwards. The British infiltrated into alien lands and gradually introduced English language for their convenience in these countries. India, the whole of the East, America, Africa and many other countries came under the British sway. Undoubtedly the expansion of English empire brought along with it the culture and language into the subjugated countries. The fact remains that invaders in the past brought along with them their own cultural, religious and lingaistic traits, which local populace adopted or had to adopt so that it could have a better access to the resources available under the foreigner rulers. It is argued that European colonialism was different from the other colonialisms or invasions. As Tagore says that the foundation of the British empire was built upon greed and power. It was different for example from Mughal invasion in India where the Mughal came, ruled and settled down and made the new country their home merging wonderfully with its culture and the people, and the people gradually accepting the new rulers.

Colonialism was a systematic process that dug its roots deep into the new land through its military prowess, economy, culture and language. English education came to be introduced. And as language and culture go hand in hand, English culture and language predominantly became established in the Indian Territory. Through English literature, the English texts and its cultural beliefs travelled into India. India is home to many languages and is a land of many languages and cultures. Adopting one more language, be it English or any other for that matter, only added to its rich diversity. But languages stay even after the exit of the dominant ruling empires, and so is the case with English. But the question here is whether Language can be imposed by anyone. In the case of English language, undoubtedly the British introduced it, but even a cursory attention reveals that English has evolved into a language of convenience and necessity for its users in India. A country cannot rule by imposing its language upon the people of nation which it rules.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Juiblee Park,
AURANGABAD. (M.S.)

English language was one of the means of subjecting Indians to the superiority of Western ideologies. It was a necessity in British India, but not anymore. Yet English has found its way to becoming a global language. Any imposition comes with its own internal contradictions, and same goes with culture or language. In the first place it is not possible to impose a culture upon another alien culture. The world may be divided into nations but we are not water tight compartments where the changes sweeping one nation do not affect or influence another. Cultures, languages flow across nations and influence each other. In the process both cultures alter, mutate, transform and produce a new culture which is different from the original. In the present era of hybridized identities and easy movement of people across the globe there is nothing pure or original as such. In fact, what binds people is the language i.e English widely spoken by a large number of people. It is now the language of new information technologies. It is the language of business, politics and international exchange. According to estimates around 380 million people speak English as their first language and about 254 million as their second language. Billions of people are engaged in learning English. It is estimated that by the mid-21st century half the world will be more or less proficient in it. But at the same time there is resistance in the native countries by certain groups to stop the onslaught of English culture and language.

But if we look at the situation, it is unlikely that the native cultural differences will vanish and some sort of cultural sameness will be achieved. We may not have a situation where all local languages will vanish and English will rule. In fact, the native languages will influence English language and alter it. Neither is it possible to do away with English language in native countries. That one culture and one language will be superimposed is an impossibility. Languages change, whether English or other languages, under the impact of local culture and linguistic tastes. In a country like India, English is the language that binds people across its various regions. The Indian English as a language of its own kind has cosmopolitanised into a rich variety.

India as a vast land of many cultures, religions, race and ethnicities. Hence there are multiple languages spoken across the states and regions. This rich language diversity is one of the factors making communication difficult among people who belong to different states. In such situations, English acts as a link language making communication possible. English language travelled to India with the British people who colonized India nearly 200 years ago.

2018-2019.

Peer Reviewed Refereed and
UGC Listed Journal
(Journal No. 40776)

ISSN 2277 - 5730

AN INTERNATIONAL MULTIDISCIPLINARY
QUARTERLY RESEARCH JOURNAL

Dr. Rafiq Zakaria College for Women

AJANTA

Volume-VII, Issue-II
April - June - 2018
Part - I

IMPACT FACTOR / INDEXING
2017 - 5.2
www.sjifactor.com



Ajanta Prakashan

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-19

VOLUME - VII, ISSUE - II - APRIL - JUNE - 2018
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.2 (www.sjifactor.com)

20. Political and Psychological Conflict in Tughlaq

Dr. Nilofer Shakir
Asst Professor and Head, Dept of English, Dr. Rafiq Zakaria College for women, Aurangabad

The play Tughlaq by Girish Karnadgives an insight into the life of the medieval king, Mohammad Tughlaq.Karnad traces the political trajectory of Tughlaq's reign to bring out the contrast between the man who was a king and administrator and at the same time a mystic and philosopher. The play brings outthe personality of the great medieval king, who nurtured ideals that were difficult to put into practice. It traces the agony of a ruler who strongly desired the wellbeing of his subjects and worked tirelessly to achieve it but unfortunately his people did not trust him. They disliked him for his farfetched ideas. The play highlights the tragedy of Tughlaq who had a beautiful dream for his kingdom and his people but his political failure left him broken hearted and shattered.He is appalled by his close associates becoming his worst enemies and hence is left with no choice but to punish them harshly for their betrayals. The play is rife with intrigues, conflicts, conspiracies and court politics. A staunch Muslim, Tughlaq always strived to strengthen the HinduMuslim bond. In fact the decision to shift the capital from Delhi to Daulatabad was a step towards building the bond between the two communities. It also shows the king's secular outlook. Tughlaq announces it to his subjects in the play.

" ....I beg you to realise that this is no mad whim of a tyrant. ..Daulatabad is the city of the Hindus and as the capital it will symbolize the bond between Muslims and Hindus which I wish to develop and strengthen in my kingdom."(p-4)

Known for his learning, his mastery of Classics, Greek philosophy and Persian poetry,Tughlaqwas deeply pained by the fact that he could not win the trust of his subjects because they were never able to comprehend his loftyideals.The towering, headstrong king stands too tall among a pygmy subject race, who failed to understand his plans for administrative reforms. As a result they are often deceived and misled either by the agents of royalty, the Ulema or rendered helpless due to starvation and poverty.The Ulema or the clergy class charged him with murder of his father and brother to become the king, hence Tughlaq held the Ulema in contempt. And since the ulema exercised a strong hold on the people, they believed that the king was a murderer. This caused a feeling of suspicion and discontent among his subjects which is

Dr. Rafiq Zakaria College for Women
PRINCIPAL
Zakaria College For Women
Nanda, Jubilee Park,
RANGABAD. (M.S.)

made clear as the play opens in Delhi, where the crowd is discussingTughlaq's act of murder. They report the words of Sheikh Imamuddin, a clergyman who openly condemns Tughlaq's action and boldly speaks against him in public.

"And he said the Sultan's guilty of killing his father and brother, he said..... the audience went wild and burnt half of Kanpur." (P-5)

Najeeb's, the king's trusted servant, advisor and vizier has a good understanding of the political situation and the king's political acumen is clearly evident when they make a plan of eliminating Imam ud din who has become a threat to Tughlaq's reputation. She send him to negotiate peace with Ain ulmulk who is marching upon Tughlaq's territory. And according to the plan the Sheikh, who coincidentally resembles Tughlaq is coaxed into wearing the royal robes to go to Ain mulk as the king's emissary. He is killed in the attack.

History labels Tughlaq as the mad sultan, as a king with an unsound mind who took rash decisions and killed people mercilessly for small offences. But as Karnad dwells into his mind, one encounters a philosopher who spends sleepless nights worrying about his people, about building a strong empire and the political threats to his kingdom which frustrate his plans.

"I still remember the days when I read the Greeks- Sukrat who took poison so he could give the world the drink of gods, Aflatoon who condemned poets and wrote incomparably beautiful poetry himself- and I can still feel the thrill with which I found a new world, a world I had not found in the Arabs or even the Koran. They tore me into shreds. And to be whole now, I shall have to kill the part of me which sang to them. And my kingdom too is what I am- torn into pieces by visions whose validity I can't deny" (P-21)

We can sense Tughlaq'sintense urge to establish a state built on the principles and values laid down by the great Greek philosophers.And though he realized his weaknesses and the impossibility of pursuing his ideals, yet he continued with his rashness in taking political decisions and trying to execute his plans, fully knowing well their futility. He values religion above everything but at the same time he strongly opposes the Ulema's interference in political matters. He gets them hanged or imprisoned for doing so. While history asserts Tughlaq's madness, Karnad looks upon his acts of madness as that of a man who failed in making people believe the beauty of his dream, of his vision to establish a kingdom that would be heaven on earth. The pettiness of political conspiracies agitate him, further frustrating his plans but he is not shaken so much by the political conspiracies of his Amirs or ministers as by their lack of trust in

(13) 2019-19

DISILLUSIONMENT AND FRUSTRATION IN NGUGI WA THIONG'O'S *PETALS OF BLOOD*: A CRITICAL APPROACH

Dr. Khan Mahlaqa Afzal
Assistant Professor in English
Dr. Rafiq Zakaria College for Women
Navkhnada, Jubilee Park, Aurangabad

Librarian * Dr. Rafiq Zakaria College for Women

The present research paper deals with the theme of disillusionment and frustration in Ngugi Wa Thiong'o's *'Petals of Blood.'* Ngugi Wa Thiong'o is one of the prominent Kenyan writers. He is a political thinker and revolutionary who is deeply involved in the welfare of the country and his countrymen. He wrote several books, novels, essays, short-stories, and plays which deal with colonial restlessness urge for independence and struggle of Kenyan society. Some of his important works are *A Grain of Wheat, 'Home Coming, Petals of Blood* and *Decolonizing the Mind.* In 1977 he published *Petals of Blood* which is considered as one of the explosive novel after the publication. He was arrested and held without charges by the so called liberal Kenyan government.

Thiong'o consummates so many honours and awards for his literary works and his socio-political movements. Few prominent awards he received, includes The East African Novel Prize, UNESCO first Prize, The Lotus Prize for Artistic Excellence and Human Right. In 2003 Thiong'o was elected as an honorary member in the American Academy of Arts and Letters. At present Thiong'o is working as distinguish professor of English and comparative literature, he is also director of the international writing and translations in the school of humanity at the university of California.

Petals of Blood is one of the important novels of Thiong'o which is divided into four parts viz. "Walking" "Toward Bethlehem" "To Be Born" and "Again.. La Luta Continua!" It seems Thiong'o deliberately chooses the titles of the chapters to connect religious awakening with political awakening of the people. Interestingly novel revolve around four characters- a primary school teacher Munira, a liquor shop owner, a crippled Abdullah , Wanja brothel owner and hostile rebel and farm worker Karega. All four of them left city life and came to small village called Ilmorog. The novel opens with the murder of African leaders and educationist called Mzigo, Chui and Kemeria. This sensational and puzzling murder mystery opens up the bitter and sad truth and disillusionment of Kenya and Kenyans. *Petals of Blood* is an investigation of triple murder mystery; it also presents chaotic social political and educational conditions of Kenyan.

Petals of Blood reflects the internal journey of complex characters in sharper political, mental and cultural landscape with deeper and explosive themes of corruption, education, land and lust. It is an intense work of Thiong'o where he tries to portray the devastating picture of a "modern Third world

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

nation" whose frustrated people feels that "leaders have failed them time after time". The story is situated in the small village of Kenya called Ilmorog. Munira move to Ilmorog to teach primary school. His father Ezekieli was reputed member or Rawa-ini. *Petals of Blood* do boldly deals with the problems and clashes of old and new generation. The tall and dignify shadow to Ezekieli does haunt Munira again and again, it reminds him of his failure. He deliberately chooses Ilmorog to suppress fury and hatred within him for his father, being a failure son of reputed father always bothers him. Ilmorog is a poor village with very harsh weather. Farmers desperately waiting for rain are exploited by corrupt politicians. The selection of "local" by Thiong'o is symbolic since it portrays the history of Kenya and their heroic struggle against the domination of harsh nature barren land and corrupt leaders.

Petals of Blood reflects the internal journey of complex characters in sharper political, social cultural setting with deeper theme of failure of the controlling Kenyan elite. Thiong'o writes about the Kenya that nobody can writes like he represents the pain of old generation victimized by imperial powers and new generations hopelessness who is also victimized by frustration and corrupt leaders. According to the elder generation the destruction of Ilmorog is because of their younger one leaving the village tradition and culture,

> "You forgot that in those days the land was not for buying. It was for use. It was also plenty you need not had beaten one yard over and over again. The land was also earned with forest. The trees called rain."[1]

Thiong'o intentionally chooses barren, drought stricken part of Kenya where farmers are battling to protect their land of ancestor to survive, corrupt politicians and so called leaders of the country are pushing all their limits to acquire or snatch away the land for material purposes. Land for these natives is very important as it is the mean of salvation. Thiong'o also uses the background of Mau Mau rebel, one of the violent grass roots resistant launched by ethnic group of Kenya. This movement was led by peasant and landless farmers against British imperial rule. So many characters and their elders suffer in this rebellion.

The first part of the novel is called "Walking" which is significant in order to understand the suffering of villagers and their realization of the root cause of their problems. It is Karega the assistant of Munira who motivated villagers to go to Nairobi city to meet MP for help and basic demands. Munira being the pessimist hesitated to accompany them because of his memory of recent humiliation by leaders. He agrees to join them when he comes to know that Wanja will also accompany the delegation. His relationship with Wanja is complex one. She came back to village from city, her appearance and attitude always attracts villagers. But she carries lots of secrets and mystery within herself. Wanja has disturbed childhood, her marriage also failed miserably. She has a desperate urge

IMPACT FACTOR – 4.23

LangLit

ISSN 2349-0128

An International Peer-Reviewed Open Access Journal

Latur (MS) Ind

AIPROAJ

THE ACCIDENTAL TOURIST: A STUDY OF ISOLATION AND FAMILY

2018-19.

DR. KHAN MAHLAQA AFZAL,
Assistant Professor in English
Dr. Rafiq Zakaria College for Wom
Jubilee Park, Aura

Dr. Rafiq Zakaria College for Women

ABSTRACT

*The present research paper deals with Anne Tyler's novel, **The Accidental Tourist (1985)** as of isolation and family. Each character undergoes a transformation between isolation and belonging. This novel was a finalist for the Pulitzer Prize and won National Book Critics Circle Award for Fiction in 1985 and the Ambassador Book Award for Fiction in 1986. Anne Tyler humorously presents the diversity of relationships and its approaches to the characters. She is the author of over twenty novels, her eleventh, Breathing Lessons, was awarded the Pulitzer Prize in 1988.*

The present research paper deals with Anne Tyler's novel, ***The Accidental Tourist (1985)*** as of isolation and family. Each character undergoes a transformation between isolation and belonging. This novel was a finalist for the Pulitzer Prize and won National Book Critics Circle Award for Fiction in 1985 and the Ambassador Book Award for Fiction in 1986. Anne Tyler humorously presents the diversity of relationships and its approaches to the characters. She is the author of over twenty novels; her eleventh, Breathing Lessons, was awarded the Pulitzer Prize in 1988.

The Accidental Tourist is set in Baltimore, Maryland; the plot revolves around Macon Leary- a writer of travel guides whose son has been killed in a shooting at a fast-food restaurant. He and his wife Sarah, separately lost in grief, find their marriage crumbling until she eventually moves out. The novel opens with a pessimist approach of Sarah and Macon towards each other. After losing son both of them lost interest in each other and their married life. They cease to be affectionate and passionate for anything which is part of their life. Macon is a writer of tour guides who is least interested touring until and unless it is obligatory for him. The entire purpose of his guides is to make the traveller feel as if he had never left home. In his guide readers searched for pasteurized and homogenized milk." He is passive and belongs to eccentric family. After the death of their 12-year-old son, Ethan his wife Sarah left him alone with a pet dog. After three weeks he cannot imagine the fact that his wife left during this emotional traumatic period. Sarah finds Macon too predictable, methodical, and unemotional. Macon thinks Sarah is too spontaneous. He told his eccentric family that it is a "mutual separation". He was sad confused and lonely. His confusion and sadness increased day by day because of his nosy family members whom every now and then made him realized about his loneliness. They all blame Sarah and Sarah blamed him to not having interest in saving the relationship. The only solution he has found out in this distressing condition was writing about traveling 'As much as he hated the travel, he loved the writing'…[1]. It appears as if the whole universe is against him and his struggle shows that he is about to surrender until he meet Muriel Pritchett. Macon hires Muriel Pritchett, a quirky young woman with a sick son, to train his unruly dog. She is pushy and bossy too, she is the

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

16. Wild Seed: The Quest for Companionship and Freedom

Dr. Khan Mahlaqa
Asst. Prof. in English, Dr. Rafiq Zakaria College for Women, Aurangabad, (Maharashtra) India.

The present research paper studies Octavia Butler's **Wild Seed** in order to discuss the quest for companionship and freedom as one of the themes. American women writers have contributed immensely in developing popularity of American literature particularly Afro American women writers. African history is the history of pain, sorrow, and loss. The loss and struggle of black women are beautifully portrayed by writers like Toni Morrison, Gloria Naylor, Alice Walker and Maya Angelo for these writers and poets, black women who grieves from triple jeopardy are now converted into healers, story tellers and most important of all defenders of culture, weather it is simple yet soulful poems of Maya Angelo, accurate novels of Toni Morrison and Alice Walker or the excellent and unique science -fictions by Octavia E. Butler.

Octavia Butler an African-American writer contributes to the genre with her bold unique and attentive ideas. She is one of the renowned names in African American science fiction. Her work is highly appreciated by critics and readers for her excellent and exclusive representations of bold and original ideas. She began writing at the tender age of ten and at twelve she took interest in science fiction. She says, her writing is nothing but her "willingness to escape from loneliness and boredom." In 1974 while talking about novels of Patternist series in the journal "Black scholar" she stated that "I was watching a bad science fiction movie called Devil Girl from Mars and decided that I could write a better story than that, and I turned off the T.V and proceeded to try and I've been writing science fiction ever since".[1]

Wild Seed the earliest book in the chronology of the patternist series was published in 1980 apart from four novels in the same story line. She is also the author of **Parable of the Sower**, **Seed to Harvest**, **Kindred**, and many more short-stories and novels. **Wild Seed** deals with paranormal abilities and superhuman Doro and Anyanwu. Dore finds wild seed in Anyanwu who can give birth to powerful witches and seers. In the beginning of novel he manipulates Anyanwu by saying that she will live as his wife and mother of his children to protect and build a private race asking her to accompany him in America where he has his supporters, he ensure her

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Impact Factor – 6.261 | Special Issue - 148 | Feb. 2019 | ISSN – 2348-7143

Zalara College

INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S

RESEARCH JOURNEY

UGC Approved Journal

Multidisciplinary International E-research Journal

CREATIVE WRITING IN

ENGLISH, MARATHI, HINDI LITERATURE AND TRANSLATION STUDIES

- GUEST EDITOR -
Prin. (Dr.) S. R. Patil

- CHIEF EDITOR -
Dr. Dhanraj T. Dhangar

- EXECUTIVE EDITORS -
Mr. Hemantkumar D. Patil
Dr. V.S. Adhave | Dr. Vanita T. Pawar

Printed By : PRASHANT PUBLICATIONS, JALGAON

For Details Visit To : www.researchjourney.net

RINCIPAL
arla College For W
ngar, Jubilee Park,
AD. (M.S.)

2018-19

Impact Factor – 6.261 • Special Issue - 148 • Feb. 2019 • ISSN – 2348-7143

Dr. Rafiq Zakaria College for Women Aurangabad

INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S

RESEARCH JOURNEY

UGC Approved Journal

Multidisciplinary International E-research Journal

CREATIVE WRITING IN ENGLISH, MARATHI, HINDI LITERATURE AND TRANSLATION STUDIES

... Organized by ...

Aadishakti Dhandai Mata Shikshan Prasarak Sanstha's

LATE ANNASAHEB R. D. DEORE ARTS AND SCIENCE COLLEGE

Mhasadi, Tal. Sakri, Dist. Dhule - 424304 (M.S.) India

... Guest Editor ...

Prin. (Dr.) S. R. Patil

... Chief Editor ...

Dr. Dhanraj T. Dhangar

... Executive Editors ...

Mr. Hemantkumar D. Patil

Dr. V.S. Adhave | Dr. Vanita T. Pawar

Printed by : PRASHANT PUBLICATIONS, JALGAON

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ISSN - 2348-7143
February 2019
RESEARCH JOURNEY International Multidisciplinary Research Journal
Impact Factor (SJIF) - 6.261 | *Special Issue 148* : Creative Writing in English
Language, Literature and Translation Studies

"अधुरी जिन्दगी की पूरी कहानी जिन्दगी ५०-५०"

प्रा. डॉ. कुसुम राणा
सहयोगी प्राध्यापिका एवम्,
विभाग प्रमुख, हिंदी - विभाग,
डॉ. रफिक झकेरिया कॉलेज फॉर वुमेन,
नवखंडा, औरंगाबाद (महाराष्ट्र)

समकालीन उपन्यासों में मानवतावादी दृष्टिकोन को सामने रखकर, समाज के, हाशिए पर रहनेवाले किन्नर समाज को लेखक ने जन-जीवन के सामने लाने का प्रयास किया है। इस दृष्टि से भगवंत अनमोल का उपन्यास-"जिन्दगी ५०-५०" का विशेष महत्व है। यह उपन्यास किन्नर जीवन की परतों को खोलता है। एक किशोर और जवान होते किन्नर बालक की पीडा तथा अंतहीत संघर्षों का चित्रण इसमें किया है। जिसे पढते हुए हम दुःख के समंदर में कई बार डुबते उतरते है। इंजिनियरिंग की शिक्षा प्राप्त लेखक भगवंत अनमोल आज के सभी साहित्य प्रेमियों में विशेष लोकप्रिय है। समाज में हाशिए पर पडे एक वर्ग के प्रति हमारी संवेदना और जिम्मेदारी को जागृत करने की दृष्टिसे भी यह रचना महत्त्वपूर्ण है। यथार्थ जीवन की कथा को लेखक ने बडे ही संवेदनशील रुप में हमारे सामने रखा है।

इस उपन्यास में तीन कहानियाँ एक साथ दिखायी गयी है। तीनों कहानियाँ एक साथ चलती है। यह तीन कहानियाँ इसप्रकार है। एक- कथानायक अनमोल तथा उसकी पत्नी आशिका, उसकी माँ और किन्नर बेटे सूर्या की। दुसरी कहानी कथा के नायक तथा उसकी प्रेयसी अनाया और कार्यालय के मित्रों की। उपन्यास में मुख्य कथा के रुप में नायक अनमोल और उसकी सहकर्मी अनाया की प्रेम कहानी है। प्रेम की उदात भावना के कारण नायक अनाया के प्रति आकर्षित होते हुए उसे खुशी देने का प्रयास करता है। दोनों के बीच प्रेम फलने-फुलने लगता है। दोनों की प्रेम कहानी सहज और स्वाभाविक रुप से आगे बढ़ती है। और लेखक के प्रेम की शुरुवात युवा मन के प्रेम के प्रति जिज्ञासाजन्य उत्सुकता से होती है। लेखक और अनाया के प्रेम प्रसंग को इस उपन्यास में बहुत विस्तार से बताया गया है। अनाया के चेहरे के एक गाल पर के दाग को और उससे उत्पन्न उसकी निराशा और परेशानी का वर्णन इसमें हुआ है। आज की पीढ़ी के दर्द, उनके नए ढंग का फिल्मी प्यार आदि का चित्रण भी उसमें हुआ है। पहले जहाँ प्रेम करनेवालों को अच्छी नजरों से नहीं देखा जाता था। आज वही लोग मेट्रो सिटीज के आधुनिक कल्चरमें हिरो बन गये है। जैसे- "इस प्रयोजन का परिणाम यह हुआ कि मेरा सीना साहस और आत्मविश्वास से चौड़ा हो गया।"

तिसरी कहानी - लेखक के गाव गोपालपूर की है। एक अंग न होने के कारण उपेक्षित और तिरस्कृत लेखक के भाई हर्षा की तथा उसके बाबूजी की और समाज के एक वर्ग के प्रति होती जा रही हमारी उपेक्षा और संवेदनहीनता की। हर्षा नाम तो शायद बाबूजी ने बहुत अच्छा रखा था पर उसकी जिंदगी में लेशमात्र का भी हर्ष नहीं दे पाये। अभी एक वर्ष पहले ही तो उसका जन्म हुआ था। घर के आस पास के लोग उसे 'अलग' कहते थे 'अलग' ऐसा लोग कहते थे, पर मुझे नहीं पता उसमें क्या अलगपन था। नाक-कान, मुँह सब एक जैसे ही तो थे। बिलकुल हमारी तरह। प्रकृति कुछ बातें शरीर की संरचना के हिसाब से खुद ही सिखा देती है। उन्हें किसी दूसरे से सीखने नहीं जाना पडता। इसी का नतीजा हर्षा का श्रृंगार करना और साडी पहनना था। जिसके लिए बाबूजी हमेशा उसका तिरस्कार करते थे।

पिता-पिता में सोच, समझ और समय का अंतर कहते है कुछ ज्ञान हमें शिक्षा से मिलता है और कुछ ज्ञान जीवन के अनुभव दे जाते है। अनमोल और रामलखन दोनों ही किन्नर के पिता है। रामलखन तिवारी जहाँ अपने किन्नर बेटे हर्षा के लिए मन में तिरस्कार, खीज, नफरत की भावना रखते है, और एक कमजोर पिता साबित होते है। वहीं अनमोल तिवारी अपने किन्नर बेटे सूर्या को प्यार, उत्साह और आगे बढ़ने की प्रेरणा देता है। जो निर्णय एक भाई के रुप में वह न ले सका, वह निर्णय वो पिता बनकर एक सकारात्मक उर्जा के साथ लेता है।

हर्षा को जहर देने की घटना पर लेखक की प्रतिक्रिया कुछ इसप्रकार रही- "कट जाए ऐसे हाथ, जिसने अपने हर्षा के जबडे को पकड लिया था ताकि मुँह खुल जाए। रुक जावें ऐसी धडकनें जो अपने बच्चों को मारने के लिए तेज हो गयी थी। भाड़ में जाए ऐसा समाज जिसके कारण अपने बच्चे को मौत के घाट उतार रहा था वह बाप। हर्षा की माँ का अपने पति के प्रति यह कथन भी अपने आप में सार्थक है।" इसने गुनाह नहीं किया है, हम दोनों ने गुनाह किया है, इसे पैदा करके। तुम्हारे खराब वीर्य का दोष है, इसका कोई दोष नहीं। मारना है तो खुद को मारो। देखे कितने बडे वीर हो।

हर्षा की यह व्यथा हमारी संवेदना को झंझोडकर रख देती है किन्नर होना इतना बडा अभिशाप क्यों है? बस मेरा अधूरापन ही तो न? कैसे - कैसे पल आये। इस शरीर ने सब भुगता, सब सहा। जिस शरीर का लोग मजाक उडाते है उसे ही रात को अपने मन बहलाने का जरिया बना लेते है। अच्छा है इन लोगों से दूर अपना एक समुदाय है। मेरे शारिरिक अस्तित्व में दूहरापन है। लेकिन उस तथाकथित समाज के व्यक्तित्व के दूहरेपन पर मै थूकती हूं। बचपन में मेरे बाबूजी को ये लोग न सताते तो आज मै भी पढ़-लिख कर कुछ बन जाती। खीसे निपोरकर सडक पर भीख माँगती नजर नहीं आती। उस पर एक के बाद एक इस शरीर पर हुए अत्याचार। याद आता है तो खौफ से सिहर जाती हूं।

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

28

Comparative Development Experience: Modernization and Democracy

Dr. Tanmay A. Paithankar
Head and Assistant Professor Department of Political Science, Dr. Rafiq Zakaria College for Women, Jubilee Park, Navkhanda, Aurangabad.

Modernisation, has, started in England as result of industrial Revolution, and in France after the French revolution. Then, America similarly started modernizing herself in all fields. So the process was called westernisation. Later, the developing countries of Asia, Africa, and Latin America also began industrialize themselves and adopt modern technology, and adapt themselves in all social and economic fields to the changing needs of the time, the process is regarded as modernization.

Meaning Huntington describes "modernization as a multifaceted process involving change in all areas of human thought and activity" Claude E. Welch describes "The process based up on the rational utilization of resources and aimed at the establishment of a modern society" Benjamin Schwartz Describes "The systematic, sustained and powerful application of human energies to the rational control of man's physical and social environment for various human purposes". Rustow too identify a modern society with a "rapid widening control over nature through closer co-operation among men". A society was regarded as "more or less modernized" by Levy to the extent that its members use intimate source of power and or use of tools to multiply the effect of their efforts.

Modernisation is thus a process of change in all fields and indicates social transformation. It makes change in all fields, social, cultural, Psychological, economic and political but still it is essentially an economic concept. The process of modernisation also leads to Social Mobilization Which means an overwhelming change in a large population of those countries which are moving from their traditional way of life to the modern way of life. This paper analyses various concepts and issues in modernization and development.

Characteristics of Modernization

- Application of technology and mechanization; This means that the people give up old ways of living, old methods of agriculture and travelling.

Dr. Tanmay A. Paithankar
Assistant Professor
Dept. of Political Science
Dr. Rafiq Zakaria College for Women
Jubilee Park, Aurangabad. (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

VOLUME - VIII, ISSUE - I - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

8. Trends in Indian Foreign Policy : Oil Diplomacy

Dr. Tanmay A. Paithankar
Assistant Professor & Head, Dept. of Political Science, Dr. Rafiq Zakaria College for Women, Navkhanda, Jubilee Park, Aurangabad.

Globalization has led to enhanced cooperation in the economic fields between states. Under the era of globalization, following a policy of complete isolation and independence is undesirable.

Taking cue from this, India abandoned its Non- Aligned hangover and state-led economy that led to a grave fiscal situation which threatened to 'bankrupt the federal exchequer' towards the end of 1980s.

India then adopted 'a new economic policy' in 1991 which in effect abandoned socialism and accepted the goal of a 'capitalist economic system' characterised by privatisation, liberalisation and de-licensing. That ushered in a new phase of economic diplomacy in India which not only tried to maximize receiving economic aid from the donor countries but also wished to attract foreign direct investment from the developed countries of the West and Asia.

To secure oil and natural gas for the growing energy need of India was also an important aspect of that diplomacy. The outcome of that economic diplomacy has been India's joining in some multi-lateral economic fora such as the World Trade Organization in 1995, Organization for Economic Co-operation and Development (OECD) in 1996 etc.

India's Oil Diplomacy

India's economic diplomacy partly has been transformed into oil diplomacy. India's oil diplomacy can be divided into three phases (1) from independence to 1960s, (2) from 1960s to end of the Cold War & (3) since 1991 to present time. In the third phase, especially in 2000s India sought for alternative overseas sources of oil and gas. In the 21st century, oil issue has been key issue in India's foreign policy. Regarding overseas oil, India started high-level diplomacy.

India's Energy security question rose as a big question since 1991. Since 1990s, the suppliers of India's oil supply have been changed. To augment commercial purchases on the world market, India's, government and oil firm's sought to secure oilfields in abroad. These assets added 3 to 5 million tons annually to India's oil supply in the mid-and late 1990s.

Dr. Tanmay A. Paithankar
Assistant Professor
Dept. of Political Science
Dr. Rafiq Zakaria College for Women
Jubilee Park, Aurangabad - 431001.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

VOLUME - VII, ISSUE - IV - OCTOBER - DECEMBR - 2018
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

11. India's Energy Diplomacy

Dr. Tânmay A. Paithankar
Assistant Professor & Head, Dept. of Political Science, Dr. Rafiq Zakaria College for Women, Navkhanda, Jubilee Park, Aurangabad.

India in recent years has started to realize that energy will play a vital role in strengthening its ties with its neighbors. Without much propagation, it has begun to work on it, creating an extensive network of energy relationships with its neighboring countries, covering Myanmar in the east to the Gulf in the west. India plans on accomplishing its goal by influencing its neighbor's decisions by being a huge catch as a large consumption center and also a major source of petro-products and expertise.

Mauritius

One of India's closest allies, Mauritius, has always had immense potential to become a robust nucleus for petroleum storage and bunkering and India has been allowed to try its hands on it already. It has started delivering petroleum products to Mauritius from its Mangalore refineries. These storage facilities established in Mauritius can be used by India to market petroleum products to all over Africa.

Indonesia

April proved to be a bearer of good news for India when it was able to initiate a conversation regarding energy with one of the most significant sources of hydrocarbons in the world, Indonesia. India's newest venture, a floating storage and regasification units (FSRU), in Indonesia, will enable the country to provide energy to many of its islands without any inconvenience. Indonesia will return the favor by giving LNG kits for Indian vehicles. The two countries have also agreed upon cooperating about issues like up-gradation of Indonesian refineries, relocation of Indian gas-based plants to Indonesia, exchange of experience in case of usage of LEDs and renewable energy in India, exploration of oil, gas and coal fields, etc.

Myanmar

Although rich in its energy resources, Myanmar has to supply 80% of its gas to China as it is bound to do so according to their pipeline deal. Upon completion of the Kaladan multi-

Dr. Tanmay A. Paithankar
Assistant Professor
Dept. of Political Science
Dr. Rafiq Zakaria College for Women
Jubilee Park, Aurangabad - 431001.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD

2018-19

"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
Volume: 05, Issue: 05, Sept. - Oct. 2018 eISSN NO. 2394-5362
Impact Factor (SJIF) - 5.266

MALIK AMBAR : ARCHITECT OF AURANGABAD CITY

Dr. Rafiq Zakaria College for Women

Dr. Abdullah Basit Chaoush
Assistant Professor & Head,
Department of History
Dr. Rafiq Zakaria College for Women
Aurangabad (Maharashtra) India

Malik Mean king and Ambar means Black flowers fragrance. Very little is known about the early life and career of Malik Ambar. He himself was not an autobiography, like his contemporary, Emperor Jahangir, who could have written about his ancestor or early life etc. But the scattered material in official and non-official histories of the period and the stray references in the diaries of the foreign travellers, does enable us to from a coherent picture of his childhood, youth and old age. Ambar Chapu, Ambar Jiu (Life or Heart) Malik Ambar as he was commonly known in the Deccan, he was born at HARAR in ETHOPIA, in obscure Abyssinian (Africa) family in the year 1549 A.D. Like Qutubuddin Aibak, Iltumish and Balban, who played heroic role on the political stage Northern India, Malik Ambar was brought up by his poor parents and sold to Qazi-ul-Quzat of Mecca in the famous slave market of Baghdad and then to Khawaja Mir Baghdadi, commonly known as Mir Qasim, one of the famous merchants of that town. The Khwaja treated him like his own son with utmost generosity and kindness. Here M.A. was again sold to Mirak Dabir, styled as Changez Khan one of the famous and

Dr. ABDULLAH CHAOUSH
HEAD
Department of History
Dr. Rafiq Zakaria College For Women
Khanda Palace, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-2019
125

VOLUME - VII, ISSUE - IV - OCTOBER - DECEMBER - 2018
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

Dr. Rafiq Zakaria College for Women Aurangabad

27. The Demographic Dividend : An opportunity for Growth

Dr. Syeda Rukhsana Tabassum
Associate Professor & Head Dept. of Economics, Dr. Rafiq Zakaria College for Women, CAurangabad (Maharashtra)

Today we are debating about India's emergence as a Global Economic Superpower. Yes, India is going to be one in future. This optimism is substantiated by India's young population and the development in India's entrepreneurship. Today India and Indians have come long way from 'rejection' to open arms every where in the world by the heads of developed countries as well as by the global business community.

Indian demographic dimensions have changed in such a way that today we talk about demographic dividend and not about 'population explosion'.

India's population has been an issue of debate at the national and international level, because of its peculiar demographic structure i.e. constituting 2.4% of world and are home to 17.5% of world population. The growth obstacle in its economic development and the blame for slow economic progress has been upon the huge population. To quote Nandan Nilekani "The demographic experts of nineteenth and twentieth centuries, India's population made the country quite, simply a disaster of epic proportions." There was panic and worry about the disastrous effects of India's rapidly growing population both at the national and international level. There was so much pessimism that policy recommending sterilization of the unfit, disabled and killing of defective babies gained the air of respectable theory'. Such pessimism led our planners and leaders to adopt an approach of coercive family planning. By the 1970s family planning programmes and targets for sterilization of citizens were setup throughout the country. In 1975, Indira Gandhi govt. declared emergency which suspended democratic rights. During emergency the govt. of India implemented the family planning programme with coercion on a large scale. But the growth rate of population doesn't indicate any decline in birth rate because of such coercive family planning by the government. In 1970s there was such a hue and cry about India's population that economists like William and Paul Paddock predicted, doomsday for India as

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

P·P
2019-2019

VOLUME - VIII, ISSUE - 1 - JANUARY - MARCH - 2019
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.5 (www.sjifactor.com)

Dr. Rafiq Zakaria College for Women, Aurangabad

29. Growth of Agricultural Sector in Maharashtra – Performance & Issues

Dr. Syeda Rukhsana Tabassum
Associate Professor (Economics), Dr. Rafique Zakaria College for Women, Aurangabad, (M.S.) India

Introduction

Maharashtra, as compared to the other states of India, is one of the top economic performers with respect to per capita income. While the all-India per capita income was Rs. 10,254 (2000-01) at 1993-94 prices, the corresponding figure for Maharashtra was Rs. 15,172, i.e., about 1.5 times that of all-India. In 1999-00, Punjab had the highest per capita income which was slightly higher (2 per cent) than that of Maharashtra.

Agricultural is a key sector in the state. Hence an attempt has been made to study the progress of the agricultural sector in Maharashtra, the constraints that jeopardise its growth and the strategies to accelerate its growth.

The agriculture & allied activities contribute 12.9 per cent to the state's income. The state has 226.1 lakh hectares of land under cultivation and area under forest is 52% lakh hectares. Agriculture plays a major role with respect to employment as 53.3 per cent of the workforce is engaged in this sector. This figure rapidly rises to 69% when we exclude Mumbai, the commercial capital of India, indicating that in almost all the districts of Maharashtra agriculture is the main source of livelihood.

Sectoral Contribution to SDP

The shares of the different sectors in SDP/NDP are undergoing major changes over the years (Table 1) and the contribution of the primary sector (agriculture and allied services) continued to decline over the decades at the all-India level as well as in Maharashtra. Taking into consideration the three decades (Table 1), the contribution of this sector was highest for all-India in 1980-81, but declined to 26 per cent in 2000-01. In Maharashtra, the contribution of the primary sector to SDP was much lower and declined to 14 per cent in 2000-01, while that of the tertiary sector rapidly increased to 52 per cent. At the all-India level also, the tertiary sector

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2018-19

http:// www.klibjlis.com

eISSN No. 2394-2479

SCIENTOMETRIC ANALYSIS COMPUTER MEDIATED ONLINE JOURNAL

Dr. Siddiqui Eraj Azeeza * **Kharat Pooja Prakash****

Dr. Rafiq Zakaria College for Woman Aurangabad

*** Librarian**
Dr. Rafiq Zakeria College of Woman
Aurangabad, Maharashtra, India

*** Research Scholar**
DLIS,
Dr. Babasaheb Ambedkar Marathwada University,
Aurangabad, Maharashtra, India

QR Code

Abstract: - *The present study attempts on the Scientometric analysis of Journal Computer Mediated Communication. It is based on the references appended to International Journal of "Computer Mediated Communication" during 2004-2008. The present study is based on 5 volumes, 20 issues of the Journal of computer Mediated Communication. It was found that journals citations are more in number than the other citations.*

Keywords: Scientometric, Computer Mediated Communication, Authorship pattern

INTRODUCTION:-

Scientometrics is the science of measuring and analyzing science. In practice, scientometrics is often done using bibliometrics which is a measurement of the impact of (scientific) publications. Scientometrics is the study of measuring and analyzing science, technology and innovation. Major research issues include the measurement of impact, reference sets of articlesto investigate the impact of journals and institutes, understanding of scientific citations, mapping scientific fields and the production of indicators for use in policy and management contexts. In practice there is a significant overlap between scientometric and other scientific fields such as bibliometric, information systems, information science and science of science policy.

PRINCIPAL
Dr. Rafiq Zakaria College For Woman
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

528

2018-19

http:// www.klibjlis.com

eISSN No. 2394-2479

HISTORY OF LIBRARY SCIENCE EDUCATION

Dr Siddiqui Eraj Azeeza*

* Librarian
Dr. Rafiq Zakaria College for Women
Aurangabad
Maharashtra, India.

Dr. Rafiq Zakaria College for Women Aurangabad

QR Code

History of Library Science Education in India

Baroda School:

Library Education began in India in the second decade of 20th century with the starting of a library school in the Baroda State in 1911. Baroda State not only provided instance of library movement in the country but it was here that dawn of library education appeared. Raja Sayaji Rao Gaikwad was interested in the educational progress of his state. He was impressed with the splendid work done by public libraries in the West with a view to developing a library system in his state, he requisitioned the services of an American Librarian, Mr. William Borden as the Director of the State Library Department.

1911 began with a series of library classes, which would fit Library staff for the routine tasks of librarianship. Borden had been a student of Melvil Dewey, and the system of library training, which he introduced into India, had many of the hallmarks of the Columbia library school. It was established in a university and it has emphasis on fundamental library skills: Library handwriting, book repair, charging systems and the dispatch of over dues, was covered in these early classes.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

517

Impact Factor – 6.261 | Special Issue - 148 | Feb. 2019 | ISSN – 2348-7143

INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S

RESEARCH JOURNEY

UGC Approved Journal

Multidisciplinary International E-research Journal

CREATIVE WRITING IN

ENGLISH, MARATHI, HINDI LITERATURE AND TRANSLATION STUDIES

- GUEST EDITOR -
Prin. (Dr.) S. R. Patil

- CHIEF EDITOR -
Dr. Dhanraj T. Dhangar

- EXECUTIVE EDITORS -
Mr. Hemantkumar D. Patil
Dr. V.S. Adhave | Dr. Vanita T. Pawar

Printed By : PRASHANT PUBLICATIONS, JALGAON

For Details Visit To : www.researchjourney.net

2018-19

PRINCIPAL
Dr. Rafiq Zakaria College For W
Jawaharnagar, Jubilee Park,
AURANGABAD. (M.S.)

Impact Factor – 6.261 • Special Issue - 148 • Feb. 2019 • ISSN – 2348-7143

INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S
RESEARCH JOURNEY
UGC Approved Journal
Multidisciplinary International E-research Journal

Dr. Rafiq Zakaria College for Women Aurangabad

CREATIVE WRITING IN ENGLISH, MARATHI, HINDI LITERATURE AND TRANSLATION STUDIES

... Organized by ...

Aadishakti Dhandai Mata Shikshan Prasarak Sanstha's

LATE ANNASAHEB R. D. DEORE ARTS AND SCIENCE COLLEGE

Mhasadi, Tal. Sakri, Dist. Dhule - 424304 (M.S.) India

... Guest Editor ...
Prin. (Dr.) S. R. Patil

... Chief Editor ...
Dr. Dhanraj T. Dhangar

... Executive Editors ...
Mr. Hemantkumar D. Patil
Dr. V.S. Adhave | Dr. Vanita T. Pawar

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Printed by PRASHANT PUBLICATIONS, JALGAON

Dr. KUSUM KANTA
HEAD
Dept. of Hindi
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad.

ISSN : 2348-7143
February 2019
RESEARCH JOURNEY International Multidisciplinary Research Journal
Impact Factor (SJIF) - 6.261 | Special Issue 148 : Creative Writing in English with Literature and Translation Studies

"अधुरी जिन्दगी की पूरी कहानी जिन्दगी ५०-५०"

प्रा. डॉ. कुसुम राणा
सहयोगी प्राध्यापिका एवम्,
विभाग प्रमुख, हिंदी - विभाग,
डॉ. रफिक झकेरिया कॉलेज फॉर वुमेन,
नवखंडा, औरंगाबाद (महाराष्ट्र)

समकालीन उपन्यासों में मानवतावादी दृष्टिकोन को सामने रखकर, समाज के, हाशिए पर रहनेवाले किन्नर समाज को लेखक ने जन-जीवन के सामने लाने का प्रयास किया है। इस दृष्टि से भगवंत अनमोल का उपन्यास-"जिन्दगी ५०-५०" का विशेष महत्त्व है। यह उपन्यास किन्नर जीवन की परतों को खोलता है। एक किशोर और जवान होते किन्नर बालक की पीडा तथा अंतहीत संघर्षों का चित्रण इसमें किया है। जिसे पढ़ते हुए हम दुःख के समंदर में कई बार डुबते उतरते है। इंजिनियरिंग की शिक्षा प्राप्त लेखक भगवंत अनमोल आज के सभी साहित्य प्रेमियों में विशेष लोकप्रिय है। समाज में हाशिए पर पडे एक वर्ग के प्रति हमारी संवेदना और जिम्मेदारी को जागृत करने की दृष्टिसे भी यह रचना महत्त्वपूर्ण है। यथार्थ जीवन की कथा को लेखक ने बडे ही संवेदनशील रुप में हमारे सामने रखा है।

इस उपन्यास में तीन कहानियाँ एक साथ दिखायी गयी है। तीनों कहानियाँ एक साथ चलती है। यह तीन कहानियाँ इसप्रकार है। एक- कथानायक अनमोल तथा उसकी पत्नी आशिका, उसकी माँ और किन्नर बेटे सूर्या की। दुसरी कहानी कथा के नायक तथा उसकी प्रेयसी अनाया और कार्यालय के मित्रों की। उपन्यास में मुख्य कथा के रुप में नायक अनमोल और उसकी सहकर्मी अनाया की प्रेम कहानी है। प्रेम की उदात्त भावना के कारण नायक अनाया के प्रति आकर्षित होते हुए उसे खुशी देने का प्रयास करता है। दोनों के बीच प्रेम फलने-फुलने लगता है। दोनों की प्रेम कहानी सहज और स्वाभाविक रुप से आगे बढ़ती है। और लेखक के प्रेम की शुरुवात युवा मन के प्रेम के प्रति जिज्ञासाजन्य उत्सुकता से होती है। लेखक और अनाया के प्रेम प्रसंग को इस उपन्यास में बहुत विस्तार से बताया गया है। अनाया के चेहरे के एक गाल पर के दाग को और उससे उत्पन्न उसकी निराशा और परेशानी का वर्णन इसमें हुआ है। आज की पीढ़ी के दर्द, उनके नए ढंग का फिल्मी प्यार आदि का चित्रण भी उसमें हुआ है। पहले जहाँ प्रेम करनेवालों को अच्छी नजरों से नहीं देखा जाता था। आज वहीं लोग मेट्रो सिटीज के आधुनिक कल्चरमें हिरो बन गये है। जैसे- "इस प्रयोजन का परिणाम यह हुआ कि मेरा सीना साहस और आत्मविश्वास से चौड़ा हो गया।"

तिसरी कहानी - लेखक के गाव गोपालपूर की है। एक अंग न होने के कारण उपेक्षित और तिरस्कृत लेखक के भाई हर्षा की तथा उसके बाबूजी की और समाज के एक वर्ग के प्रति होती जा रही हमारी उपेक्षा और संवेदनहीनता की। हर्षा नाम तो शायद बाबूजी ने बहुत अच्छा रखा था पर उसकी जिंदगी में लेशमात्र का भी हर्ष नहीं दे पाये। अभी एक वर्ष पहले ही तो उसका जन्म हुआ था। घर के आस पास के लोग उसे 'अलग' कहते थे 'अलग' ऐसा लोग कहते थे, पर मुझे नहीं पता उसमें क्या अलगपन था। नाक-कान, मुँह सब एक जैसे ही तो थे। बिलकुल हमारी तरह। प्रकृति कुछ बातें शरीर की संरचना के हिसाब से खुद ही सिखा देती है। उन्हें किसी दूसरे से सीखने नहीं जाना पड़ता। इसी का नतीजा हर्षा का शृंगार करना और साडी पहनना था। जिसके लिए बाबूजी हमेशा उसका तिरस्कार करते थे।

पिता-पिता में सोच, समझ और समय का अंतर कहते है कुछ ज्ञान हमें शिक्षा से मिलता है और कुछ ज्ञान जीवन के अनुभव दे जाते है। अनमोल और रामलखन दोनों ही किन्नर के पिता है। रामलखन तिवारी जहाँ अपने किन्नर बेटे हर्षा के लिए मन में तिरस्कार, खीज, नफरत की भावना रखते है, और एक कमजोर पिता साबित होते है। वहीं अनमोल तिवारी अपने किन्नर बेटे सूर्या को प्यार, उत्साह और आगे बढ़ने की प्रेरणा देता है। जो निर्णय एक भाई के रुप में वह न ले सका, वह निर्णय वो पिता बनकर एक सकारात्मक उर्जा के साथ लेता है।

हर्षा को जहर देने की घटना पर लेखक की प्रतिक्रिया कुछ इसप्रकार रही- "कट जाए ऐसे हाथ, जिसने अपने हर्षा के जबड़े को पकड लिया था ताकि मुँह खुल जाए। रुक जावें ऐसी धडकनें जो अपने बच्चों को मारने के लिए तेज हो गयी थी। भाड़ में जाए ऐसा समाज जिसके कारण अपने बच्चे को मौत के घाट उतार रहा था वह बाप। हर्षा की माँ का अपने पति के प्रति यह कथन भी अपने आप में सार्थक है।" इसने गुनाह नहीं किया है, हम दोनों ने गुनाह किया है, इसे पैदा करके। तुम्हारे खराब वीर्य का दोष है, इसका कोई दोष नहीं। मारना है तो खुद को मारो। देखे कितने बडे वीर हो।

हर्षा की यह व्यथा हमारी संवेदना को झंझोडकर रख देती है किन्नर होना इतना बड़ा अभिशाप क्यो है? बस मेरा अधूरापन ही तो न? कैसे - कैसे पल आये। इस शरीर ने सब भुगता, सब सहा। जिस शरीर का लोग मजाक उड़ाते है उसे ही रात को अपने मन बहलाने का जरिया बना लेते है। अच्छा है इन लोगो से दूर अपना एक समुदाय है। मेरे शारिरीक अस्तित्व में दूहरापन है। लेकिन उस तथाकथित समाज के व्यक्तित्व के दूहरेपन पर मै थूकती हूँ। बचपन में मेरे बाबूजी को ये लोग न सताते तो आज मै भी पढ़-लिख कर कुछ बन जाती। खींसे निपोरकर सडक पर भीख मांगती नजर नहीं आती। उस पर एक के बाद एक इस शरीर पर हुए अत्याचार। याद आता है तो खौफ से सिहर जाती हूँ।

Dr. KUSUM RANA
HEAD
Dept. of Hindi
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

10 - (Botany). 2018 - 19

Impact Factor – 6.261 | Special Issue - 120 | Feb. 2019 | ISSN – 2348-7143

Dr. Rafiq Zakaria College for Women

INTERNATIONAL RESEARCH JOURNALS

RESEARCH JOURNAL

UGC Approved Jou

Multidisciplinary International E-research Journal

Recent Developments in LIFE SCIENCES for Human Welfare

- GUEST EDITOR -
Principal Dr. Ashok Pandit

- CHIEF EDITOR -
Dr. Dhanraj T. Dhangar

- EXECUTIVE EDITORS -
Dr. Smt. Sunita Jawale
Dr. J. H. Sawdekar | Dr. K. V. Badar

Printed By : PRASHANT PUBLICATIONS, JALGAON

For Details Visit To ...searchjc...mey.net

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Impact Factor – 6.261 • Special Issue - 120 • Feb. 2019 • ISSN – 2348-7143

INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S

RESEARCH JOURNEY

UGC Approved Journal
Multidisciplinary International E-research Journal



National Conference On

RECENT DEVELOPMENTS IN

LIFE SCIENCES

FOR HUMAN WELFARE

... Organized by ...

Department of Botany

Yeshwantrao Chavan College of Arts, Commerce and Science, Sillod.

Dist. Aurangabad, 431112 (M.S.) India

... Guest Editor ...

Principal Dr. Ashok Pandit

... Chief Editor ...

Dr. Dhanraj T. Dhangar

... Executive Editors ...

Dr. Smt. Sunita Jawale

Dr. J. H. Sawdekar | Dr. K. V. Badar

Printed by : PRASHANT PUBLICATIONS, JALGAON

PRINCIPAL
Dr. Rafiq Zakaria College For Woman
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Impact Factor - 6.261 • Special Issue - 120 • Feb. 2019 • ISSN - 2348-7143

INTERNATIONAL RESEARCH FELLOWS ASSOCIATION'S

RESEARCH JOURNEY

UGC Approved Journal

Multidisciplinary International E-research Journal

Dr. Rafiq Zakaria College for Women
Principal

Printed by

PRASHANT PUBLICATIONS

3, Pratap Nagar, Sant Dnyaneshwar Mandir Road, Near Nutan Maratha Mahavidyalaya, Jalgaon.

Website: www.prashantpublications.com Email: prashantpublication.jal@gmail.com

Ph: 0257-2235520, 2232800, 9665626717, 9421636460

EDITORIAL POLICIES - Views expressed in the papers / articles and other matter published in this issue are those of the respective authors. The editor and associate editors does not accept any responsibility and do not necessarily agree with the views expressed in the articles. All copyrights are respected. Every effort is made to acknowledge source material relied upon or referred to, but the Editorial Board and Publishers does not accept any responsibility for any inadvertent omissions.

Dr. Rafiq Zakaria College For Women
Narkhanda, Jubilee Park,
AURANGABAD. (M.S.)

RESEARCH JOURNEY International Multidisciplinary E-Research Journal ISSN : 2348-7143
Impact Factor (SJIF) - 6.261 | Special Issue 120 : Recent Developments in Life Sciences for Human Welfare February 2019

:CONTENTS:

Algae and Human Welfare 1
Milind J. Jadhav
Study of post harvest mycoflora associated with rot diseases of Sweet orange 18
Sumia Fatima
Chlorococcales of Dokewadi Reservior 23
S. M. Talekar
Airborne Algae and Its Impact on Human Health 25
Sunna V. Jawale, Milind J. Jadhav
Keynote on Safty with The Help of Ethnomedicinal Plants Against Snakebite 28
Sumia Fatima, Jadhav Reena Gudharilal
Effect of Storage Fungi on Physico-Chemical Changes in Sunflower Oil 33
Rajendra B. Kakde, K. V. Badar, Ashok M. Chavan
Studies on some Medicinal Plants from Ajanta region, Maharashtra, India 35
Kharat G. T.
Phytochemical analysis of a versatile plant: Syzygium cumini 38
S. W. Bhivgade
The Studies of Mycoflora Associated with the Stored Seeds of Carthamus Tinctorios Linn (Safflower) 40
A. M. Deshmukh
Study of medicinal uses of some Spices 47
Mr. Jige Sandipan Babasaheb
The New Record to the Flora of Marathwada, Maharashtra, India 50
Kamble, T. D., S. T. Bandewar, S. N. Solanke, M. M. Sardesai
The effect of medicinal plant extracts against guava wilt pathogen 55
Dr. Sumia Fatima & Uzma Quadri
Amylase Activity of Saprophytic Fungi from Vegetables Wastes 58
Balwan W. Kamble, Shrimant A. Survase and Anil U. Kulkarni
Community Structure of Leaf Litter Ants in Botha Forest of Maharashtra, India 61
G. B. Kale, N. B. Kulemale and Shriram N. Ghait
Studies on Varies Strains of Rhizobium spp. From Aurangabad District (M.S.) 65
S.S. Swami, K.V. Badar and B.T. Pawar
Halophilic Bacteria in Salt Stressed Soils of Jalna District 69
V.S. Phalke, B.T. Pawar and R.M. Gulve
A Report on Ethno- Medicinal Uses of Wild Vegetables Presented in Van Bhaji Pak-Kala Spardha, At Baripada Taluka- Sakri, Dist. Dhule 71
Jadhav Reena Girdharilal, Sulochana Ramsingh Rathod
A brief analysis for fungal pathogen Sclerotium rolfsii diseases in Maharashtra 74
Sumia Fatima, Uzma Quadri
Water Quality Management Study of Khelna Reservoir in Aurangabad District of Maharashtra .....
J. H. Sawdekar, Milind J. Jadhav

Dr. Rafiq Zakaria College for Women
18

Printed by : PRASHANT PUBLICATIONS

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

20. Study of Ant Diversity in Various Ecosystems in and Around Dnyanganga Wild Life Sanctuary in Maharashtra, India 77
G. B. Kale, N. B. Kutemate, Shriram N. Ghait, Suhas M. Pidbekar and Tropti Paraskar

21. Study on wild leafy vegetables from Ajanta region Aurangabad District. (M.S) 83
Bankar M.V., Bhosle N.P. and Ambhore J.S.

22. Survey report on study of ethnomedicinal uses of Butea monosperma plant ... Gorbanjara ... of Marathwada region 86
Sumia Fatima, Jadhav Reena Girdharilal

23. Antagonistic Activity of seed borne Alternaria species 88
Sulochana R. Rathod, Reena G. Jadhav

24. Phytochemical Studies in Leaf Drug Leonotis Nepetifolia (L.) R. Br. 91
Rupali Biradar, Vikas Gambhire

25. Algal Blooms in Lonar Crater Lake 93
Rafiullah M. Khan, Milind J. Jadhav

26. Study of diversity of Calliphoridae flies from Renapur, District Latur (M.S.) 95
Sarika A. Bansode, S.A. Bansode, V.R. More

27. To study the Effect of different temperature level on dry weight of fusarium oxysporium, Rhizoctonia solani and Alternaria solani 98
Sumia Fatima, Shafa khanand and Shaikh faruk Karim

28. Biochemical composition on Labeo rohita (Ham.) of experimental and control fishes due to administration of ovaprim, ovatide and Pituitary gland extract at Fish Seed Production Centre, Paithan, Aurangabad, Maharashtra State, India 100
Pawar M. B., Dr. Quadri S. A., Dr. Tingote R.S.

29. Taxonomic Study of Ants Subfamily Formicinae (Hymenoptera: Formicidae) From Aurangabad Dist. Maharashtra India 105
B.V. Sonune, R. J. Chavan

30. A Prelimninary Study of Algae from Fresh Water Reservoir 109
Vaibhav V. Pagar, Milind J. Jadhav

31. Anatomical Aspects of Ficus Hispida Linn. (Moraceae), Leaf, Stem and Root 111
Sneha Y. Ingle, K. V. Kothale

32. Phytochemical Studies in Leaf Drug Pergularia Daemia (Forsk.) Choiv 113
Rupali Biradar, Vikas Gambhire

33. Addition of Some Powdery Mildew Diseases from Aurangabad District (M.S.) India 117
Navalsingh J. Todawat and P. B. Pandiwal

34. Anatomical Study of Medicinal Plant: Ficus Krishnae C. De 119
Sneha Y. Ingle, K. V. Kothale

35. Biological Control By Tricholderma Viridi of Aternaria Alternata and Aspergillus Niger of Pomegranate 122
Haqeeqat Afreen Arshi, Dr. S. M. Quazi, Syeda Hina Kauser

36. Studies on Protein Contents of Trichuris Ovis Roederar, 1761 and Its Host Capra Hircus 124
Ganesh Misal, Raosaheb Barote

37. Transgenic approach for Development of highly tolerant Tomato (Solanum lycopersicum) against leaf curl virus using T-rep gene 127
Bandewar S.T., Kamble T.D., Kunchge N.S., A.M.Chavan

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ctrophotometric determination of polyphenols in royal jelly 131
eda Hina Kausar, Dr. V. R. More

Effect of Pre-Sowing Treatments on Seeds of Syzygium Cumuni (L.) Skeels. .....
Rajesh Shrirangrao Gaikwad, Gajanan Dinkar Mole

Studies on Pollen Biology of Jatropha integerrima Jacq. and Calliandra calothyrsus M 1
P.D.Lokare, Sumia Fatima

41. Ecofriendly Biosynthesis of Silver Nanoparticles from Aspergillus niger van Tieghem. .....
P.D.Lokare, Sumia Fatima

42. Effect of Mutagens on Relative Efficiency in M2 Generation of Cowpea [(Vigna Unguiculata (L.) Walp.] 145
B. S. Gaikwad, A. D. More

43. Alteration In Biochemials From Guava (Psidium guajava) Fruits Due to Post-Harvest Fungal Pathogens 147
Mumtaz Baig, Shaikh Farukh Kareem

44. Some traditional genotypes of Sorghum from Aurangabad District, Maharashtra. 149
Uchitkar Balaji P, Dhabe Arvind S

45. Physico-Chemical Profile of Godavari River 155
Shaikh Yasmeen Baig Mumtaz

46. Isolation and Screening of Benzonitrile Degrading Bacteria K7. 157
Dr. Ajane Vaishali Harish

47. Redescription of a genus Raillietina (Fuhrman, 1920) from Francolinus Pondicerianus at Latur Dist, (M.S.) India. 161
Ravi Solunke, Swati Phadke, Sapna Lohat

48. Note on genus Alysicarpus Desv. family-Fabaceae reference to flora of Marathwada 164
Shantanu Y. Chavan, Rupali Taur, Dileep Pokle

Dr. Rafiq Zakaria College for Women Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

208

Chapter in book

978-93-85426-49-0

978-93-85426-49-0

Liquid - Liquid Extraction of Platinum (IV) from Organic acid Media

Uzma Parveen K. Shaikh

Dr Rafiq Zakaria College for Women,Aurangabad
E-mail: upshaikh@gmail.com

Dr. Rafiq Zakaria College for Women Aurangabad

ABSTRACT

Investigation was made on the extraction and spectrophotometric determination of Platinum(IV) with 4-(4-dimethylaminobenzylidenemimino)-5-methyl-4H-1, 2, 4-triazole-3-thiol (DMABIMTT) from ascorbic acid media. In this method Platinum is extracted by using solvent extraction technique with DMABIMTT as an extractant which is stripped and determined spectrophotometrically. The optimum conditions have been determined by making a critical study of acid, metal ion and extractant concentration, period of equilibration, pH, various diluents and stripping agents. The effect of diverse ions on the quantitative extraction of Platinum(IV) has also been studied. The proposed method is applicable for the analysis of binary mixtures, synthetic mixtures, alloys and real samples

Key Words: Platinum (IV), Solvent extraction, DMABIMTT, Ascorbate media.

INTRODUCTION

Platinum is one of the most expensive metal, platinum group metals includes ruthenium, rhodium, palladium, platinum, gold, osmium and iridium. There is wide application of precious metals in the industrial processes as catalyst and use in jewelry and medicines (gold and platinum). Due to their scarcity and wide applications it is important to extract these metals from secondary sources. Other uses include the production of hard disk drive coatings, fiber optic cables, glass and anti-cancer drugs [1-4].

Solvent extraction is one of the most efficient separation technique used for extraction of metals. As compare to other separation techniques, solvent extraction is easy and cost effective technique.

By using chemical properties of platinum group metals, sulphur containing extractants are highly selective for extraction of these metals [5-7]. According to Pearson's concept platinum group metals act as soft acids and sulphur containing extractants act as soft bases and have high affinity. DMABIMTT is an sulphur containing extractant which is highly water repellent and show high affinity towards platinum metal. DMABIMTT has been successfully employed for the extraction of Platinum(IV) from hydrochloric acid media.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

115

Double

2018

"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
Volume 05, Issue 05 Sept. - Oct. 2018 eISSN NO. 2394-5362
Impact Factor (SJIF) - 5.266

Dr. Rafiq Zakaria College for Women

قومی شاعر۔ برج نارائن چکبست

لے چلی برہم سے کس وقت رکھے مرگ شتاب
اب تک آیا بھی نہیں ہاتھ میں پیمانہ ہے

ڈاکٹر سید فرحت نسرین
اسسٹنٹ پروفیسر شعبۂ اردو
ڈاکٹر رفیق زکریا کالج فار ویمن اورنگ آباد

اب چکبست ایک قومی شاعر کے روپ میں ہمارے سامنے آئے ہیں تو ان کو رخصت ہوئے کافی عرصہ گزر چکا ہے اس کے باوجود ہم چکبست کی علمی خدمات کو فراموش نہیں کر سکتے۔ دنیا سے ان کا بے وقت کا گذر جانا ماتو جیسے کل ہی کی بات ہو۔

چکبست ۱۹ جنوری ۱۸۸۲ کو شہر فیض آباد میں پیدا ہوئے ان کے والد بھی شاعر تھے یقین تخلص کیا کرتے تھے۔ چکبست کا خاندان علمی اعتبار سے بلند مقام رکھتا تھا۔ روایت زمانہ کے مطابق ان کی ابتدائی تعلیم گھر پر ہی ہوئی۔ ایک مولوی صاحب ان کو اردو و فارسی پڑھانے آیا کرتے تھے۔ کشمیری برہمن خاندان کے چشم و چراغ تھے۔ فارسی ادب سے لگاؤ ورثہ میں ملا تھا۔ قدرت نے طبیعت بھی ایسی موزوں دی تھی پھر گھر کا ماحول بھی شعر و ادب کا تھا ایسے میں چکبست کم عمری میں سخن کرنے لگے۔ یہ وہ زمانہ تھا جب آتش اور ناسخ غزل کے لیے زمین ہموار کر چکے تھے۔ ایسے میں چکبست نے بھی اسی انداز میں اپنے دل کی بات کہی۔ لیکن زمانہ بدل رہا تھا۔ اس وقت کی شاعری میں ماتم دلبری میں کوئی کشش باقی نہیں تھی۔ دنیا کے مسائل اور غم اہم ہو گئے تھے۔ ایسے میں چکبست نے بھی وہی رنگ اپنایا۔ ان کی شاعری میں غم جاناں کے بجائے غم دوراں نظر آنے لگا۔ وہ ایک نئے جہاں کی تعمیر میں مصروف ہو گئے لیکن ان کی فطرت میں چھپا ہوا حب الوطنی کا جذبہ ابھی خاموش ہی تھا۔ چکبست نے خالص ہندوستانی قومیت کے شاعر کی حیثیت جو تاریخ رقم کی وہ شاید ہی کسی کے نصیب میں آئی۔

نواب جعفر علی خاں اثر کا دعویٰ صد فیصد درست ہے کہ

"صرف چکبست ہی وہ قومی شاعر ہے جس نے کل ہندوستان کے جذبات و
ضروریات کی بلا امتیاز تفریق مذہب ترجمانی کی ہے"

چکبست کا مطالعہ بہت وسیع تھا اردو فارسی کے علاوہ انگریزی و فلسفہ پر بھی عبور رکھتے تھے۔ ان کے خیالات و نظریات پر گوکھلے راناڈے اور تلک کا اثر نظر آتا تھا۔ وہ بڑے قوم پرست تھے۔ ان کی قوم پرستی کا دائرہ بے حد وسیع تھا۔ وہ ہندوستانی تہذیب کے بڑے قدر داں تھے۔ اور تہذیب و تمدن کے دھارے میں قدیم و جدید کے امتزاج سے ترقی پسند

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
eISSN NO: 2394-5362
Volume: 05, Issue: 05, Sept. – Oct. 2018
Impact Factor (SJIF) – 5.266

Dr. Rafiq Zakaria College for Women

سماج کا سنگ بنیاد رکھنا چاہتے تھے۔ اور اپنے مقصد میں کامیابی کیلئے انھوں نے بڑی جد وجہد بھی کی۔ نئے دور اور نئی روشنی میں نئی نسل کے ہم قدم رہنا چاہتے تھے۔ تعلیمی اداروں میں شامل ہو کر ابھرتی ہوئی نسل کو سنبھالنے اور سیدھے راستے پر لے چلنے کی کوشش کی۔ وہ لکھنو یونیورسٹی کے عالم تھے۔ انھیں جب بھی موقعہ ملتا کالج جاتے۔ طلبہ سے ملتے باتیں کرتے ان کے نقطہ نظر کو سمجھتے اور ان کو اپنی بات سمجھانے کی کوشش کرتے۔ قومی معاملات میں ان کی ساری تمنائیں خالص ہندوستانی تھیں۔ ہر ہندوستانی ان کی آنکھ کا تارہ تھا۔ وہ ہندو مسلمان چھوٹے بڑے، امیر غریب سبھی کے خیر خواہ تھے۔ سب کے دکھ میں سچے دردمند انسان کی طرح شرکت کرتے تھے۔ انھیں کا یہ شعر ان کی فطرت کا سچا مظہر ہے۔

درد دل پاس وفا جذبہ ایماں ہونا
آدمیت ہے یہی اور یہی انساں ہونا

ہم چکبست کو اعتدال پسند کہہ سکتے ہیں۔ ان کے یہاں انتہا پسندی کا کوئی نظریہ نہیں ملتا۔ لیکن انگریزی تسلط کے خلاف ان کا رویہ بڑا جارحانہ تھا۔ وہ ہندوستان کی عظمت اور اس کی ہمہ جہت ترقی کا خواب دیکھتے تھے۔ جسکا اظہار انھوں نے یوں کیا ہے

یہ آرزو ہیکہ مہر و وفا سے کام رہے
وطن کے باغ میں اپنا ہی انتظام رہے

چکبست ملنسار، خوش وضع اور وفادار دوست تھے ان کے دل کا گوشہ گوشہ انسانیت سے معمور تھا۔ بہت سنجیدہ و پر فکر آدمی تھے۔ باتیں کم کرتے لیکن خشک مزاجی کا شائبہ تک نہیں تھا۔ بہت کھلکھلا کر کم ہنستے تھے لیکن ان کی بذلہ سنجی روتوں کو ہنسا دیتی۔ سراپا اخلاق تھے۔ چکبست ترقی پسند شاعر و ادیب تھے۔ بے راہ روی سے کوسوں دور انھوں نے ترقی اور اصلاح کے میدان میں بھی میانہ روی کو اپنا اصول بنایا۔ وہ تعلیم نسواں کے زبردست حامی تھے۔ زندگی کے ہر عمل کو اخلاق کی کسوٹی پر پرکھتے تھے۔ تعلیم نسواں کو بھی وہ ہندوستانی تہذیب سے آزاد نہیں سمجھتے تھے۔ ہندوستانی عورت کیلئے جذبۂ شرم و غیرت، خاندان پروری یہ وہ نگینے تھے جن کو وہ زیور کیلئے از حد ضروری سمجھتے تھے۔ وہ ہندوستانی عورت کو صرف چراغ خانہ بنا کر نہیں رکھنا چاہتے تھے۔ اور نہ ہی عورت کا شمع انجمن بننا ان کو پسند تھا۔ وہ طبقۂ نسواں کے فرائض کی انجام دہی کو بڑا انسانی و قومی فریضہ مانتے تھے۔

اودھ پنچ کے سارے ادیب چکبست کے خاص دوست تھے اس کے باوجود انھوں نے کبھی بھی اپنی تحریروں میں وہ طرز نہیں آنے دیا جو اودھ پنچ کا رہا۔ ان کی فطرت کا یہ خاص وصف تھا کہ وہ چاہے کسی سے کتنا ہی خفا ہوں یا نظریات میں فرق ہو یا کوئی اور بات ہو پر وہ کبھی بھی اپنے انداز میں اپنی زبان یا اپنے رویے میں تلخی نہیں آنے دیتے۔

چکبست نے نگار نسیم کے ایڈٹ شدہ دیباچہ پر عبدالحلیم شرر کی تنقید پر بھی اپنے تنقیدی وقار کو قائم رکھا اور بڑی نرمی

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

کے ساتھ لکھا کہ

"جناب شرر اطمینان رکھیں کہ جہاں تک میری ذات کا تعلق ہے میرے قلم سے
ایک فقرہ بھی ایسا نہ نکلے گا جس سے کسی بندہ خدا کو توہین متصور ہو"

چکبست نے ہمیشہ انسانیت کو اہمیت دی۔

وطن کی محبت اور وطن پرستی انسان کے اہم ترین جذبات میں شمار کی جاتی۔ تاریخ بھی ہمیشہ اس بات کی گواہ رہی ہیکہ وطن پرستی کا جذبہ ہر قوم میں موجود ہوتا ہے۔ چکبست بھی ایک سچے محب وطن تھے۔ انھوں نے قوم کی اصلاح کیلئے بہت جدوجہد کی۔ وہ گوکھلے اور بشن نرائن کی تقریروں سے بہت متاثر تھے اور انھیں سیاست میں دلچسپی ہوئی گو کہ عملی سیاست میں کبھی حصہ نہ لیا لیکن کے کلام میں ان کی تمنائیں شفاف آئینے کی طرح نظر آتیں ہیں۔ وہ ہمیشہ جذبہ حب وطنی سے سرشار معلوم ہوتے ہیں اور یہی حب الوطنی ان کے قومی و سیاسی تصورات کی بنیاد ہے۔

چکبست کی نظم خاک ۱۹۰۵ء میں لکھی ہوئی نظم ہے۔ اس نظم میں جا بجا ہندوستان کی عظمت اور شان کا ذکر ملتا ہے۔ یہ اشعار چکبست کے خیالات کا آئینہ ہے۔

اگلی سی تازگی ہے پھولوں میں
کرتے ہیں رقص اب تک طاؤس جنگلوں میں
اب تک وہی کڑک ہے بجلی کی بادلوں میں
پستی سی آگئی ہے ہر دل کے حوصلوں میں
گل شمع انجمن ہے گو انجمن وہی ہے
جب وطن نہیں ہے خاک وطن وہی ہے

اس نظم کے ہر لفظ سے چکبست کی آرزوں کا پتہ چلتا ہے اور وہ اپنی نظموں کو صورت حب الوطنی کی شکل میں پیش کرتے ہیں۔ ان کے اس جذبے نے ان کو ایک سیاسی مفکر کی حیثیت دے دی۔ عملی سیاست میں حصہ نہ لے کر بھی وہ تصویر حب الوطنی بنے ہوئے تھے ان کا جذبہ حب الوطنی ہندو مسلم اتحاد کی شکل میں ملتا ہے۔ وہ مذہب کے فرق کو سیاسی میدان کیلئے انتہائی نقصان دہ سمجھتے تھے۔

انگریز جو ہندو مسلم میں نفاق ڈال کر حکومت کر رہے تھے اس نفاق کو چکبست ختم کرنا چاہتے۔

چکبست سرسید احمد سے بھی متاثر تھے جنکی وجہ یہ تھی سرسید احمد مذہب کو محبت کا ذریعہ مانتی تھیں اور مذہبی اختلاف کو ختم کرنا چاہتی تھی اور چکبست بھی مذہبی بیر کے سخت خلاف تھے۔ وہ اپنے رسالے "صبح امید" میں سرسید احمد کی خدمات کا اعتراف کرتے ہیں اور جب ۱۹۱۹ء میں سرسید احمد نے اپنا ہفتہ وار اخبار "یا نیشنل انڈیا" نکالا تو چکبست

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



نے ان کی خدمات کو خوب خوب سراہا۔

چکبست نے ۱۹۰۳ء میں ایک کلب قائم کیا اور اس کا ذکر بھی نظم و نثر میں کرتے ہیں۔ اس کلب کے ساتھ انھوں نے ایک لائبریری بھی قائم کی تھی۔ جس کا مقصد صرف اور صرف نوجوانوں کی اصلاح تھا۔ ذہنی اور جسمانی تربیت کرنا۔ بچوں اور نوجوانوں کے چال چلن درست کرنا تھا۔ اور ادبی صلاحیتوں کو پروان چڑھانا تھا۔ ہم اختصار کے ساتھ یہ کہہ سکتے ہیں کہ وہ قوم کے نوجوانوں کو واقعی تعلیم یافتہ و مہذب بنانا چاہتے تھے۔

چکبست نے ہمیشہ کوشش کی کہ ہندوں بیواؤں کی دوسری شادی کا رواج عام ہو جائے۔ لیکن یہ مسئلہ ان کی حیات میں تو حل نہ ہو سکا بعد میں اصلاحی اقدار سے تبدیلیاں رونما ہوئیں اور عقد بیوگان کا عمل شروع ہوا۔

چکبست تعلیم نسواں کے علمبردار تھے ان کی بڑی خواہش تھی کہ ہندوستان کی لڑکیاں خوب ترقی کریں۔ لیکن اس ترقی میں ایک پوشیدہ پہلو یہ تھا کہ وہ لڑکیوں کی بے جا آزادی اور حد سے زیادہ بے عملی و بے پردگی کو غلط سمجھتے۔ اپنی نظم "پھول بالا" میں قوم کی لڑکیوں سے خطاب کرتے ہوئے کہتے ہیں کہ

روش عام پہ مردوں کی نہ جانا ہرگز
داغ تعلیم میں اپنی نہ لگانا ہرگز
نقل یورپ کی مناسب ہے مگر یاد رہے
خاک میں غیرت قومی نہ ملانا ہرگز

☆☆☆

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women
Aurangabad

AJOMC-P86

ARTICLE

An Efficient and Selective A-Monobromination of Aromatic Ketones under Ultrasonic Irradiation in Aqueous Medium

Devendra S. Wagare[1], Mazahar Farooqui[2], Sanjay G. Khobragade[3] and Ayesha N. Durrani[2]✉

Asian Pub. Corp.

www.asianpubs.org

Asian Journal of Organic & Medicinal Chemistry

Volume: 2
Issue: 4
pp-
Year: 2017
Month: October–December
DOI: https://doi.org/10.14233/ajomc.2017.AJOMC-P86

Received:
Accepted:
Published:

ABSTRACT

A facile, efficient, environmentally benign protocol has been developed for rapid synthesis of α-bromoacetophenones from direct reaction of acetophenones and N-bromosuccinimide by using ultrasound (US) waves within 15-20 min with good to excellent yields. Their formation characterized by IR, ^{1}H NMR and mass spectroscopy.

KEYWORDS

Ultrasound, α-Bromo acetophenones, Selective monobromination, PEG-400; N-Bromosuccinimide

INTRODUCTION

α-Haloketones, first obtained and described as early as the end of the eighteenth century [1] have been attracting increasing attention in view of their high reactivity and widely used as most important precursors for the synthesis of various classes of heterocyclic compounds *viz.* furans [2], benzofurans [3], 2-aroylbenzofurans [4], naphthofuranone [5], furocoumarins [6], azaindolizine [7], thiophene [8], 2-aminoimidazole [9].

Ultrasound waves act as a non-conventional energy source and selective, reduced reaction time and simple operation. It used in (a) organic synthesis (b) nanomaterial synthesis and (c) sonoelectrochemistry [10]. Recently, ultrasound used in organic synthesis due to it enhance reaction rates and improve yields of reactions [11,12]. In recent years, many improved methods have been reported for α-bromination by using molecular bromine or Br_3/NaH, NBS/NaH or $CuBr_2$ with hydroxy(tosyloxy)-iodo benzene or $Mg(ClO_4)_2$, from olefins using $TsNBr_2$ [13]. All these methods provides good yields but most of them have disadvantages. In this approach instead of using toxic, corrosive and irritating bromine, we used user eco-friendly N-bromosuccinimide for the selective mono-bromination of various substituted acetophenones in water as affordable and green solvents.

EXPERIMENTAL

All the chemicals and solvents were of AR grade and used without further purification. The completion of reactions were monitored with the help of thin layer chromatography using

Author affiliations:

[1]Department of Chemistry, Vivekanand College, Aurangabad, India
[2]Department of Chemistry, Dr. Rafique Zakaria Campus for Women, Aurangabad, India
[3]Department of Chemistry, Brijlal Biyani Science College, Amravati

✉To whom correspondence to be addressed:

E-mail: drayeshandurrani@gmail.com; dswagare@rediffmail.com

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Rauza Bag, Nirala Bazar,
AURANGABAD. (M.S.)

Available online at: http://ajomc.asianpubs.org

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College

144
IC 6

2017-2018

Dr. Rafiq Zakaria College for Women ★ Aurangabad

Heterocyclic Letters
Vol. 7| No.4|1061-1064|Aug-Oct|2017
ISSN : (print) 2231–3087 / (online) 2230-9632
CODEN: HLEEAI
http://heteroletters.org

FACILE AND GREEN ONE-POT SYNTHESIS OF 2-AMINOTHIAZOLES IN GLYCEROL-WATER

Mujahed H. shaikh,[a] Devendra S. Wagare,[a] Mazahar A. farooqui,[a] Ayesha N. Durrani[a,b]

[a,b]*Department of chemistry, Rafiq Zakaria College for Women, Aurangabad (M.S.), India*

Abstract: A facile, highly efficient and environmentally benign one-pot protocol has been developed for the synthesis of 2-aminothiazoles by stirring of acetophenone, N-bromosuccinimide and followed by thiourea at room temperature in glycerol-water as a greener reaction medium. NBS used as Brominating agent for monobromination of differently substituted acetophenones.

Keywords: One-pot, acetophenones, glycerol-Water, 2-amino thiazoles, Sonication, Green chemistry

Introduction:

Glycerol known as a "organic water" since, like water, it is polar, easily available, biodegradable, cheap, non-toxic and easily form strong hydrogen-bond networks. Glycerol has a wide range of solubility for organic and inorganic compounds, including transition metal catalysts.[i] The peculiar physical and chemical properties of glycerol, such as low toxicity, non volatile solvent, easily removed from reaction matrix, high boiling point, and easily prepared from renewable feedstocks,[ii] widely use as a green medium in various organic transformation like, cross-coupling reactions[iii] include Pd-catalyzed Heck and Suzuki cross-couplings, base- and acid- promoted condensations, catalytic hydrogenation, and asymmetrical reduction.[iv] one-pot multicomponent reaction [v-vi]

4-aryl-2-aminothiazole shows wide range of pharmacological, medicinal and biological applications like antiinflammation,[vii] antihelmintic, antihypertensive,[viii] antiHIV,[ix] and possesses immunosuppressant activity.[x] antifungal, antibiotic ,antibacterial activity.[xi]

According to Literature survey, different types of methods have been reported for the synthesis of 2-amino thiazoles from the reaction of thioureas and α-haloketones in various organic solvents at higher temperature but most of them have disadvantages like use of lachrymatric α-haloketones, severe heating condition, toxic solvents, toxic catalysts, etc. and recently, reusable reaction media and low waste route found to be significant place in organic synthesis, By considering this, we have designed green method for the one-pot synthesis of 2-aminothiazole in glycerol and water as recyclable and greener medium.

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda , Aurangabad (M.S.)

PRINCIPAL 1061
Dr. Rafiq Zakaria College For Women
Navkhanda, Julbiee Park,
AURANGABAD. (M.S.)

2012-2018

International Journal of Universal Print
ISSN: 2454-7263 ID: ACTRA 2018 036 Published Mar. 2018
Volume No. 04, Issue No.04, Copyright © Universal Print
Web: www.universalprint.org , Email: ijup@universalprint.org
Title Key: Glycerol-Water Act As A Green Media ...

Dr. Rafiq Zakaria College for Women
Aurangabad

Glycerol-Water Act As A Green Media For The One-Pot Synthesis Of 4-Aryl-2-Aminothiazoles Under Microwave Irradiation

Mujahed Shaikh[1], Devendra Wagare[1],Ayesha Durrani[#*]
[1]Department of chemistry ,Vivekanand college, Aurangabad, Maharashtra (India)
email .id : dswagare@gmail.com
[#]Department of chemistry ,Dr. Rafiq Zakaria college for women, Aurangabad

ABSTRACT: Thiazole ring system found to be important in pharmaceutical and medicinal chemistry, therefore there is urgent need to synthesize by environmentally benign method. So, Various 4-aryl-2-aminothiazoles derivatives has been prepared via one-pot microwave assisted reaction of N-bromosuccinimide and aromatic ketones followed by addition of thiourea in glycerol-water as an environmentally green and recyclable media with excellent yield (91-98%) with minimum reaction time.

Graphical abstract

Scheme

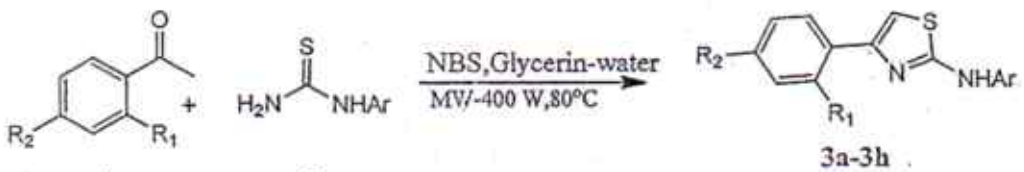


Fig.1 One-pot synthesis of 4-aryl-2-aminothiazole 8 example

KEYWORDS: 4-aryl-2-aminothiazoles, Glycerol-water, green method, N-bromosuccinimides

INTRODUCTION: Recently one-pot synthesis emerged as an important tools in organic synthesis especially for heterocycic compounds, because of atom economy, simple and convenient and easy work-up procedures.Aminothiazoles is an important heterocyclic ring present in various bioactive molecules (Lewis J R 1999) and found to be best precursor of the preparation of various drugs like, antibacterial,(Tsuji, K. and Ishikawa, H.1944) antiinflammation,(Clemence, F et al.1988) antiallergies,(Hargrave, K. D et. al.1983) antihelmintic, antibiotic, and it also used on the treatment of schizophrenia.(Jaen, J. C et al. 1990) It also possesses inhibitors activity against enzyme cycloindependent kinase.(K. S. Kim et. al 2002).

Various methods have been employed for the synthesis of 4-phenyl-2-aminothiazoles ammonium-12-molybdophosphate in methanol,(Das, B et al.2006) β-cyclodextrin in water,(Narender, M et al.2005) iodine, (Siddiqui, H.L et al.2006) silica chloride,(Karade, H et

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nevkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Megha Rai
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Jublee Park, Aurangabad - 431001
Dr. Ayesha Durrani
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Nevkhanda , Aurangabad (M.S.)

17-18

(84)

www.sphinxsai.com

ChemTech

International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.11 No.11, pp 211-216, 2018

Stability constant study of transition metal complexes with pharmacologically active ligand(N-[-(4-chlorophenyl)methylene] nicotinohydrazide) by pH metric Technique

ZamzamTaher Omar (Al-Ahdal)*, Shivaji Jadhav, Mazahar Farooqui, Megha Rai

Department of Chemistry, Dr.Rafiq Zakaria College for Women, Aurangabad - 431001, MS, India.

Dr. Rafiq Zakaria College for Women Aurangabad

Abstract : Pharmacologically active organic ligands (N-[-(4-chlorophenyl)methylene] nicotinohydrazide) synthesized through the condensation of equimolar mixture of Anti-mycobacterial agent(nicotinohydrazide)with aromatic aldehyde. The reaction progress and purity of organic ligands were verifying by thin layer chromatography. Formation of organic ligands was confirming with the help of MP, IR, ^{1}H NMR, ^{13}C NMR and elemental analysis.Further formation of complexes of transition elements like Mn(II), CO(II), Ni(II), Cu(II) and Zn(II) with organic ligand (Schiff base) N-[-(4-chlorophenyl)methylene] nicotinohydrazide, were studying by the pH-metric technique at 27±1^{0}C in 70%(v/v) ethanol - water medium at 1M ($NaClO_4$) ionic strength. The stability constants of these binary complexes were evaluating and order of stability constant found as Zn (II) > Cu (II) >Ni (II) >Mn(II) > Co (II).

Key word : Binary complexation,N-[-(4-chlorophenyl)methylene]nicotinohydrazide, transition metals; pH metric technique.

Introduction

In the field of coordination chemistry, metal ions perform vital roles in biological processes. The mineral complexes have been studied with the basic Schiff links to be utilized in the biological, clinical, analytical and pharmacological fields[1].Schiff bases perform an important function in coordination chemistry because they easily form stable complexes with most transitional metal ions[2].Schiff bases have a broad assortment of applications in different regions such as biological chemistry, organic and inorganic chemistry[3].Schiff bases are now attracting the attention of medicinal chemist. Schiff base containing an amine group (–RC=N–) are commonly formed by the intensification of an initial amine with an active carbonyl[4]. Schiff bases and their complexes have a variety of applications in biological clinical and analytical fields[5].The complexation of Schiff base with transition metals increasethebiologicalactivity[6]. Isoniazid is anti-mycobacterial drug and used.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park
AURANGABAD. (M.S.)

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad.

DOI= http://dx.doi.org/10.20902/IJCTR.2018.111121

2017-2018

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.074
Volume 7, Issue 3, 1171-1178. Research Article ISSN 2277– 7105

SYNTHESIS OF[4+2] CYCLOADDITION REACTION BY USING BASE CATALYST UNDER ULTRASONIC IRRADIATION

Pravin Chavan[1]*, Shivaji Jadhav[2], Dattatraya Pansare[3], Mazahar Farooqui[2], Megha Rai[2]

[1]Department of Chemistry, Doshi Vakil Arts and G.C.U.B. Science and Commerce College, Goregaon-Raigad, Maharashtra- India.

[2]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Navkhanda, Jublee Park, Aurangabad Maharashtra- India.

[3]Department of Chemistry, Deogiri College, Station Road, Aurangabad 431 005, MS, India.

Dr. Rafiq Zakaria College for Women Aurangabad

Article Received on
10 Jan. 2018,
Revised on 30 Jan. 2018,
Accepted on 20 Feb. 2018
DOI: 10.20959/wjpr20185-11503

***Corresponding Author**
Pravin Chavan
Department of Chemistry,
Doshi Vakil Arts and
G.C.U.B. Science and
Commerce College,
Goregaon-Raigad,
Maharashtra- India.

ABSTRACT

An efficient synthesis of substituted dihydropyrimidobenzimidazoles was achieved via (4+2) one pot three-components Povarov reaction using aromatic aldehydes, 2-amino-bezamidazole and maleic anhydride under piperidine base catalysis. The discovered methodology for the preparation of substituted dihydropyrimidobenzimidazoles offers several advantages over previous methods including mild reaction conditions, easy work-up, a wide range of applicability, less time consume and products in good yields.

KEYWORDS: Substituted dihydropyrimidobenzimidazoles, Aromatic Aldehyde, Povarov reaction, Ultra-sound irradiation.

INTRODUCTION

The Povarov(Aza-Diels-Alder) reaction is an inverse-electron-demand (4+2) cycloaddition reaction to synthesize natural products from diene and dienophile.[1,2] Dihydropyrimidobenzimidazoles derivatives are one of the most important classes of natural products exhibiting a wide spectrum of pharmaceutical properties.[3] It includesniciceptin/orphanin FQ receptor agonism[4], HIV-1 integrase inhabitation.[5] Aza-Diels-Alder reaction is a powerfuland efficientmethod for preparation of Dihydropyrimidobenzimidazoles.[6,8] Mostly, Schiff's bases (imines) derived from aromatic amines and aldehydes act as heterodienes and react with various dienophile in presence of

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda, Aurangabad

ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH

INNOVARE ACADEMIC SCIENCES
Knowledge to Innovation

Vol 12, Issue 2, 2019

Online - 2455-3891
Print - 0974-2441

Research Article

PHYTOCHEMICAL SCREENING AND ANTIAMEBIC STUDIES OF *TAMARINDUS INDICA* OF LEAVES EXTRACT

MANSOUR ABDULNABI H MEHDI[1]*, FADEL YS ALARABI[1], MAZAHAR FAROOQUI[2], VIDYA PRADHAN[1]

[1]Department of Zoology, Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, India. [2]Departemnt of Chemistry, Dr. Rafiq Zakaria College for Women, Navkhanda, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad - 431001, India. Email: Mansourabdulnabi@gmail.com/drvidyasp@gmail.com

Received: 11 September 2018, Revised and Accepted: 03 November 2018

ABSTRACT

Objective: The present study deals with preliminary phytochemical screening of *Tamarindus indica* extracts and investigates its antiamebic effect against *Entamoeba histolytica in vitro*.

Methods: *E. histolytica* was isolated from stools of patients with amebic dysentery and cultivated in lock-egg medium. The leaves extract was added to check its antiamebic activity.

Results: The phytochemical screening shows that *T. indica* contains alkaloids, flavonoids, phenol, and tannins. *T. indica* extracts (aqueous and ethanolic) were added to culture media *E. histolytica*. It was observed that *E. histolytica* count reduced to zero after 72 h and 96 h when 15 mg/ml of aqueous and ethanolic extracts were added, respectively. It is also revealed that there is no cytotoxicity against erythrocytes even when high concentration of plant leaves extract is used.

Conclusion: The *in vitro* sensitivity of *T. indica* leaves extract against the *E. histolytica* is established.

Keywords: *Entamoeba histolytica*, *Tamarindus indica*, Phytochemical.

© 2019 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/) DOI: http://dx.doi.org/10.22159/ajpcr.2019.v12i2.29684

INTRODUCTION

Entamoeba histolytica has affected 50 million people of the world's population annually with the prevalence of 50% of the general population it is estimated to cause >100,000 deaths per year [1,2]. The prevalence of amebiasis varies from 1% in industrialized countries to 50%–80% in tropical countries [3]. It also represents the second largest cause of mortality from infection with parasitic protozoa after malaria [4].

At present, metronidazole is the therapeutic drug of choice for the treatment of amebiasis [5], but it experiences drug resistance by *E. histolytica* [6], resulting in the need for increased doses to overcome the infection [7]. However, this drug has several untoward side effects such as headache, metallic taste in the mouth, and vomiting as well as neurotoxicity [8,9]. *E. histolytica* parasite has registered some level of resistance to most of the medicines rendering them ineffective [10], in addition, the risk of potential mutagenicity, carcinogenicity, and side effects of metronidazole, and taking into account, the development of resistant strains of *E. histolytica* against metronidazole, new, more effective, and safer antiprotozoal agents is urgently required [9,11]. In developing countries, medicinal plants are popular because their products are safe and widely available at low cost [12]. Screening natural products provide the chance to discover new molecules of the unique structure with high activity and selectivity [13]. Therefore, there is a need to find new compounds that can help to curb some of the menaces of resistance and also treat this *E. histolytica*.

The aim of this study is to perform preliminary phytochemical screening of the *Tamarindus indica* extracts and to investigate the antiamebic effect of *T. indica* against *E. histolytica in vitro*. In addition, this study aims to investigate cytotoxicity against the erythrocytes for *T. indica* extracts. According to literature survey, antiamebic activity of this plant has not previously been reported. Therefore, this study could be assumed as the first report on this topic.

MATERIALS AND METHODS

Collection of plant sample

T. indica leaves (Fig. 1a) were collected from Rozabagh garden. The collected plant was identified botanically by Dr. Rafiuddin Naser Department of Botany Maulana Azad College, Aurangabad. The leaves were washed well under tap water, then dried in the laboratory in the absence of sunlight and left for two weeks. The leaves were flipped daily to remove damaged leaves and to prevent moisture. When the dried leaves were ready, they were grinded with an electric grinder until they became soft powder. The powder was preserved in bottles at 4°C in refrigerator.

Preparation of plant extracts

The following procedures were used to prepare aqueous and ethanolic 70% extract [14].

Preparation of aqueous extracts

About 40 g of dry plant powder was taken in a beaker and 400 ml of distilled water was added. Then, the mixture was stirred with a magnetic stirrer for 24 h. It was then sprayed by four layers of gauze cloth to separate the large fibers. The filter was then separated by centrifuge at 3000 rpm for 10 min. The extract was evaporated by leaving it in an incubator at a temperature of 50°C for 24 h. The extract was weighed and kept in refrigerator in sterilized and dark glass containers.

Preparation of ethanolic extracts

About 40 g of dry plant powder was weighed and transferred to Soxhlet extraction. 400 ml of ethanol was added to it. The plant materials were extracted at 50–55°C, till the color extract disappeared. The solvent was evaporated by rotary evaporator. The dry mass was transferred to incubator and kept for 24 h 50°C. It was weighed and kept in refrigerator in sterilized and dark colored containers.

PRINCIPAL
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad (M.S.)

International Journal of Universal Print
ISSN: 2454-7263 ID: ACTRA 2018 013 Published Mar. 2018
Volume No. 04, Issue No.02, Copyright © Universal Print
Web: www.universalprint.org , Email: ijup@universalprint.org
Title Key: SYNTHESIS OF α-AMINOPHOSPHONATES AT ROOM ...

2012-2018

SYNTHESIS OF α-AMINOPHOSPHONATES AT ROOM TEMPERATURE BY ECO-FRIENDLY WATER MEDIATED GREEN PROTOCOL

Ayesha Durrani, S. A. Pathare, B. L. Angarkhe, Archana D. Jadhav*
Arts, Science and Commerce College Rahuri,
Po/Tal-Rahuri, Dist-Ahmednagar
Pin-413705 (Maharashtra), India
e-mail: archu1990jadhav@gmail.com
(M.S)

Dr. Rafiq Zakaria College for Women Aurangabad

ABSTRACT:-
Single step synthesis of α-aminophosphonate concerns with the study of green chemistry is helpful to reduce environment pollution. The increasing environmental awareness have led to consideration of highly efficient one-pot , three component, green approaches for important organic synthons. We describe here a simple, elegant, high yielding protocol for the synthesis of α-aminophosphonate in totally solvent free, catalyst-free conditions by reacting aldehydes, amine &trimethyl phosphate at ambient conditions.This method provides mild reaction condition and less toxicity as compared to the conventional methods. The structural assignment of the final products has been done by spectral techniques.

KEYWORDS:-Aldehydes; α-Aminophosphonate; amines; trimethylphosphite; solvent free.

INTRODUCTION:-

The synthesis of α-aminophosphonates exhibiting high bio-activity has recently attracted a lot of attention. Design and development of products and processes that minimize the usage as well as generation of toxic substances have been the aim of green chemistry. To avoiding addition of supplementary chemicals like solvents, catalysts &promoters,etc. In the reaction sequence or work-up processes constitutes a significant steps for environmentally friendly reaction protocol. For designing synthetic methods at room temperature goes a long way in making the **reaction totally clean and hazard –free** efficient process.

Organophosphorous compounds are important substrates in the study of biochemical and pharmacological spectrum have become the interested subject in recent years.In our interest in developing environmentally benign efficient solvent-free protocols for the synthesis of important products, we describe here a simple, high yielding protocol for the synthesis of α-aminophosphonates in totally solvent-free & catalyst-free conditions.Nowadays, microwave irradiation is used to accomplish certain unsuccessful or low-yielding reactions, reducing the reaction time from days to minutes, and improving yields.

A number of reported methods was determined by nucleophilic addition of **dimethyl phosphite or trimethylphosphite** to imines (generated in situ from different aldehydes and amines) catalysed by an acid, lanthanide triflate& many methods using different catalytic systems such as,

Dr. Megha Rai
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Jubilee Park, Aurangabad - 431001.

Dr. Ayesha Durrani
Head
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Navkhanda , Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

STABILITY CONSTANT OF NADIFLOXACIN WITH TRIVALENT RARE EARTH METAL IN AQUEOUS MEDIA: A PH-METRIC STUDY.

MEGHA RAI[1], JAMEEL PATHAN[2], H.B.NAGRE[3], D.D.KAYANDE[4]

1. Dept. of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad - 431001 (MS), India.
2. Dept. of Chemistry, Sant Ramdas College Ghansawngi, Dist. Jalna (MS), India.
3. Dept. of Chemistry, Vivekananda College, Aurangabad - 431001 (MS), India.
4. Dept. of Chemistry, S.B.E.S. College, Aurangabad - 431001 (MS), India.

***E-mail:** drkayande@gmail.com, drmegha08@gmail.com

ABSTRACT : The interaction of lanthanide metal ions (such as Ce, Pr, Nd, Pm, Gd) with broad spectrum antibiotic Nadifloxacin has been investigated in aqueous medium at 25°C temperature and at an ionic strength of 0.2M $NaClO_4$ by using a pH metric titration technique. The method of Calvin and Bjerrum as adopted by Irving and Rossotti has been employed to calculate the values of proton-ligand (pK) and Metal-Ligand (logK) stability constants of data obtained for Nadifloxacin complexation with rare earth metal ions. The trend in the formation constants follows the order: $Pr^{3+} > Ce^{3+} > Pm^{3+} > Nd^{3+} > Gd^{3+}$

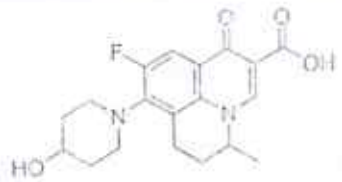
KEYWORDS: Nadifloxacin, Lanthanides, pH-metric titration technique, Stability constant.

INTRODUCTION:

The metal ligand equilibria plays important role in various fields. It is well known fact that the insertion of metal in medicinal drugs in the form of complexes exhibit remarkable difference in therapeutic values as compared to marginal drug, so various researchers reports stability constant of bioactive compounds with metal [1-3]. For the investigation of stability constant various technique are utilized such as potentiometry etc. pH-metric study is one of the best widely used technique because it has several superiority such as, it is easy to understand and work, cheap technique [4-6] etc.

Now-a days, various researchers have their interest in the investigation of complexation properties of the rare earth metals. Due to the outstanding functions of the lanthanide ions, It have often been efficaciously utilised as progressive calcium and magnesium cation substitutes in many metalloproteinase as chiral NMR shift reagents.

In view of the importance of biologically active compounds and rare earth metal in medicine, in the present investigation complexation and determination of stability constant of Nadifloxacin with rare earth metal have been described. It was thought of interest to study the complexes of Nadifloxacin with five rare earth metal ions Ce^{3+}, Pr^{3+}, Nd^{3+}, Pm^{3+} and Gd^{3+} using pH metrically in aqueous medium. Nadifloxacin is a topical fluroquinolone antibiotic for the treatment of acne Vulgaris [7]. It is also used to treat bacterial infections. It showed broad-spectrum antibiotic activity against gram (+)ve, gram (-)ve and anaerobic bacteria. It played significant role against methicillin-resistant staphylococcus aureus in-vitro studies. It has functional group with donor atom N and O. Nadifloxacin is one of the approved drug for the treatment of acne Vulgaris in European countries [8].



Nadifloxacin

From the literature survey it is revealed that no work is notified on the complexation of Nadifloxacin with rare earth metal. Hence we had carried out the study of complexation beheviour of Nadifloxacin with rare earth metal by employing pH-metric titration technique.

In the present investigation of proton-ligand and metal-ligand stability constant, we used metal ions from lanthanide series (Ce, Pr, Nd, Pm, Gd), complexing tendency of lanthanide series metal ions is lower than d-block elements but it represents significant binding properties with desirable ligands [9-10]. Because d-orbitals are less diffused with respect to f-block elements [11-14].

MATERIALS AND METHODS :

The double distilled water is prepared in the laboratory by using all glass quick fit assembly. The medicinal drug was procured from the local pharmacy college. Nitrates of lanthanides were purchase from local supplier and it was of British Drug House (BDH) India Ltd. Sodium perchlorate and perchloricacids were of A.R. grade and from S.D. fine chem. Ltd. The pure drug Nadifloxacin is soluble in double distilled water. The solutions used in the pH metric titration were prepared in double distilled CO_2 free water. The NaOH solution was standardized against oxalic acid solution (0.1M) and standard alkali solution was again used for standardization of $HClO_4$. The rare earth metal salt solutions were also standardized using EDTA titration. All the measurements were made at temperature 25°C in aqueous medium at constant ionic strength of 0.2 M $NaClO_4$. The water thermostat model SL-131, scientific isotemperature refrigerated circulator accurate to ± 0.1 °C is used to maintain the temperature constant. The solutions were equilibrated in the thermostat for about 15 minutes before titration. The pH measurement was made using a digital pH meter model Elico LI-120 in conjunction with a glass and reference calomel electrode (reading accuracy ±0.01 pH units). The instrument was calibrated at pH 4.00, 7.00 and 9.18 using the standard buffer solutions.

Potentiometric determination of Stability constant: Calvin-Bjerrum titration technique [15,16] has been used for the

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jalna Road, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

12-18

85

Asian J. Research Chem. 11(1): January -February 2018

Dr. Rafiq Zakaria College for Women * Aurangabad

ISSN 0974-4169 (Print)
0974-4150 (Online)

www.ajrconline.org

ajrc

RESEARCH ARTICLE

Synthesis of Tetrahydroquinoline derivatives via One Pot Multi-component (4+2) Cycloaddition (Povarov) Reaction

Pravin Chavan[1]*, Shivaji Jadhav[2], Megha Rai[2]

[1]Department of Chemistry, Doshi Vakil Arts and G.C.U.B. Science and Commerce College, Goregaon-Raigad, Maharashtra- India.

[2]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Navkhanda, Jublee Park, Aurangabad Maharashtra- India.

*Corresponding Author E-mail: **chemistryp141286@gmail.com**

ABSTRACT:

In the presence of $InCl_3$ as a catalyst one-pot ($4\pi+2\pi$) cycloaddition reaction of aromatic aldehydes, arylamines and DHF in ethanol proceeded smoothly to give tetrahydroquinoline derivatives (4a-4j) in excellent yields. Advantages of this method are shorter reaction time and biologically important.

KEYWORDS: Tetrahydroquinoline Derivatives, Aromatic Aldehyde, Povarov reaction and Reflux.

INTRODUCTION:

The Povarov (Diels-Alder) reaction is recognized as a grateful reaction for synthesis of natural and unnatural polycarbocycles and polyheterocycles products. Hence, the hetero Diels-Alder reactions path has been developed as the most impressive synthetic roots to construct the nitrogen containing six membered heterocycles[1-2].

In the recent years, (4+2) cycloaddition (Povarov) reaction of imine (diene) with dienophile has become efficient strategy for generation of six membered heterocycles [3-5].

In this reaction, the dienes are electron rich which means Schiff base (imine). It should be able to donate electrons, among the electron rich dienophiles like cyclopentadienes and cyclohexadienes[8], pyran[9], vinyl enol ether[10], etc., have been extensively used in (4+2) cycloaddition reactions.

Different imines we get from different aniline derivatives in presence of different acid catalysts like $FeCl_3$(II), $Yb(OTf)_3$, $TiCl_2$, BF_3.MeOH, $Al(OTf)_3$, $Sc(OTf)_3$ and phosphoric acid so as to form tetrahydroquinoline derivatives via different methods[11-17].

However, remaining literature, Schiff base is formed from (a amino naphthalene with aromatic aldehydes) and that diene smoothly cyclized with DHF (a dienophile) to give tetrahydroquinoline derivatives. This has not been reported yet. Thus, we have chosen α-amino naphthalene for Schiff base preparation, (4+2) cyclisation of Schiff base with DHF in the presence of $InCl_3$.

EXPERIMENTALPROCEDURE:

General:

All reactions were carried out by reflux assembly at 110°C temperature. ^1H NMR and ^{13}C NMR spectra were recorded at (Bruker) 400 MHz and 100 MHz in DMSO solvent under TMS as an internal standard. IR spectra were recorded on a Perkin-Elmer FT-IR Spectrometer. Melting points were measured manually. TLC was carried out by standard conversion aluminum plates. Melting points were measured manually.

Received on 13.11.2017 Modified on 03.12.2017
© AJRC All right reserved
Accepted on 02.01.2018
Asian J. Research Chem. 2018; 11(1):111-120.
DOI: 10.5958/0974-4150.2018.00024.X

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

CODEN [USA]: IAJPS ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

Available online at: http://www.iajps.com

Research Article

Rafiq Zakaria College for Women Aurangabad

SYNTHESIS OF SUBSTITUTED AZITIDINE DERIVATIVES VIA ONE POT THREE-COMPONENT (2Π+2Π) CYCLOADDITION REACTION UNDER ULTRASONIC IRRADIATION METHOD

Pravin Chavan[1]*, Shivaji Jadhav[2], Megha Rai[2]

[1] Department of Chemistry, Doshi Vakil Arts and G.C.U.B. Science and Commerce College, Goregaon-Raigad, (MS), India.

[2]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Navkhanda, Jublee Park, Aurangabad, (MS), India.

Abstract:

We have efficient and ecofriendly synthesis of N-(7-Ri-2-oxa-8-azabicyclo[4.2.0]octan-8-yl)isonicotinamide derivatives (IVa-n) via one pot three-component (2π+2π) cycloaddition reaction using isoniazide(I), Aromatic Aldehydes (IIa-n), DHP (III) and a Lewis acid (SnCl4) catalyst under Ultrasonic irradiation method. Advantages of this method are- one step reaction, mild conditions, short reaction time and good to excellent yields.

Keywords: *Cycloaddition reaction; Substituted azitidine; Aromatic Aldehyde; Ultrasound irradiation.*

*Corresponding Author:

Pravin Chavan,

Doshi Vakil Arts and G.C.U.B. Science and Commerce College, Goregaon, A/P. Goregaon, Tal. Mangaon, Dist. Raigad(MS) 402103.

e-mail : chemistryp14186@gmail.com

QR code

*Please cite this article in press as Pravin Chavan et al., **Synthesis of Substituted Azitidine Derivatives via One Pot Three-Component (2π+2π) Cycloaddition Reaction under Ultrasonic Irradiation Method**, Indo Am. J. P. Sci. 2018(Suppl); 05(01).*

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

259

Chemistry & Biology Interface, 2018, 8, 2, 128-134

RESEARCH PAPER

ISSN: 2249 –4820

CHEMISTRY & BIOLOGY INTERFACE

An official Journal of ISCB, Journal homepage: www.cbijournal.com

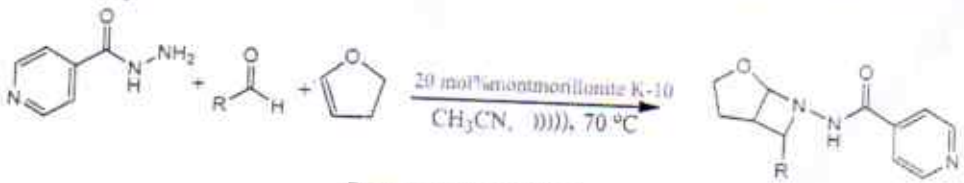
Dr. Rafiq Zakaria College for Women * Aurangabad *

Synthesis of isonicotinamide derivatives viaone pot three-component Cycloaddition Reaction

Pravin N. Chavan[1]*, Shivaji L. Jadhav[2], D.D. Kayande[3], Megha J. Rai[2]

[1]DoshiVakilCollege, Goregaon, District - Raigad,-402103, (MH) India.
[2]Dr. Rafiq Zakaria College for Women, Aurangabad - 431001, (MH) India.
[3]S.B.E.S College, Aurangabad - 431001, (MH) India.
Email: chemistryp141286@gmail.com, drmegha08@gmail.com
Received 5 March 2018; Accepted 14 April 2018

Abstract: Herein we report a synthesisof N-(7-R)-2-oxa-6-azabicyclo[3.2.0]heptan-6-yl)isonicotinamide derivatives **4(a-n)**from isoniazide (**1**), aromatic aldehyde**2(a-n)** and 2,3-dihydrofuran (**3**), by novel methodology in which, one pot three-component [2π+2π] cycloaddition reaction were carried out in the presence of Montmorillonite K-10 (green) catalyst under ultrasonic irradiation and targeted compounds were isolated in good to excellent yields.



R= Aromatic aldehydes

Keywords: Cycloaddition, Substituted azitidine, Aromatic Aldehydes, Montmorillonite K-10 and Ultra-sound irradiation.

Introduction:

Now-a-days cycloaddition reactions are a center of heterocyclic synthesis due to its unique properties of cyclic ring formation in single step **[1-2]**. Azetidineis one of the most important heterocycles exhibits wide spectrum of biological and pharmaceutical properties such as Antitubercular **[3]** Antimicrobial **[4-6]**, Cardiovascular **[7]**, Anti-inflammatory**[8]**, and Anticonvulsant**[9]**. Cycloaddition reactions like [4π+2π] and [2π+2π] using green catalysts have been extensively studied in the last decades as the most straight forward approach for the

ASSISTANT PROFESSOR
Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Study of Sodium, Potassium and Fluoride elements present in water sample collected from Shivana River.

Pravin Chavan[1]*, Megha Rai[2], and Shivaji Jadhav[2].

[1]Department of Chemistry, M.T.E.S. DoshiVakil Arts & G.C.U.B. Science & Commerce College, Goregaon- Raigad(M.S.) India.
[2]Department of Chemistry, Dr. RafiqZakaria College for Woman, Navkhanda, Jublee Park, Aurangabad (MS)

ABSTRACT

Sodium and Potassium metal salts present in water absorb energy from flame and emit the light of characteristic wavelength. This is observed by change in intensity of color. Here the energy absorbed was enough to vaporize alkali metal salt. In our study, determination of sodium and potassium in Shivana river water sample was analyzed by calibration curve method using flame photometer.Physical and chemical parameters like temperature, pH and fluoride content in same water sample were also as well as determined. Fluoride ion is measured by color comparator.

Keywords: Water quality, River water, fluoride, Sodium, Potassium, Fluoride kit and Flame photometry.

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

*Corresponding author

2017 - 2018

Contents lists available at

Asian Pacific Journal of Tropical Biomedicine

journal homepage:



Original article

Supercritical carbon dioxide extraction of *Triognella foenum graecum* Linn seeds: Determination of bioactive compounds and pharmacological analysis

Ola Basa'ar[1,2*], Samreen Fatema[2], Ali Alrabie[3], Mohammed Mohsin[2], Mazahar Farooqui[2]

[1]*Department of Chemistry, Hodeidah University, Al-Hodeidah, Yemen*

[2]*Post Graduate & Research Center, Maulana Azad College, Aurangabad, India*

[3]*Dr. Rafiq Zakaria College for women, Aurangabad, India*

Dr. Rafiq Zakaria College for Women * Aurangabad

ARTICLE INFO

Article history:
Received 16 Sep 2017
Received in revised form 2 Oct 2017
Accepted 27 Oct 2017
Available online 3 Nov 2017

Keywords:
Anti-bacterial
Anti-fungal
Anti-malarial
Anti-tuberculosis
Sc–CO_2 extraction
Triognella foenum graecum Linn

ABSTRACT

Objective: To investigate the effect of temperature and pressure on supercritical CO_2 extraction of *Triognella foenum graecum* Linn seeds, to determine the optimal condition which leads to highest percentage of the accumulative yield and revealing the chemical composition of supercritical CO_2 extract.

Methods: Temperatures in the range of 40–60 °C and pressures in the range of 10–25 MPa were used. FTIR and GC–MS analysis were used to detect the bioactive compounds present in the extract. The broth dilution method and slope method were used to evaluate the anti-microbial and anti-tuberculosis activities and the *in vitro* anti-malarial assay was carried out according to the micro assay protocol of Rieckmann and his co-workers.

Results: The temperature was more affected than the pressure on the extraction performance and the highest yield of the extract (3.111%) was attained at 60 °C and 10 MPa. FTIR and GC–MS showed that the chemical composition of the extract included conjugated linoleic acid methyl ester as the major active principle (with concentration of 72.28%), followed by saturated fatty acid methyl esters (16.03%), steroids (8.09%) and organic siloxane compound (3.61%). The extract showed moderate anti-bacterial activity with MIC values 100, 250, 125 μg/mL towards *Escherichia coli*, *Staphylococcus aureus* and *Streptococcus pyogenus* respectively. It exhibited high inhibition effect towards the fungi *Candida albican* with MFC value (250 μg/mL). The extract had low anti-tuberculosis activity with MIC value (100 μg/mL) and comparable MIC value (0.29 μg/mL) towards *Plasmodium flaciparum*.

Conclusions: Supercritical CO_2 extraction as alternate and green technology is performed successfully to extract the bioactive compounds from the seeds of *T. foenum graecum* Linn and it is concluded that this extract can be used as an alternate source of synthetic anti-biotic drugs.

1. Introduction

Natural products have been considered as an essential source of drugs and pharmaceutical products. The practice of herbal medicine is established and documented in Asia and most medicinal plants that have been known come from China and India. A huge number of new anti-biotics over the last three decades have been synthesized by the pharmaceutical industry. However, the resistance to them by microorganism has increased [1]. Recently, the studies turned towards the plants to extract a convenient and an effective anti-microbial drug. The use of plant extract has achieved a considerable significance in therapeutic treatments and may help to cure the problems of these multi-drug resistant organisms. *Triognella foenum graecum* Linn (*T. foenum graecum* L.) belongs to Fabaceae family with the height of 30–60 cm. It has compound pinnate, trifoliate leaves, axillary white to yellow flowers with 13–15 cm long. The

*Corresponding author: Ola Basa'ar, Department of Chemistry, Hodeidah University, Al-Hodeidah, Yemen; Post Graduate & Research Center, Maulana Azad College, Aurangabad, India.
Tel: +91 9823235210
E-mail: olabasaar2011@gmail.com (O. Basa'ar)

Peer review under responsibility of Hainan Medical University. The journal implements double-blind peer review practiced by specially invited international editorial board members.

2221-1691/Copyright © 2017 Hainan Medical University. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD.

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women

(2561)
17-18

Heterocyclic Letters
Vol. 7| No.4|1027-1034|Aug-Oct|2017
ISSN : (print) 2231–3087 / (online) 2230-9632
CODEN: HLEEAI
http://heteroletters.org

Dr. Rafiq Zakaria College for Women ★ Aurangabad

THREE-COMPONENT ONE POT CYCLOADDITION REACTION USING PIPERIDINE CATALYST UNDER CONVENTIONAL / ULTRASONIC TECHNIQUES

Pravin Chavan[a]*, Shivaji Jadhav[b], D.D.Kayande[c], Megha Rai[b]

[a] *Department of Chemistry, Doshi Vakil Arts and G.C.U.B. Science and Commerce College, Goregaon-Raigad, Maharashtra- India ; Email id: chemistryp141286@gmail.com*
[b] *Department of Chemistry, Dr. Rafiq Zakaria College for Woman, Navkhanda, Jublee Park, Aurangabad Maharashtra- India.*
[c] *S.B.E.S college, Aurangabad, Maharashtra- India*

Abstract-New substituted N-(2,4-dioxo-3-oxa-6-azabicyclo[3.2.0]heptan-6-yl)isonicotinamide derivatives bearing isoniazid moieties have been successfully and conveniently synthesized through efficient three component one pot ($2\pi+2\pi$) cycloaddition reaction with isonicotinic acid hydrazide **(1)** as starting materials. Design and preparation of N-(2,4-dioxo-3-oxa-6-azabicyclo[3.2.0]heptan-6-yl)isonicotinamide derivatives **4(a-m)** was carried out by the condensation of isoniazid **(1)** with aromatic aldehyde **2(a-m)**, base catalyzed one pot cyclo-addition of isoniazid Schiff base with maleic anhydride **(3)**. Piperidine plays the important role of base catalyst to carry out 2+2 cycloaddition to get moderate to significant yields under ultrasonic irradiation. In the present study a novel series of **4(a-m)** were synthesized and characterized by IR, 1HNMR, 13CNMR, spectral analysis. The synthetic details and characterization results are discussed.

Keywords: Piperidine, one pot, 2+2 Cycloaddition reaction, Ultra-sound irradiation

Introduction

One pot multicomponents reactions allow the construction of several new bonds. Multi-components reactions are very important role play in organic synthesis and their methods provide significant benefits over conventional synthesis [1]. Several benefits are- high degree of atom economy, easier reactions progress, reduced the reaction time, energy saving, environmental friendly, and less produces low waste are also most important [2,3]. With the conception in mind, our continuous research focuses on new strategies for nitrogen containing four member rings in moderate condition. Azitidine ring is one of the important class of heterocycles found in many natural products and thereby the structure can exhibit an array of biology and pharmaceutical activities [4].

ASSISTANT PROFESSOR
Rafiq Zakaria College for Woman
Navkhanda, Jubilee Park, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

www.ijcps.org

IJCPS Vol. 7, Special Issue
ICAFM - March 2018

ISSN:2319-6602
International Journal of Chemical and Physical Sciences

Synthesis of Substituted Pyrimidine Derivatives by using $InCl_3$ Catalyst via One Pot Multi-component Reaction

P. CHAVAN[1]*, A. GHOTI[1], S. JADHAV[2], M. RAI[2],

[1]Department of Chemistry, Doshi Vakil College, Goregaon-Raigad (MS), India.
[2]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (MS), India.
*Corresponding Author Email: chemistryp141286@gmail.com

Abstract

*A synthesis of substituted pyrimidine derivatives (4-amino-2-(R)-1,2-dihydroxybenzo[4,5]imidazo[1,2-a]pyrimidine-3-carbonitrile)(**4a-j**) through one flask containing three component mixture- benzamidazole (**1**), aromatic aldehyde (**2a-j**), malononitrile (**3**) by using $InCl_3$ (Lewis acid) catalyst under methanol solvent and reflux at 110°C. This method provides good to excellent yield and simple work procedure.*

Dr. Rafiq Zakaria College for Women Aurangabad

Keywords: One pot multi-component reaction, aromatic aldehyde, substituted pyrimidine derivatives and reflux.

INTRODUCTION

A one flask containing multi-component reaction method has been extensively used for the synthesis of natural products [1-4]. Nitrogen containing heterocyclic compounds is very important role play in the medicinal field [5] like antimicrobial, antifungal, etc. properties [6-7]. Recently, number of methods has been discovered for the synthesis of Nitrogen containing heterocyclic compounds [8-9]. However, some of the methods suffer from limitations such as multi-component reaction, wastage of product, long reaction time, and satisfactory yields. A literature survey revealed that, one pot multi-component reactions rarely explored through Lewis acid catalyst.

By considering above fact, we have focused on synthesis of 4-amino-2-(R)-1,2-dihydroxybenzo[4,5]imidazo[1,2-*a*]pyrimidine-3-carbonitrile derivatives(**4a-j**) by using Lewis acid catalyzed one pot containing three component like benzamidazole (**1**), aromatic aldehyde (**2a-j**), malononitrile (**3**) in methanol solvent under refluxing condition.

EXPERIMENTAL SECTION

General experimental information: The melting points were recorded manually (incorrect). 1H NMR and 13C NMR spectra were recorded at (Bruker) 400 MHz and 100 MHz in DMSO solvent using TMS internal standard. IR spectra were determined by Perkin-Elmer FT-IR Spectrometer. All AR grade reagents were used for synthesis.

General procedure for synthesis of 4-amino-2-(R)-1,2-dihydroxybenzo[4,5]imidazo[1,2-a]pyrimidine-3-carbonitrile derivatives (4) : A 100 ml Round Bottom flask were charged with benzamidazole (**1**) (0.1 mol), aromatic aldehyde (**2a-j**) (0.1 mol), malononitrile (**3**) (0.1 mol), and $InCl_3$ (10 mol %) catalyst in 6 ml methanol. The mixture was reflux in water bath using 110°C and reaction progress was assessed on TLC plate by using ethyl acetate and cyclohexane (5:5) as TLC solvent. After the completion of reaction, round bottom flask containing mixture (filtered through G1 sintered crucible and crude product) were purified by recrystallization from ethanol to afford the pure products (**4a-j**).

4-amino-2-(4-hydroxyphenyl)-1,2-dihydroxybenzo[4,5]imidazo[1,2-a]pyrimidine-3-carbonitrile(4a)

Brownish crystals, m.p. 210-213°C, FTIR (KBr cm^{-1}): 3250, 2922, 2180, 1153, ^1H NMR 400 MHz, DMSO) δ 9.18 (s, 2H, D_2O exchangeable NH_2), 7.69 (m, 2H,Ar), 7.35 (m, 2H,Ar), 7.03-7.17 (m, 2H, Ar),

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

17718

(265)

ONE - POT, MULTI COMPONENT SEQUENTIAL SYNTHESIS OF HEXAHYDROQUINOLINE DERIVATIVES UNDER ULTRASONIC IRRADIATION IN SOLVENT FREE MEDIUM

SHIVAJI JADHAV[a], PRAVIN CHAVAN[b], AND MEGHA RAI[c].

a. Department of Chemistry, Kohinoor College, Khultabad, Aurangabad 431001, MH, India.
b. Department of Chemistry, Doshi Vakil Arts and G.C.U.B. Science and Commerce College, Goregaon, Raigad MH, India.
c. Department of Chemistry, Dr.Rafiq Zakaria College for Women, Aurangabad 431001, MH, India.
E-mail ID: drmegha08@gmail.com, drshivaji1985@gmail.com

Rafiq Zakaria College for Women * Aurangabad *

ABSTRACT: An efficient one pot sequential multi-component reactions for the synthesis of hexahydroquinoline derivatives **5(a-h)** in aqueous medium via enaminone intermediate was successfully developed under ultrasound irradiation. The overall progress of reaction was monitored by TLC and formation of compound **5(a-h)** was confirmed by physical constants and spectroscopic studies. Compared with traditional method, this method is more convenient and reaction can be carried out in higher yield, shorter reaction time and milder condition, greener approach by using water as solvent without generation of pollution, safer to analyst and a simple working procedure. From these features present methods can be correlated for safer and efficient synthesis of other products.

Keywords: Multi-component reactions, aqueous media, Tandem reaction, Michael addition and Ultrasonic irradiation.

INTRODUCTION:

Multi-component reactions (MCRs) have been designed to produce elaborate biologically active compounds and have becomes an important roles in organic research, medical field etc. [1-3]. Furthermore, MCRs are reduced reaction time, efforts and expensive purification process besides protection and deprotection [4-5]. Now-a-days, aqueous mediated reactions have received considerable attention in organic synthesis due to environmental safety reasons which avoid the generation of hazardous effluent during the synthesis. Water is having high polarity, high reactivity and non-toxic property. It has specific effects on reaction arising from inter and intramolecular non covalent interaction leading to novel solvation [6].

Nitrogen containing heterocyclic compounds are widespread in natural products and medical fields, and their applications in biologically active pharmaceuticals, agrochemicals, and functional materials are becoming more and more important [7]. Recently, 1, 4-DHP nucleus containing drugs nimodipine, lacidipine possess improved calcium channel antagonist activity [8,9] and the cardiovascular agents for examples nicardipine, and amlodipine are effective against treatment of hypertension [10].

Hantzsch and Liebigs reported the synthesis of 1,4-dihyropyridine by traditional method which involved cyclo-condensation of aldehyde with ethyl acetoacetate and ammonia reflux in alcohol or in acetic acid for a prolonged time [11]. According to review of literature survey, synthesis of quinolone derivatives can be made from possible organo catalysts [12], ionic liquids [13], $Sc(OTf)_3$ [14], microwave irradiation[15], $Yb(OTf)_3$ [16],etc. Recently Patil, D and co-workers carried out the sequential synthesis of hexahydroquinoline derivatives in aqueous media under reflux condition [17]. Also a number of improved methods have been reported in the literatures for the synthesis of this heterocyclic system [18].

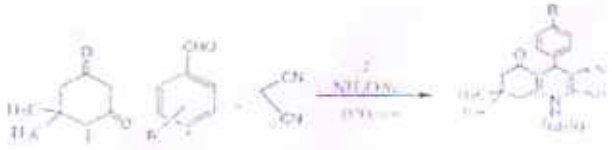
However, most of the methodologies suffer from long time reactions, low yields, toxic chemicals and use of organic solvents. In recent time, ultrasound irradiation method has been mostly used in organic synthesis. A large number of organic reactions can be carried out in a higher yield, shorter time under milder reaction conditions, compared with traditional methods. This method is more convenient and can easily controlled [19]. Nevertheless, the use of ultrasound in heterocyclic systems has not been fully explored. As a consequence of our interest in the synthesis of heterocyclic compounds under ultrasound irradiation [20], we report herein as an eco-friendly and highly efficient protocol for Tandem synthesis of hexahydroquinoline derivatives via MCRs in aqueous media under ultrasound irradiation.

MATERIALS AND METHODS :

2.1. General information: Melting points were determined in open capillary tube and were found uncorrected. The progress reactions were monitored by TLC [(ethyl acetate: n-hexane (3:7)]. The purity of test compounds were determined by TLC on precoated SiO_2 gel (HF2s4 200 mesh) Aluminium plates (E-Merck). A single spot is obtained on TLC confirmed the purity of substituted hexahydroquinoline and yield is calculated (w/w).

2.2. Experimental procedure: 5,5-dimethylcyclohexane-1,3-dione (1 mmol) with excess amount of ammonium acetate (2 mmol) in water (10 mL) were taken in 100 mL beaker. Then the reaction mixture was irradiated on ultrasonicator (Sr. No. 128, 5.5 L, 230 V, 50 Hz) at 70°C for approximately 25- 30 minute. To this, malononitrile (1mmol) and aryl aldehyde (1 mmol) were added and whole mixture was irradiated at 70°C for 25- 35 minutes. The reaction mixture was cooled at room temperature, filtered, recrystallized using ethanol which gives the desired product 5(a-h).

Scheme 1: Synthesis of hexahydroquinoline derivatives from Tandem reaction.



ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

International Journal of Universal Print
ISSN: 2454-7263 ID: ACTRA 2018 076 Published Mar. 2018
Volume No. 04, Issue No.08, Copyright © Universal Print
Web: www.universalprint.org , Email: ijup@universalprint.org
Title Key: Mixed Metal Complexation study of ...

Mixed Metal Complexation study of Transition series with Thiourea and Alanine

D.D.Kayande[1], Shivaji Jadhav[2*], Megha Rai[3]

1. S.B.E.S. College, Aurangabad.
2. TaraiArts and Science College,Paithan, Aurangabad,
3. Dr. Rafiq Zakaria College for Women, Aurangabad (M.S), India.
*E-mail: dr.shivaji1985@gmail.com

Dr. Rafiq Zakaria College for Women Aurangabad

Abstract: Mixed metal complexation study of transition metal ions of some transition metals like Fe(II), Co(II), Ni(II), Cu(II) and Zn(II) with Thiourea as secondary ligand whereas Alanine as primary ligand has been evaluated by the potentiometric technique at 25±0.1°C and 0.1M (NaClO4) ionic strength.The protonation constants of the ligand were calculated from the potentiometric pH titrations data of solutions according to Irving and Rossetti's method.

Keywords: Stability constant, Thiourea, amino acids, pH metry, mixed ligand complexes

Introduction: Pharmacologically active compounds contend various functional groups in its structure, which is able to bind metal ions present in living organisms. Mixed Metal complexes of biomolecule are found to be more effective than originalbiomolecule. Many researchers attracts towards mixed metal complexation study of pharmacologically active compounds due to its application in medicinal study. Mixed metal complexation of medicinal drugs play vital role in the bio - chemical activity[1-3]. It is used in different areas, such as biological processes, pharmaceuticals, separation techniques, analytical processes etc.

Amino acids are the structural unit of proteins. These are essential constituents of all living cells and contain one or more amino and carboxylic groups and have good coordination sites for the metal complexation. Thiourea is an organosulphur compound used as reagent in organic synthesis whereas its derivatives are used as organocatalyst. So in present study we had planned and executed metal complexation study of Thiourea and alaninewithtransitionmetalions.

In the present investigation the formation and stability of ternary mixed metal complexes containing Thiourea (N.S) donor secondary ligands with alanine (N,O-)Donor primary ligands (fig.1) are reported at 25±0.10C in 0.1 M (NaClO4). The effect of the substituent on the dissociation constants, and on the stability & formation ofthe binary and ternary complexes have been evaluated by comparing the relevant data for systems containing determined under identical experimental conditions.

Dr. Megha Rai
Dept. of Chemistry
Dr. Rafiq Zakaria College For Women
Jubilee Park, Aurangabad - 431001.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

International Journal of Universal Print
ISSN: 2454-7263 ID: ACTRA 2018 008 Published Mar. 2018
Volume No. 04, Issue No.01, Copyright © Universal Print
Web: www.universalprint.org , Email: ijup@universalprint.org
Title Key: Extraction of Pd(II) and its ...

Extraction of Pd(II) and its spectrophotometric determination

Uzma Parveen K. Shaikh[1*] Aayesha Nuzhat Durrani[1]

[1*]Dr.Rafique Zakaria College for Woman, Navkhanda, Aurangabad M.S. India

Abstract:

The extraction of Pd(II) metal from hydrochloric acid media using 4-(4-dimethylaminobenzylideneimino)-5-methyl-4*H*-1, 2, 4-triazole-3-thiol(DMABIMTT) in chloroform was studied. The optimum conditions have been determined by making a critical study of acid, metal ion and extractant concentration, period of equilibration, pH, various diluents and stripping agents. The effect of diverse ions on the quantitative extraction of Pd(II) has also been studied. The proposed method was further applied for the separation of Pd(II) from binary mixtures, synthetic mixtures, alloys and commercially available samples.Extraction of Pd(II) with DMABIMTTfrom hydrochloric acid media.

Introduction:

The recovery of precious metals is a challenging task for chemists.The name precious metals include the six elements of the platinum group: Ru, Rh, Pt, Pd, Os, and Ir, together with Au and Ag. In the past few decades precious metalshave found new applications outside the jewellery and decorative industries due to its excellent physical and chemical properties. Due to their wide applications and scarcity different separation techniques have been developed to separate and recover PGM's from primary and secondary sources.

Solvent extraction is one of the most efficient, and widely used separation method than other because ofspeed, ease/simple to operate, ability to combine with different detection techniques, selectivity towards specified metal[1-4].

Thus, the objective of the present article is to extract the trace amount of Pd(II) with a newly synthesized sulphur containing ligand. Efforts have been made to recover Pd(II) from real samples, synthetic mixtures and alloys. Moreover, the effect of acid concentration, reagent concentration, effect of time (shaking period), diluents, stripping agent and divers ions on Pd(II) extraction has also been studied.

1. Experimental

1.1 General Procedure:

An aqueous solution containing 100µg Pd(II) and enough hydrochloric acid

Dr. Rafiq Zakaria College for Women Aurangabad
PRINCIPAL Dr. Rafiq Zakaria College For Women Navkhanda, Jubilee Park, AURANGABAD. (M.S.)
Dr. Ayesha Durrani Head Dept. of Chemistry Dr. Rafiq Zakaria College For Women Navkhanda , Aurangabad (M.S.)

2017-2018

THOMSON REUTERS

ISSN: 2277-9655
Impact Factor: 4.116
CODEN: IJESS7

[illegible] et al., 6(9): September, 2017
Value: 3.00

IJESRT
INTERNATIONAL JOURNAL OF ENGINEERING SCIENCES & RESEARCH TECHNOLOGY

SIMULTANEOUS DETERMINATION OF PLATINUM GROUP METALS USING SULPHUR CONTAINING EXTRACTANT

Uzma Parveen K. Shaikh

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad (431004) M.S. India

Dr. Rafiq Zakaria College for Women * Aurangabad *

ABSTRACT

A simple and rapid solvent extraction separation of platinum group metals were studied involving complexation of these metals with 4-(4-ethoxybenzylideneamino)-5- methyl-4H-1,2,4-triazole-3-thiol (EBIMTT) sulphur containing extractant. The extraction was fast with short shaking time (30s). The results obtained showed that the average recovery of these metals from an aqueous solution containing 100µg/ml of mixture analyte was 96-98%. The method is effectively applicable for the separation of platinum group metals from synthetic mixtures.

I. INTRODUCTION

The liquid-liquid extraction technique has become increasingly popular in comparison with the other extraction methods because of its several major advantages, such as simple to operate, high pre-concentration factor, rapid phase separation and the ability to combine with different detection techniques. Hence it becomes one of the more exciting areas of analytical research amongst the other separation techniques [1-4]. Platinum group metals and gold play an important role in the world economy due to their unique inertness. This property leads to their labeling as "noble metals". These elements have paramount significance in technology, mainly these are used as metallic catalysts in automobiles to reduce air pollution and applicable for surgical appliances, electronic devices, and hydrogen storage materials. It is very difficult to fulfill the present demand of these elements just based on natural resources, hence secondary resources should be tackled to meet the present requirement. However, the most important factor in the solvent extraction of metals is the selectivity of the extractant towards the specified metal ion to be recovered. The comparative ease of stripping of the complexes from the organic phase can be achieved by fully exploiting the differences in the reactivity of metals to extractant and back into the aqueous phase by stripping reagents. In the present work, extraction of rhodium (III), ruthenium (III), and their separation from other metals using 4-(4-ethoxybenzylideneamino)-5- methyl-4H-1,2,4-triazole-3-thiol (EBIMTT) from hydrochloric acid media were investigated. The experiments which were carried out indicated that the efficient extraction of PGMs and their separation from different metals could be understood by controlling the extractant and acid concentration. Optimization of equilibrium conditions including pH of aqueous phase, acid concentration in aqueous phase, concentration of EBIMTT, solvents and equilibrium time were performed. We have also studied the stripping of PGMs from organic phase which confirms the selectivity. However, we have found that the use of EBIMTT as extractant not only enhanced the extraction efficiency but also increased the selectivity in the presence of other metals in comparison to existing methods. Due to greater selectively of sulphur containing extractants towards the noble metals, a number of sulphur containing extractants have been reported in the literature [5-10], but variety of sulphur containing reagents was still limited. Therefore, we have preferred the sulphur containing ligands for the extraction of platinum group metals.

II. MATERIAL AND METHODS

Glass wares used were made up of pyrex and corning glass. The burette, pipette, and standard flask were calibrated in accordance with the method described by Vogel [11]. For the measurement of pH an Elico digital pH meter model LI-120 (± 0.01) was used throught the work.

All measurements of absorption spectra were made on the JASCO V-530 UV-Vis spectrophotometer with 1 cm quartz cells. The calibration of spectrophotometer was checked by measuring absorption spectrum of solution of potassium permanganate in 1M sulphuric acid. All the chemicals used were of A.R. grade. Double distilled water was invariably used the measurements. It was prepared by distilling water in all glass apparatus containing alkaline potassium permanganate.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASSISTANT PROFESSOR
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

53

Add Kaelwa Hoq

Chemistry & Biology Interface, 2018, 8, 5, 255-268

RESEARCH PAPER

ISSN: 2249 –4820

Dr. Rafiq Zakaria College for Women * Aurangabad *

CHEMISTRY & BIOLOGY INTERFACE

An official Journal of ISCB, Journal homepage; www.cbijournal.com

Lemon juice catalyzed efficient one-pot synthesis, antioxidant and antimicrobial evaluation of bispyrazolyl methanes

Furqan Diwan,[a] Mohammad Shaikh,[b] Mazahar Farooqui*[a]

[a]*Department of Chemistry, Dr. Rafiq Zakaria, college for women, Aurangabad- 431001, India.*
[b]*Department of Chemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431 004, India*
*Corresponding author. Tel:+919422214785
E-mail:* mazahar_64@rediffmail.com; diwanfurqan@rediffmail.com*
Received 18 May 2018; Accepted 3 August 2018

Abstract: A multicomponent one potnovel efficient and green protocol for the synthesis of a series of bis-pyrazolylmethanesas a potential antimicrobial and antioxidant agents*via* one-pot multi-component condensation of aldehydes, ethyl acetoacetate and phenyl hydrazine using lemon juice as an efficient and eco-friendly catalyst.Compared to other methods, the advantageous features of this methodologyare environmentally friendly and operational simplicity, including excellent yields, short reaction time, mild reaction conditions and environmentally benign catalyst. The synthesized bis-pyrazolylmethanes were evaluated for antimicrobial and antioxidant activity and also analyzed for ADME properties.

Keywords: Multicomponent, Green catalyst, Lemon juice,Antioxidant, Antimicrobial, ADME.

Introduction

Combinatorial chemistry is extensively useful for the discovery of novel biologically active compounds [1]. In this framework, multicomponent reactions (MCRs) are an effective tool in the current drug discovery process in terms of lead finding and optimization, but the range of easily accessible and functionalized small heterocycles is rather limited [2]. These strategies have emerged as flexible approaches in organic synthesis due to their advantages over the conventional multistep synthesis. In addition, they are ecofriendly, have superior atom economy, require less time and low-cost purification processes and without protection-deprotection steps. Therefore, the design and development of novel, efficient and green MCRs focused on a target product is one of the most important challenges in organic synthesis.

Pyrazole and its derivatives have drawn considerable attention of the researchers in the

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH

INNOVARE ACADEMIC SCIENCES
Knowledge to Innovation

Online - 2455-3891
Print - 0974-2441

Vol 12, Issue 2, 2019

Research Article

GAS CHROMATOGRAPHY-MASS SPECTROSCOPIC ANALYSIS OF BLACK PLUM SEED (*SYZYGIUM CUMINI*) EXTRACT IN HEXANE

ABDUL JALEEL A H[1]*, JINAN F MAHDI[2], MAZHAR FAROOQUI[3], SHAIKH Y H[4]*

[1]Department of Physics and Electronics, Maulana Azad College of Arts, Science and Commerce, Aurangabad, Maharashtra, India. [2]Department of Medical Instruments, Techniques College of Electrical and Electronic Engineering, Techniques Middle Technical University, Baghdad, Iraq. [3]Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India. [4]Department of Physics and Electronics, Shivaji College, Kannad, Aurangabad, Maharashtra, India. Email: shaikhyh@gmail.com

Received: 07 September 2018, Revised and Accepted: 18 October 2018

ABSTRACT

Objective: Black plum seed has unique medicinal value and used as antidiabetics, antibacterial, and anti-inflammatory.

Methods: Gas chromatography-mass spectrometry (GC-MS) analysis of the extracts of black plum seed obtained using solvent extraction with hexane as a solvent is used to attempt the identification of prominent components.

Results: Black plum seed extract is obtained by solvent extraction technique using Soxhlet extractor. A total of 10 compounds are predicted in black plum seed extract by GC-MS analysis.

Conclusion: The work presented relates to the study of GC-MS analysis of the extract of black plum seed obtained using solvent extraction with hexane as a solvent. Of ten compounds of black plum seed extract, five compounds are known to have antimicrobial properties.

Keywords: Gas chromatography-mass spectrometry, Black plum, *Syzygium cumini*, Seed extract.

© 2019 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/) DOI: http://dx.doi.org/10.22159/ajpcr.2019.v12i2.29396

INTRODUCTION

Black plum's scientific name is *Syzygium cumini*, in India, and it is commonly known as Jamun. The tree is a commonly present in India and other tropical and subtropical regions of the world. Black plum tree has a great economic value because most of the parts of the tree such as the fruit, leaves, bark, and seeds are used as medicine to treat various diseases. For example, it is used to manage the blood sugar level in the patients suffering from diabetes. There are reports of study conducted to study the effects of various concentrations (0.0, 1.56, 3.125, 6.25, 12.5, 25, 50, and 100 µg/ml) of the leaf extract of *S. cumini* Linn or *Eugenia cumini* (black plum, Jamun, family: Myrtaceae) on the alteration in the radiation-induced micronuclei formation in the cultured human peripheral blood lymphocytes [1].

Analysis of the antioxidant activity of the fruit skin of black plum fruit is reported using different assays, such as hydroxyl radical-scavenging assay, based on the benzoic acid hydroxylation method, superoxide radical-scavenging assay, based on photochemical reduction of nitroblue tetrazolium (NBT) in the presence of a riboflavin-light-NBT system [2]. Characterization and evaluation of anthocyanin pigments from Syzygium cumini fruit peels for their antioxidant efficacy, and stability is also reported[3], and the study identified three anthocyanins as gluco glucosides of delphinidin, petunidin, and malvidin by high-performance liquid chromatography (HPLC)-ESI-MS. GC-MS technique is on of the effective technique in study related to medicinal properties and antibacterial properties of herbal extracts[4]. For the extraction of volatile components from the Black Plum fruits, modified Likens and Nickerson apparatus can be used, the analysis of volatile compounds by GC-MS, showed the presence of 30 compounds [5]. There are studies conducted to deal with the downstream processing of anthocyanins from black plum (*S. cumini* L.) to obtain anthocyanins in a purified form [6], this study includes adsorption employing six different adsorbents, and among these, Amberlite XAD7HP showed the highest adsorption capacity (1.07 mg/mL of adsorbent) and desorption ratio (87.62%).

Chemoprotective activity of black plum seed extract against *in vivo* oxidative stress and genomic is also established [7]. There are studies, showing that black plum seed extract can possibly play a vital role as a chemopreventive agent against oxidative stress and genomic damage [7]. Black plum seed kernel extracts exhibit the inhibition of α-glucosidase from mammalian (rat intestine), bacterial (*Bacillus stearothermophilus*), and yeast (*Saccharomyces cerevisiae*, Baker's yeast). The *in vitro* studies using the mammalian α-glucosidase from rat intestine indicated the extracts to be more effective in inhibiting maltase when compared to the acarbose control [8], and other techniques such as HPLC and nuclear magnetic resonance are also useful in the identification of constituents of extract [9].

In recent times, we used supercritical fluid extraction technology (instrument name: SFC L-tex Japan) to extract the compounds from various biological materials such as plants and animals, performed GC-MS analysis of oil extracted for freshwater crab, and also analyzed fatty acid composition of some animals [10-16].

METHODS

Black plum seed powder is purchased from local market of Aurangabad city, Maharashtra, India. Black plum seed powder is subjected to Soxhlet extraction process using hexane as a solvent to obtain black palm seed extract.

GC-MS is a unique method for the analysis and measures the quantity of organic volatile and semi-volatile compounds. GS is employed to separate mixtures into individual components employing a temperature-controlled capillary column. MS is applied to recognize a variety of components from their mass spectra. In the present study, black plum seed powder is used for extraction and analysis to study the constituents. Black plum seed extract is extracted by solvent extraction

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

IAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH

INNOVARE ACADEMIC SCIENCES
Knowledge to Innovation

Vol 12, Issue 4, 2019

Online - 2455-3891
Print - 0974-2441

Research Article

GAS CHROMATOGRAPHY - MASS SPECTROMETRY ANALYSIS, INDUCTIVELY COUPLED PLASMA MASS SPECTROMETRY INVESTIGATION, AND ANTIMICROBIAL SCREENING OF *CAESALPINIA BONDUCELLA* (L.) ROXB SEED KERNEL

ALI ALRABIE, OLA BASA'A R, MAZAHAR FAROOQUI*

Department of Chemistry, Dr. Rafiq Zakaria College for Women, Aurangabad, Maharashtra, India. Email: mazahar_64@rediffmail.com

Received: 15 January 2019, Revised and Accepted: 20 March 2019

ABSTRACT

Objective: The objective of this study was to determine heavy metals using inductively coupled plasma mass spectrometry (ICP-MS) and phytochemical constituents of methanol extract of *Caesalpinia bonducella* seed kernel using gas chromatography - mass spectrometry (GC-MS).

Methods: In GC-MS investigation, 95% methanol extract of *C. bonducella* seed kernel was performed on JEOL GC MATE II, column HP 5 MS, and Quadruple, double-focusing mass analyzer. Determination of heavy metals from *C. bonducella* powder was performed using Thermo scientific I CAP Q instrument, for plant powder digestion Anton Paar Microwave model: Multiwave 300 was used. Antimicrobial activity was evaluated using microdilutions broth method.

Results: GC-MS analysis of methanol extract of *C. bonducella* seed kernel has shown 11 different phytoconstituents. ICP-MS analysis has shown the concentration of ten heavy metals in *C. bonducella* seed kernel as follows: Cr 1.5 ppm, Fe 72.72 ppm, Co 0.33 ppm, Ni 3.03 ppm, Cu 10.73 ppm, Zn 18.44 ppm, As 0.03 ppm, Cd 0.02 ppm, and Pb 0.58 ppm.

Conclusion: Result showed that the plant is safe to use from toxic heavy metals such as As, Cd, and Pb. It is suitable to check frequently the heavy metal content in the plant used in traditional medicines before given to patients.

Keywords: Heavy metals, *Caesalpinia bonducella*, Inductively coupled plasma mass spectrometry, Gas chromatography - mass spectrometry.

© 2019 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/) DOI: http://dx.doi.org/10.22159/ajpcr.2019.v12i4.32067

INTRODUCTION

Medicinal plants have been used for the treatment of various diseases from ancient time and have been playing an important role in the discovery of the modern day medicines with novel chemical constituents [1]. In the U.S.A., about 8% of hospital admissions are due to side effects of synthetic drugs [2]. Nowadays, the use of herbal medicines for the treatment of various diseases expands continuously because people believe that herbal medicines have no toxic effects and they are safe to use [3]. Medicinal plants contain both organic and inorganic constituents [4]. Heavy metals are those metals which have relative atomic number > Na and density > 5 g/cm^3 [5]. Plants need some of the heavy metals for their structural and biological functions such as Zn, Cu, Ni, Mn, Cr, and Fe; these elements are considered as essential trace elements [6] whereas toxic elements which have unknown biological role in the plant such as Cd, As, Hg, and Pb are toxic even at low concentration [7]. Heavy metals are present in medicinal plants in different concentrations, and these levels are influenced by several factors such as type of plant, the type of soil, the climate, and the type of agriculture [8]. The human body requires trace elements in very minute quantities to maintain good health, proper body functions, and development [9,10]. It gets translocated to human through the use of medicinal plants grown in contaminated environments, in which, soils, water, and air contain high concentration of heavy metals [11-14].

C. bonducella (L.) Roxb is belonging to the caesalpiniaceae [15], commonly known as Nata Karanja [16]. It is found throughout India and tropical countries in the world [17]. "Bonducella" is derived from the Arabic word "Bonduce" the meaning is "Little ball" [18]. There are several reports on phytochemical constituents of *C. bonducella* (L.) [17,19-21], but no work on metal constituents is reported earlier. The aim of this study is to determine heavy metals of *C. bonducella* (L.) Roxb seed kernel and to ensure its safe usage in herbal medicine.

METHODS

Collection of plant material: The *C. bonducella* seeds were purchased from local vendor at Aurangabad, India. It was authenticated by Dr. Narayan Panddhura, Department of Botany and Dr. B.A.M University – Aurangabad. Seeds were broken, and kernel from outer seed shell was separated.

Preparation of extract: Seed kernel of *C. bonducella* was ground to powder form and extracted with 95% methanol in a Soxhlet extractor for 6 h; further, the extract was filtered and concentrated on rotary vacuum evaporator. Sticky, white extract was kept in an amber bottle in refrigerator for further use.

GAS CHROMATOGRAPHY - MASS SPECTROMETRY (GC-MS)

GC-MS investigation of methanol extract of seed kernel of *C. bonducella* was carried out under the following conditions: Instrument name: JEOL GC MATE II, column HP 5 MS, and Injector T 220°C; carrier gas: High pure helium; flow rate: 1 ml/min, oven temperature 50–250 at 10°/min, and Ion chamber at 250°C.

ICP-MS

Microwave digestion

Plant powder digestion was carried out using Anton Paar Microwave model: Multiwave 300. Plant powder (0.1 g) was dissolved in 7 ml HNO_3 (37%, Merck) and 1 ml H_2O_2 (30%, Merck), and the vessel was immediately closed to avoid contamination. The sample was hold for 25 min., zero ramp time at 400 watts and then retained for 30 min., 5 ramp at 500 watts. After cooling, the vessel was opened, and the solutions were diluted to 100 ml with Milli Q water (Thermo scientific, Barnstead, smart 2 pure). The vessel was closed and shaken thoroughly to complete the dissolution.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

http://www.epitomejournals.com Vol. 4, Issue 4, April 2018, ISSN: 2395-6968

Epitome : International Journal of Multidisciplinary Research
ISSN : 2395-6968

Dr. Rafiq Zakaria College for Women Aurangabad

AN ALBUM : SCIENTIFIC TERMINOLOGY OF PLAN LEAF



Dr. Sumia Fatima

M.Sc., Ph.D., F.S.Sc., F.S.L.Sc.
Associate Prof. & Head, Botany
Dr. Rafiq Zakaria College for Women,
Aurangabad-431001 (MS)



Dr. Syed Zafar Javeed

M.Sc., Ph.D.
(Environmental Science)
Safety Manager
ENOC, Fujairah, UAE

ABSTRACT

There are two basic forms of leaf occur in flowering plants i.e. simple leaf & compound leaf. There is a great variation in colour, size, shape, texture, arrangement of leaf in vascular plants. A complete leaf is composed of a blade, petiole and stipules and in many plants one or more might be lacking or highly modified. During survey leaves of indigenous plants collected for study and described scientifically by following key proposed by V. N. Naik (1974). Scientific terminology of leaf presented in the form of images.

KEYWORDS

Scientific terminology, plant parts

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

 All rights reserved.

www.sjiopen.com

ISSN 1936-6264 (P); 1945-3019(O)

Dr. Rafiq Zakaria College for Women Aurangabad



Scientific Journal International

Ethno botanical Wild Plant Species of Pravara Basin from Ahmednagar districts, Maharashtra

***Arsule C S ** Sonawane B N and *** Sumia Fatima**

*New Arts, Com. and Science College Ahmednagar (M. S.)

* Shri Dnyaneshwar Mahavidayalya, Newasa, Dist. Ahmednagar (M. S.)

**Dr Rafiq Zakaria College for Women, Navkhanda, Jubilee Park, Aurangabad.

Received June 17, Accepted June 2, Published July 15 2017

Doi: 10.105373/1936-6264.18

Abstract

Present investigation is aimed at gathering information of ethno botanical wild plants species occurring in Pravara basin which have been ignored so far. Investigations of the remote areas where Pravara basin dwellers are reside for data collection, identification and documentation of the plant. Ethno botanical wild plants are among the important service providing to human. In this study, an ethno botanical survey of Pravara Basin from Ahmednagar districts, Maharashtra has been conducted through personal visit and interviews with key community members of the villages. The importance of cited ethno botanical species was then assessed based on the commercial value of plant species and their relationship to economic crops. The serve revealed that 57 plant species provide the local community with a breadth of different plant products. Medicinal species ranked highest contributing to 85.96. % of reported use followed by food and beverage (71.92%), social 29%, fire 26%, fodder (24%),cosmetic 17%, environmental uses (12%) and poisonous (3.5%). Based on their use-values Aegle marmelos, Ficus benghalensis, Azadirachta indica, Ficus religiosa, Mangifera indica, Zyzypus jujube, Emblica officinalis, Ficus glomerata, Terminalia bellerica, Terminalia chebula, were among the highest-ranking tree species. Whereas, Balanites roxburghii, Vitex negundo, Carissa carandus, Lawsonia alba, Jatropha curcas Annona squamosa, were at the forefront of shrubs species Ocimum americanum, Aloe vera and Abrus precatorius were among the herbaceous species and Asparagus racemosus, Acacia concina and Caesalpinia bondus were among the climbing species. Considering the commercial value and relationship to economic crops, the results demonstrated a list of 20 species of actual and potential high economic importance. Findings of this study clearly indicate that numerous wild plants of Paravara basin are still in use and hold high potentiality for economic development. Further studies to map and quantify the availability of these species and develop suitable methods for their propagation and production are necessary.

Keywords: Ethno botanical Importance; Wild plants; Pravara Basin, Ahmednagar districts

Dr. Sumia Fatima
Prof. & Head
Dept. of Botany
Dr. Rafiq Zakaria College For Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

http://www.epitomejournals.com, Vol. 3, Issue 7, September 2017, ISSN: 2395-6968

Epitome : International Journal of Multidisciplinary Research

ISSN : 2395-6968

Dr. Rafiq Zakaria College for Women Aurangabad

AN ETHNOBOTANICAL SURVEY OF MEDICINAL PLANTS USED BY THE GORBANJARA TRIBAL COMMUNITY INHIBITED IN AURANGABAD DISTRICT MAHARASHTRA





[1]SUMIA FATIMA,
Dr.Rafiq Zakaria College for Women,
Navkhanda Palace, Jubilee Park,
Aurangabad, (M.S.) India.

[2]JADHAV REENA GIRDHARILAL,
Govt. Ashram Jr. College, Nawapada,
Taluka.- Sakri,
Dist.- Dhule (M.S.) India.

ABSTRACT

The Aurangabad city is surrounded by mountainous regions. The mountainous regions or areas are inhabited by many Banjara Tandas. Tanda means a place where Banjara community use to live and follow their own rules and regulations set by Nayak, he is a main who is responsible person deciding many cultural and religious activities of the Banjara community. The word Banjara is said to be derived from Sanskrit word Vanachara (Wonderes in jungal). Gorbanjara tribal are followers of Saint. Sevalal Maharaj. He was a great Saint, Warrior, Trader, Social reformar and Medicinal Practitioner. His teaching about social, economical, political views and wisdom about medicinal plants were known as shikwadi i.e philosophy for Gorbanjara community. Logo of Gorshikwadi a social movement of Banjara community is also inspired from Nature; which says, "Wadlasu wadhalu, Limbadasu fulanu, Ghularasu ladaalu." means to grow like Banyan tree, to blosoam like Neem tree and to be fruitful like Gular or Cluster fig tree. Present research try to explore ethnomedicinal wisdom of Banjara community of Aurangabad city and its territorial area.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda Jubilee Park,
AURANGABAD. (M.S.)

Indexed IF = 0.19

12

2012-2018

ISSN 0975-413X
CODEN (USA): PCHHAX

Der Pharma Chemica, 2017, 9(15):1-5

Dr. Rafiq Zakaria College for Women * Aurangabad *

Non-genotoxic and Eco-friendly Synthesis of Chalcones Using Alum ($KAl(SO_4)_2.12H_2O$) as an Efficient and Novel Catalyst

Ansar R Shaikh, Chishty SQ, Mazhar Farooqui, Syed Abed*

Department of Chemistry, Government of Arts and Science College, Aurangabad, Maharashtra, India

ABSTRACT

We report a new environmentally-benign, convenient and facile methodology for the synthesis of non-genotoxic Chalcones using Alum ($KAl(SO_4)_2.12H_2O$) as catalyst. The reaction of 2-hydroxy acetophenone with aldehydes in aqueous ethanol at ambient temperature has been studied. The reaction has yielded chalcones in one step. Furthermore, a series of compounds were synthesized and characterized by melting point, Electron Ionization-Mass Spectrometry (EI-MS), Nuclear Magnetic Resonance (NMR) and Infra-Red (IR) tools. The formation of desired product was confirmed by comparing them with reference compounds. Utilization of aqueous medium, easy reaction conditions, isolation and purification makes this manipulation very interesting from an environmental and economic perspective. Synthesized chalcones are non-genotoxic compounds as there is no functional group those are known as a genotoxic as (1) Aromatic compounds such as N-hydroxyaryls, N-acylated aminoaryls, nitroaryl-N-oxides and amino aryls, (2) Alkyl and acyl groups: N-methylols, N-nitrosoamines, carbamates, nitro compounds, (3) Beta-aromatic groups such as Michael reactive acceptors, alkyl ester of phosphonates, sulphonates, halo alkenes, halo-alkanes.

Keywords: Chalcones, Alum, Aldehyde, Acetophenone

INTRODUCTION

Chalcones constitute an important group of natural products. Pharmacological studies of various scaffolds bearing chalcones possess an array of biological activities such as antibacterial, anti-inflammatory and antifeedant derivatives. The Claisen-Schmidt condensation is basic reaction for the synthesis of chalcones in which aliphatic or aromatic ketones condense with an aldehyde in presence of soluble alkaline hydroxides or Sodium Ethoxide (NaOEt).

Other than the soluble bases various heterogeneous solid bases are also employed to obtain chalcones. These includes alumina, Barium Hydroxide ($Ba(OH)_2$), hydrotalcites, Magnesium Oxide (MgO) and calcined Sodium nitrate ($NaNO_3$)/natural phosphate. The acid catalyzed methodologies include the use of Aluminium Chloride ($AlCl_3$), Boron Trifluoride (BF_3), dry HCl, Titanium Tetrachloride ($TiCl_4$), Zirconium Hydride Dimer (Cp_2ZrH_2)/Nickel(II) Chloride ($NiCl_2$), zeolites and Ruthenium(III) Chloride ($RuCl_3$). Very recently chalcones synthesis has been accomplished by the use Lithium Hydroxide Monohydrate ($LiOH.H_2O$) catalyst and by employing Suzuki coupling reaction [1-4].

Chalcones are another class of compounds which are considered as the precursors of flavonoid and isoflavonoid family and have wide distribution in fruits, vegetables, spices, tea and soya based foodstuff. Chalcones have been subject of great interest for their interesting and variable pharmacological activities [5]. Chalcones or 1,3-diaryl-2-propen-1-ones chemically they consist of open-chain flavonoids in which the two aromatic rings are joined by a 3 carbon α, β-unsaturated carbonyl system. The radical quenching property of the phenolic groups in polyhydroxylated chalcones makes them drugs or food preservatives and rapidly gaining attention towards themselves [6]. Chalcones have been reported to possess many useful properties, including anti-inflammatory, antimicrobial, antifungal, antioxidant, cytotoxic, antitumor and anticancer activities. All these are well reported in reviews [7,8].

A number of chalcones derivatives have also been found to inhibit several enzymes in cellular systems including xanthine oxidase [9], aldose reductase [10], epoxide mycrolase [11], protein tyrosine kinase [12,13] and quinine reductase [14]. Alum ($KAl(SO_4)_2.12H_2O$) is an acid with extremely wide applications such as in the synthesis of 14*H*-dibenzo xanthenes [15] and coumarins [16]. However, there are no examples for the use of alum as a catalyst in the preparation of chalcones. Alum has been used at least since Roman times for purification of drinking water and industrial process water [17].

The mission of International Council for Harmonisation (ICH) of technical requirements for pharmaceuticals for human use is to achieve greater Harmonisation Worldwide to ensure that safe, effective and high quality medicines are developed.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

International. IF = 0.19

(12)

2012-2018

ISSN 0975-413X
CODEN (USA): PCHHAX

Der Pharma Chemica, 2017, 9(15):1-4

Dr. Rafiq Zakaria College for Women Aurangabad

Non-genotoxic and Eco-friendly Synthesis of Chalcones Using Alum ($KAl(SO_4)_2.12H_2O$) as an Efficient and Novel Catalyst

Ansar R Shaikh, Chishty SQ, Mazhar Farooqui, Syed Abed*

Department of Chemistry, Government of Arts and Science College, Aurangabad, Maharashtra, India

ABSTRACT

An efficient, eco-friendly, convenient and facile methodology for the synthesis of non-genotoxic Chalcones using Alum ($KAl(SO_4)_2.12H_2O$) as catalyst. The reaction of 2-hydroxy acetophenone with aldehydes in aqueous ethanol at ambient temperature has been studied. The reaction has afforded chalcones in one step. Furthermore, a series of compounds were synthesized and characterized by melting point, Electron Ionization-Mass Spectrometry (EI-MS), Nuclear Magnetic Resonance (NMR) and Infra-Red (IR) tools. The formation of desired product was confirmed by comparing them with reference compounds. Utilization of aqueous medium, easy reaction conditions, isolation and purification makes this manipulation very interesting from an environmental and economic perspective. Synthesized chalcones are non-genotoxic compounds as there is no functional group those are known as a genotoxic as (1) Aromatic compounds such as N-hydroxyarenes, N-acetylated aminoarenes, azo-aryl-N-oxides and amino aryls. (2) Alkyl and acyl groups: N-methylols, N-nitrosoamines, carbamates, nitro-compounds. (3) Beta unsaturated carbonyl groups such as Michael reactive acceptors, alkyl ester of phosphonates, sulphonates, halo-alkenes, nitriles.

Keywords: Chalcones, Alum, Aldehyde, Acetophenone

INTRODUCTION

Chalcones constitute an important group of natural products. Pharmacological studies of various scaffolds bearing chalcones possess an array of biological activities such as antibacterial, anti-inflammatory, an antifeedant derivatives. The Claisen-Schmidt condensation is basic reaction for the synthesis of chalcones in which aliphatic or aromatic ketones condense with an aldehyde in presence of soluble alkaline hydroxides or Sodium Ethoxide ($NaOEt$).

Other than the soluble bases various heterogeneous solid bases are also employed to obtain chalcones. These includes alumina, Barium Hydroxide ($Ba(OH)_2$), hydrotalcites, Magnesium Oxide (MgO) and calcined Sodium nitrate ($NaNO_3$)/natural phosphate. The acid catalyzed methodologies include the use of Aluminium Chloride ($AlCl_3$), Boron Trifluoride (BF_3), dry HCl, Titanium Tetrachloride ($TiCl_4$), Zirconium Hydride Dimer (Cp_2ZrH_2)/Nickel(II) Chloride ($NiCl_2$), zeolites and Ruthenium(III) Chloride ($RuCl_3$). Very recently chalcones synthesis has been accomplished by the use Lithium Hydroxide Monohydrate ($LiOH.H_2O$) catalyst and by employing Suzuki coupling reaction [1-4].

Chalcones are another class of compounds which are considered as the precursors of flavonoid and isoflavonoid family and have wide distribution in fruits, vegetables, spices, tea and soya based foodstuff. Chalcones have been subject of great interest for their interesting and versatile pharmacological activities [5]. Chalcones or 1,3-diaryl-2-propen-1-ones chemically they consist of open-chain flavonoids in which the two aromatic rings are joined by a 3 carbon α, β-unsaturated carbonyl system. The radical quenching property of the phenolic groups in polyhydroxylated chalcones makes them drugs or food preservatives and rapidly gaining attention towards themselves [6]. Chalcones have been reported to possess many useful properties, including anti-inflammatory, antimicrobial, antifungal, antioxidant, cytotoxic, antitumor or anticancer activities. All these are well reported in reviews [7,8].

A number of chalcones derivatives have also been found to inhibit several enzymes in cellular systems including xanthine oxidase [9], aldose reductase [10], epoxide hydrolase [11], protein tyrosine kinase [12,13] and quinine reductase [14]. Alum ($KAl(SO_4)_2.12H_2O$) is an acid with extremely wide applications such as in the synthesis of 14*H*-dibenzo xanthenes [15] and coumarins [16]. However, there are no examples for the use of alum as a catalyst in the preparation of chalcones. Alum has been used at least since Roman times for purification of drinking water and industrial process water [17].

The mission of International Council for Harmonisation (ICH) of technical requirements for pharmaceuticals for human use is to achieve greater Harmonization Worldwide to ensure that safe, effective and high quality medicines are developed.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Juibiee Park,
AURANGABAD. (M.S.)

International Journal of Universal Print
ISSN: 2454-7263 ID: ACTRA 2018 015 Published Mar. 2018
Volume No. 04, Issue No.02, Copyright © Universal Print
Web: www.universalprint.org , Email: ijup@universalprint.org
Title Key: STUDY OF GEOLOGICAL CONTOURS OF ...

2012-2018

STUDY OF GEOLOGICAL CONTOURS OF KHULTABAD AND CHALISGAON HILLY AREA AND THEIR FRACTAL NATURE





S.Q.Chishty[1] and Mhod Khizar[2]

Department of Physics, Dr. Rafiq Zakaria College for Women Navkhanda Aurangabad M.S
Email: chishtysq@gmail.com

Department of Physics, Kohinoor College of Arts Science and Commerce Khultabad. M.S
prof.khizersayeed@gmail.com

Dr. Rafiq Zakaria College for Women
Almeeda

ABSTRACT:

In the present study contours from local hill area Kultabad tehsil of Aurangabad district Maharashtra. And hilly area 'Chaalisgaon' area in Jalgaon district(M.S). These contours are plotted by taking the scale as 1 cm = 500m. using leveling instruments. The contour shapes are studied with reference to the fractal geometry. As the contours are closed forming irregular shapes these shapes are digitized and analyzed using the box counting technique. Their fractal dimensions are calculated.

KEY WORDS: Box counting, Contours, Dimensions, Fractal.

1.0:INTRODUCTION:

There are many geological applications of fractal theory, which remained unanswered by the regular geometry known as Euclidean geometry. Shapes of mountains, earthquakes and seismicity and tectonics frequency size of rock fragments, volcanic eruptions, mineral deposits, oil fields etc. are examples of scale invariant in geology [1] the applicability of power law statistics to geological phenomena was recognized long before the concept of fractals was conceived. An example is Gutenberg-Richter relation for frequency magnitude statistics of earthquakes [2]. It is now accepted that relationship is equivalent to a fractal with dimensions typically 1.8 for distributed Seismicity. Mandelbrot (1982) has used the fractal concept to generate synthetic landscapes that look similar to actual one. The earth's topography is a

Dr. S. Q. Chishty
Department of Physics
Dr. Rafiq Zakaria College for Women
Navkhanda Aurangabad
AURANGABAD. (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Juiblee Park,
AURANGABAD. (M.S.)

International Journal of Universal Print
ISSN: 2454-7263 ID: ACTRA 2018.021 Published Mar 2018
Volume No: 04, Issue No:03, Copyright © Universal Print
Web: www.universalprint.org , Email: ijup@universalprint.org
Title Key: Dielectric properties of Medicinal Compound ..

2017-18



Dielectric Properties of Medicinal Compounds Using Microwave

[1]Abdul Jaleel A. H , Research Scholar,
[1]Maulana Azad College of Arts, Science and Commerce, Aurangabad (MS).
Email:ansariabduljaleel@rediffmail.com

[1]A. R. Khan, Head of Deptt. Comuter Science,
[1]Maulana Azad College of Arts, Science and Commerce, Aurangabad (MS).
Email:ansariabduljaleel@rediffmail.com

[2]Quadri F. B, line of address, Assistant Professor
[2]Dr. Rafiq Zakaria College For Women, Aurangabad (MS).
Email:ansariabduljaleel@rediffmail.com

[1]Shaikh Y. H, Assistant Professor
[1]Shivaji College, Kannad, Aurangabad (MS).
Email:ansariabduljaleel@rediffmail.com

Abstract

Dielectric properties of materials are of interest to scientists and engineers, this includes properties like permittivity, permeability and conductivity. We studied the dielectric properties of selected medicinal compounds such as menthol and thymol in varying concentration of their solution in Acetone. We used microwave reflectromety technique for the measurement of dielectric properties at microwave frequency of 9.8 GHz at constant temperature of 293 K. The advantage of this approach is that using a reflectrometry measurement setup of liquids, the dielectric properties of solids can be estimated from their solutions. Dielectric constant, dielectric loss and tangent loss is measured for the solutions of the two medicinal compounds in different concentration in acetone and details discussed.

Keywords: Microwave, Plunger cell, Dielectric Properties, Constant temperature Bath etc.

Subject Classification: Physical Chemistry

1. Introduction

In relation to dielectric properties, the electromagnetic properties of material of interest to scientists and engineers include the permittivity, permeability and conductivity. For dielectric materials both for lossy and lossless, the most identifying parameter is the dielectric constant or permittivity. Dielectric microwave field. . These properties are very important in microwave heating, microwave sensing, process design and application. For example, there are many researchers who have used dielectric properties to measured moisture content of material and agro-food. A number of methods for measuring the microwave dielectric constant and dielectric loss of liquids have been proposed by different

Dr. Quadri F.B.
Asst. Prof. Physics
Dept. of Physics
Dr. RZCW Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

2017-20

Excel Journal of Engineering Technology and Management Science
(An International Multidisciplinary Journal)
Vol 1 No.12 June 2017 (Online) ISSN 2277-3339 (Impact Factor 2.119) IIFS UGC Journal No: 6437

Dr. Rafiq Zakaria College for Women Aurangabad

Electrical Status of the Black Soil Around the Aurangabad City

*Quadri F. B. Department of Physics, Dr. Rafiq Zakaria College For Women, Aurangabad.
**A R Khan Department of Computer Science, Maulana Azad College for Arts, Science and Commerce, Aurangabad.
***Gulam Rabbani, Director, Dr.Rafiq Zakaria Center for Higher Learning and Research, Aurangabad.

Introduction: Soil is the outermost part of the earth surface that is exposed to the atmosphere. This soil is a complex material made up of solids, liquids and some gaseous molecules. Exploring this surface physically, chemically or electrically gives an insight of the composition of it. This research is carried out all around the globe in search of earth like planet that supports living organisms as well as flourishing flora in the space. It is a termed as remote sensing [1]. Remote sensing is done with the intention to study the soil in terms of its electrical properties. There is active remote sensing and also passive sensing in which radiations from some strange emitters are analyzed to have an idea about its composition.

Electrical properties[2] of soil are the indicators of its structural and chemical composition. These electrical properties include complex dielectric permittivity, ε^*. It is the sum of real part, dielectric constant and the imaginary part, dielectric loss. Dielectric constant gives the amount of energy stored in the material and dielectric loss is the amount of energy lost per cycle.

$\varepsilon^* = \varepsilon' - j\varepsilon''$, ε' = dielectric constant ε'' = dielectric loss & $j = \sqrt{-1}$

The concept of dielectric constant and dielectric loss can be understood from polar and non polar materials. The insulating materials that are available in the nature can be categorized into polar and non polar molecules. Polar molecules have a permanent dipole moments. The centers of positive and negative charges are separated by slight distances forming dipoles even in the absence of external field. These dipoles are randomly oriented when no field is applied, hence the net electric field inside the material is zero. Whereas, in case of non polar molecules, the centers of positive and negative charges overlap. When external electric field is applied, the centers of respective charges get displaced from their mean position, polarization is brought out. In the presence of the external field, in both types of materials, the induced dipoles get aligned according to the direction of the external applied field. Hence, electrical energy is stored in the material in the form of these polarization charges. When external field is removed, the dipoles go back to their original position. But all of the energy is not recovered. Some part is lost in aligning the dipoles. This part is called as dielectric loss. The time taken by these charges to align in the direction of applied field is called relaxation time, τ.

Experimental Setup: When electromagnetic waves are incident on the dielectric material, the part of the wave is reflected back. Hence a standing wave is formed between the forward wave and the reflected wave [3]. The shift in the minima of the standing wave pattern obtained without and with sample indicates the characteristics of the material through which it is reflected. Writing the impedance formula for the interface of air – dielectric material, the dielectric parameters of the material can be determined if the dimension of the waveguide and sample length are known[5].

In this method, the standing wave formed is scanned entirely with the slotted line and detector probe and the points of minima and twice of minima are determined.

Sample Preparation: The soil samples as particulate matter[3] were taken from seven different locations from and around the Aurangabad city. The samples are taken from a vertical depth of 10-15 cm from the agricultural land. The soil samples were crushed and oven dried. The dried samples were then sieved with a standard sieve of number 25. Now, this soil is called the material under test. The material under testis filled up carefully in the waveguide. Infinite sample method is deployed here for measurements of the electrical constants. The sample in the sample holder has to be uniformly inserted without any cavity in between. For this purpose a mechanical arrangement is used.

Procedure: Various techniques are available for the measurements of dielectric properties[4]. The one that is chosen here is infinite sample method. Initially, the slotted line is terminated with a short circuit and the distance between the two successive minima is noted. Twice of these distance gives the waveguide wavelength λ_g. The soil is inserted properly, as described above and the position of first minima is noted. And also, we

PRINCIPAL
Dr. Rafiq Zakaria College for Women
Navkhanda, Jalna Road
AURANGABAD.

Dr. Quadri F.B.
Asst. Prof.
Dept. of Physics

Excel Journal of Engineering Technology and Management Science
(An International Multidisciplinary Journal)
Vol-1 No-13 Dec-Jan 2018 (Online) ISSN 2277-3339 (Impact Factor 2.119) IIFS UGC Journal No:- 6437

Estimation of Errors in Calculating Dielectric Constant of Agricultural Soil Samples

Quadri F. B., Department of Physics, Dr. Rafiq Zakaria College For Women, Aurangabad.
**Gulam Rabbani, Director, Dr.Rafiq Zakaria Center for Higher Learning and Research, Aurangabad.*
***A. R. Khan Department of Computer Science, Maulana Azad College for Arts, Science and Commerce, Aurangabad*

Introduction: In any research works, accuracy of the measured data is very important. It determines the accuracy of the estimated values and is helpful in comparing the obtained values with the standard values. The obtained values never comes to be exact with the standard values due to errors that are incorporated with the experiment. There are different types of errors[1] that can be minimized but not eliminate completely. The types of errors are instrumental errors, systematic errors, random errors, personal errors, etc. Errors[2] are always present in any of the observations. They can not be removed completely. But one can reduce the degree of error by increasing the number of trails or observations of the data. The different formulae for the estimation of errors are ,

Let $a_1, a_2, a_3, a_4, a_5, \ldots\ldots, a_n$ are the n number of observations then the mean value of the observation is a_{mean}

$$a_{mean} = \frac{a1+a2+a3+a4+a5+\ldots\ldots+an}{n} = \frac{1}{n}\sum a_i$$ summation is over all the values , i is from 1 to n

The difference between the mean value and each individual value is the absolute error

Absolute error $= \Delta a_i = a_{mean} - a_i$

The arithmetic mean of all the absolute errors is called mean absolute errors [3].

$\Delta a_m = \frac{1}{n}\sum \Delta a_i$ summation is over all the values , i is from 1 to n

The ratio of the mean absolute error in the measurements of a physical quantity to its mean value is called relative error.

Relative error $= \frac{\Delta am}{am}$

Percentage Relative error $= \frac{\Delta am}{am} \times 100$ %

Dielectric Measurements: Study of dielectric parameters[4] of the materials has gained quite significance due to its wide applications in different fields . Study of novel dielectric materials for electronic industry , in microwave heatings and in active and passive remote sensing , dielectric measurements have found different uses. Dielectric study of materials also give structural and compositional information of the materials[6]

Experimental Details: The soil samples were collected from agricultural land of different regions of Marathwada region in the month of April. The soil under study was grated and sieved using standard sieves to cutoff the larger size of the soil particles. The work was carried at room temperature at atmospheric pressure and the natural humidity of the climate of that summer days. Wave guide cell method[7] , particular infinite sample method was employed for the practical work. Klystron power supply generated the required microwaves of frequency 9.76GHz and the micro ammeter connected to the probe of the slot line provided the current of the standing wave generated in the wave guide due to the incident and the reflected wave. The block diagram of the setup used during the work is as shown below:

Dr. Quadri F.B.
Asst. Prof
Dept. of Physics
Dr. RZCW Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 7.523
Volume 6, Issue 14, 352-358. Research Article ISSN 2277– 7105

ANTIMICROBIAL ACTIVITY OF *CAESULIA AXILLARIS* ROXB AND *PSORALEA CORYLIFOLIA* L

Vidya Pradhan[1], Mazahar Farooqui[2], T. A. Khan[3], P. A. Khan[4] and J. V. Khan*

*Dept. of Biotech., PGCSTR College Jalgaon. MS. India.

[1,2]Dr. Rafique Zakaria College for Women, Aurangabad, MS, India.

[3]Dept. of Botany, Iqra H. J. Thim College, Jalgaon, MS, India.

[4]Dept. of Botany JES's ASC College Nandurbar MS, India.

Article Received on
05 Sep. 2017,
Revised on 26 Sep. 2017,
Accepted on 17 Oct. 2017
DOI: 10.20959/wjpr201714-9774

***Corresponding Author**
J. V. Khan
Dept. of Biotech., PGCSTR
College Jalgaon, MS, India.

ABSTRACT

Caesulia axillaris Roxb. and *Psoralea corylifolia* L.are commonly occurring plant and known for their folk medicinal value among the local peoples. It was recorded in ancient literature that different part were used to treat disease related to bacterial and fungal pathogen. On this aspect current antimicrobial were carried out in different plant part like Leaves, Seed and Stem in different solvent like Hexane, Chloroform and Methanol. All tests were designed in many replicate against fungal and bacterial pathogen to find out their control activity. Zone of inhibitions in mm were recorded after 24 hrs of inoculation. It was found that methanol extract of leaves in both concentration (2% and 4%) were showing best significant result among all in both plant case. Results indicate that plant having active antimicrobial activity in appropriate concentration and solvents.

KEYWORDS: Antimicrobial, Antifungal, Antibacterial activity, Medicinal important, Solvent and Extraction.

INTRODUCTION

Plants are considerably useful and economically important for all mankind. They may due to their food value or by means of their active constituents that are used in the treatment of many human diseases. Plants contain hundreds or thousands chemicals and metabolites make them medicinally important.[3] Medicinal and aromatic plants a gift of nature are being used against various infection and diseases in the worlds since past history. It represents extraordinary reservoir novel molecules.

Dr. Vidya Pradhan
Professor and Head
Department of Zoology
Dr.Rafiq Zakaria College for Women,
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 7.523
Volume 6, Issue 14, 352-358. Research Article ISSN 2277– 7105

ANTIMICROBIAL ACTIVITY OF *CAESULIA AXILLARIS* ROXB AND *PSORALEA CORYLIFOLIA* L

Vidya Pradhan[1], Mazahar Farooqui[2], T. A. Khan[3], P. A. Khan[4] and J. V. Khan*

*Dept. of Biotech., PGCSTR College Jalgaon, MS. India.
[1,2]Dr. Rafique Zakaria College for Women, Aurangabad, MS, India.
[3]Dept. of Botany, Iqra H. J. Thim College, Jalgaon, MS, India.
[4]Dept. of Botany JES's ASC College Nandurbar MS, India.

Article Received on
05 Sep. 2017,
Revised on 26 Sep. 2017,
Accepted on 17 Oct. 2017
DOI: 10.20959/wjpr201714-9774

***Corresponding Author**
J. V. Khan
Dept. of Biotech., PGCSTR
College Jalgaon, MS, India.

ABSTRACT

Caesulia axillaris Roxb. and *Psoralea corylifolia* L.are commonly occurring plant and known for their folk medicinal value among the local peoples. It was recorded in ancient literature that different part were used to treat disease related to bacterial and fungal pathogen. On this aspect current antimicrobial were carried out in different plant part like Leaves, Seed and Stem in different solvent like Hexane, Chloroform and Methanol. All tests were designed in many replicate against fungal and bacterial pathogen to find out their control activity. Zone of inhibitions in mm were recorded after 24 hrs of inoculation. It was found that methanol extract of leaves in both concentration (2% and 4%) were showing best significant result among all in both plant case. Results indicate that plant having active antimicrobial activity in appropriate concentration and solvents.

KEYWORDS: Antimicrobial, Antifungal, Antibacterial activity, Medicinal important, Solvent and Extraction.

INTRODUCTION

Plants are considerably useful and economically important for all mankind. They may due to their food value or by means of their active constituents that are used in the treatment of many human diseases. Plants contain hundreds or thousands chemicals and metabolites make them medicinally important.[3] Medicinal and aromatic plants a gift of nature are being used against various infection and diseases in the worlds since past history. It represents extraordinary reservoir novel molecules.

Dr. Vidya Pradhan
Professor and Head
Department of Zoology
Dr.Rafiq Zakaria College for Women,
Aurangabad
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2017-2018

INTERNATIONAL JOURNAL OF RESEARCH CULTURE SOCIETY
UGC Approved Monthly, Peer-Reviewed, Refereed, Indexed Journal
ISSN: 2456-6683 Volume - 1, Issue -10, Dec - 2017
Impact Factor: 3.449 Publication Date: 31/12/2017

Gas Chromatography - Mass Spectroscopic Analysis of Oil Extracted from Freshwater Edible Surmai Fish (*Scomberomorus commerson*) From Marathwada Region

Vishal Ladniya[1], Mohammad Moaviyah Moghal[2], Vidya Pradhan[3]*
Post Graduate and Research Center, Maulana Azad College of Arts, Science & Commerce, Aurangabad, Maharashtra, India
Dr. Rafiq Zakaria College for Women, Navkhanda, Aurangabad, Maharashtra, India
Email: - vidyaspradhan7@gmail.com

Abstract: Gas Chromatography Mass Spectrometry (GC-MS) is only one of its kind method for the study measuring quantity of organic volatile and semi-volatile compounds. Gas chromatography is utilized to separates mixtures into individual components employing a temperature-controlled capillary column. Mass spectrometry is applied to recognize a variety of components from their mass spectra. In the present study volatile semi-volatile compounds present in Oil extracted from Surmai Fish (Scomberomorus commerson) are analyzed. Surmai Fish oil is extracted by Supercritical fluid extraction method and then analyzed by Gas Chromatography / Mass Spectrometry (GC/MS). A total of 6 compounds are found and quantified in this study.

Key Words: Gas Chromatography / Mass Spectrometry, Fish Oil, Surmaifish, (Scomberomorus commerson)

1. INTRODUCTION:

Surmai fish (*Scomberomorus commerson*) is an economically important fish and found in most parts of the world. Surmai fish is connected to rather short, dry and tapered fins. Surmai is rich in omega-3 fatty acids. It is a good source of lean protein which is good for heart healthy. Omega-3 fatty acids are found in surmai fish; these fatty acids help decrease inflammation throughout the body and maintain brain health as well as lower triglyceride levels.

Kavitharani *et al* studied Reproduction and spawning patterns of the Scomberomorus commerson in the Iranian coastal waters of the Persian Gulf & Oman Sea [1]. M.R. Claereboudt *et al* performed research work in order to find out Patterns of reproduction and spawning of the kingfish (Scomberomorus commerson, Lacep`ede) in the coastal waters of the Sultanate of Oman[2].

Fakhri, Ali *et al* conducted a study in order to find out ength Composition, Growth, Mortality and Exploitation Rate of King Fish (Scomberomorus commerson) in the Coastal Waters of Bushehr Province [3]. N. Vineesh *et al* identified the genetic stock structure of S. commerson distributed along the Indian waters was using mitochondrial ATPase 6 and 8 genes [4].

Poulose vesudhasan *et al* studied effect of potassium sorbate and modified atmosphere packaging on the shelf-life extension of seer fish (Scomberomorus commerson) steaks during iced storage [5]. Aboltazl Askary Sary *et al* determined the concentration of lead and zinc in king mackerel (Scomberomorus guttatus Bloch & Schneider, 1801), Spanish mackerel (Scomberomorus commerson Lacepede, 1800) and Tiger-toothed Croaker (Otolithes Ruber Bloch and Schneider, 1801) in the Persian Gulf, Iran in 2010 and 2011 [6].

In recent times, we used supercritical fluid extraction technology [instrument name: SFC L-tex Japan] in order to extract compounds from various biological material such as plants and animals, performed GC-MS analysis of oil extracted for fresh water crab and also analyzed fatty acid composition of some animals [7-13]. There is no work available on the supercritical extraction of Surmai fish. Hence we repeat its extraction.

2. MATERIAL AND METHOD:

The Surmai Fish (*Scomberomorus commerson*) is purchased from local market, at Aurangabad District (Maharashtra) India. The Surmai Fish meat is dried in oven for 8 hours at 50 °C. After proper drying Surmai Fish meat is subjected to supercritical fluid extraction process in order to obtain Surmai Fish oil. The extraction is performed using SFC (L-tex, Japan) instrument. Carbon dioxide gas is used as supercritical fluid; Hexane is used as modifier (co-solvent). Extraction is performed at constant flow rate, Constant temperature and constant pressure. Extraction Conditions: flow rate of carbon dioxide = 1 ml/min, flow rate of hexane = 1 ml/min, temperature = 40 °C and pressure = 25 Mpa. Extracted oil from the freshwater Surmai Fish (*Scomberomorus commerson*) is used as a sample for gas chromatography/ Mass spectroscopy analysis. After extraction the Surmai Fish oil is subjected to gas chromatography/ Mass spectroscopy analysis.

Dr. Rafiq Zakaria College for Women, Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr Vidya Pradhan
Professor and Head
Department of Zoology
Dr.Rafiq Zakaria College for Women,
Aurangabad

Haya: The Saudi Journal of Life Sciences (SJLS)
Scholars Middle East Publishers
Dubai, United Arab Emirates
Website: http://scholarsmepub.com/

ISSN 2415-623X (Print)
ISSN 2415-6221 (Online)

Fatty Acid Composition of Oil Extracted from Murrel Fish (*Channa striata*) From Marathwada Region

Vishal Ladniya[1], Mohammad Moaviyah Moghal[1], Vidya Pradhan[2]*
[1]Post Graduate and Research Center, Mauluna Azad College of Arts, Science & Commerce, Aurangabad, Maharashtra, India
[2]Dr. Rafiq Zakaria College for Women, Navkhanda, Aurangabad, Maharashtra, India

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

Original Research Article

***Corresponding author**
Vidya Pradhan

Article History
Received: 06/12/2017
Accepted: 20/12/2017
Published: 30/01/2018

DOI:
10.21276/haya.2018.3.1.5

Abstract: The Murrel fish (*Channa striata*) is a of freshwater fish species, native to South Asian region and it contains high nutritional values. The murrel fish is a good source of Omega fatty acids and proteins, omega fatty acids and proteins helps to speed up the healing processes. For the present study Murrel Fish is purchased from local market of Aurangabad (MS) India. The fatty acid composition of oil extracted from Murrel fish has been investigated. Fatty acid composition of the oil is determined by Gas Chromatography. It is found that the Murrel Fish is rich in Palmitic acid, Stearic acid, Oleic acid, and Linoleic acid. Arachidonic acid, Behenic acid & Ricinoleic acid are also found in Murrel fish.

Keywords: Murrel fish (*Channa striata*), Fatty acid composition, Gas Chromatography.

INTRODUCTION

The freshwater Murrel fish (*Channa striata*) commonly known as snakehead fish, it belongs to the family Channidae. Murrel fish is one of the economically important fish species. It is found in different habitats ranging from rivers, ponds, swamps, canals, land of rice fields and lakes. Their natural populations are widely distributed across southern Asia: India, southern China, Indochina, and Sunda Islands. [1–6]. Murrel fish is one of the tasty and popular fresh water fish. Indians consume Murrel fish as important protein food. In India, during the beginning of every rainy season Murrel fingerlings have been used in fish medicine. Indians believe that the medicine is good for curing asthma, a respiratory disease.

In recent times, we used supercritical fluid extraction technology (instrument name: SFC, Jasco, Japan) in order to extract compounds from various biological material such as plants and animals and also analyzed fatty acid composition of some animals [7-13]. The aim of this study is to analyze fatty acid composition of oil extracted from Murrel fish.

MATERIALS AND METHODS

The Murrel Fish are purchased from local market, at Aurangabad District (Maharashtra) India. The meat of Murrel fish is dried in oven for 8 hours at 50 ° C. After proper drying, the dried fish meat is subjected to supercritical fluid extraction process in order to obtain fish oil. Extraction is performed using SFC (Jasco, Japan) instrument. Carbon dioxide gas is used as supercritical fluid. Hexane is used as a modifier (co-solvent). Extraction is performed at constant flow rate, Constant temperature and constant pressure. Extraction conditions: flow rate of carbon dioxide = 1 ml/min, flow rate of hexane = 1 ml/min, temperature = 40° C and pressure = 25 Mpa. Extracted oil from the fish is used as a sample for fatty acid composition analysis.

Preparation of Methyl Esters (Method A)

500 mg sample is added to 100 ml boiling flask. 8 ml methanolic NaOH solution and boiling chip is added to the flask. Condenser is attached to the flask and refluxed until fat globules disappear (about 5–10 min). 9 ml BF solution is added through condenser and continued boiling for 2 min. Add 5 ml hexane is added through condenser and boiled for 1 more min. The boiling flask is removed and ca. 15 ml saturated NaCl solution is added. Stopper is placed on the flask and shaken vigorously for 15 s while solution is still tepid. Add additional saturated NaCl solution is added to float hexane solution into neck of flask. 1ml upper hexane solution is transferred into a small bottle and anhydrous Na_2SO_4 is added to remove H_2O.

Injection of Standards and Samples into GC

The syringe is rinsed three times with hexane, and three times with the reference standard mixture (25 mg of 20A GLC Reference Standard FAME dissolved

Dr.Vidya Pradhan
Professor and Head
Department of Zoology
Dr.Rafiq Zakaria College for Women,
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2017-2018

International Journal of Universal Science and Technology
ISSN: **ISSN: 2454-7263** Copyright © Universal Print
Volume No. 03, Issue No. 06, Page No. 266-274 Published: Jan. 2018
Web: www.universalprint.org , Email: ijup@universalprint.org
Title Key: Study of Growth And Survival Rate of Fresh ...

Study of Growth And Survival Rate of Fresh Water Crab With Water Quality Parameters of Gopalwadi Tq. Kannad

Vidya Pradhan[*] [1], B.H. Gaikwad[2], Mohammad Mohsin[1]

1. Dr. Rafiq Zakaria College for Women, Navkhanda, Maharashtra. (India)
2. Shivaji Arts, Commerce and Science, College, Kannad, Maharashtra

Email: gaikwadbh1968@gmail.com

Dr. Rafiq Zakaria College for Women * Aurangabad *

Abstract

For the present work the area of Gopalwadi i.e. station S_1 is selected and the study is carried in the year June-2012 to May-2013. The study covers the physico-chemical parameters of water as well as the diversity of crab barytelphousa cunicularies was carried out. The study reveals that the water parameters are within permissible limit. The correlation study between water parameters and crab also carried out.

Key words: Crabs, Marathwada, Size, Male and Female.

1. Introduction

The blue swimmer crab, *Portunus pelagicus*, is the major marine crab landed from bottom trawl nets and set gill nets in India. Moreover, in recent years shrimp culture has encountered heavy losses due to disease outbreaks in Asia, which warrants the need to diversify culture operations in order to utilize the farm and to include other biologically suitable and economically viable crustaceans in the production process. The best way of describing the growth of many crustacean species is by observing their moulting pattern. Crustacean growth is dependent upon the duration of the intermoult (moult interval) and size increase at each moult moult increment[1]. Along the southern-Atlantic coast of Canada, two of the most common predators of mussels are the green crab (Carcinus maenas) and the dogwhelk (Nucella lapillus).

These species interact negatively through inter- and intra-specific interference competition, exploitative competition, intra-guild predation of dogwhelks by crabs, and various trait-mediated indirect interactions driven by chemical risk cues. Agonistic behavior is common among green crabs, which can lead to changes in prey choice and feeding behavior. However, whelk presence is known to increase foraging rates in crabs, possibly through the use of chemical cues and kleptoparasitic feeding. Thus, when whelks are present together with multiple crabs they may mitigate. One of the negative effects on crab foraging rates that result from conspecific interactions.

Both crabs and whelks prefer a restricted size range of mussels based on their body size and foraging techniques differ significantly between these two species. To feed on bivalve prey, crabs typically chip or crush the shell, with larger crabs capable of feeding on larger prey items. Whelks feed on bivalves by boring a hole through the shell, injecting digestive enzymes inside, and extending their proboscis through the hole to ingest the digested tissue. Crabs forage during

PRINCIPAL
Dr. Rafiq Zakaria College For Wo
Navkhanda Jubilee Park,
AURANGABAD. (M.S.)

Dr.Vidya Pradhan
Professor and Head
Department of Zoology
Rafiq Zakaria College for Women,
Aurangabad

2017-18

Dr. Rafiq Zak... College For Women
Aurangabad

// स्त्रीशक्तिरतुल्या सदा //

Peer Reviewed Referred and
UGC Listed Journal
(Journal No. 40776)

AN INTERNATIONAL MULTIDISCIPLINARY
QUARTERLY RESEARCH JOURNAL

ISSN 2277-5730

AJANTA



मराठी भाग - १ / हिंदी

भारतातली पहिली महिला शिक्षिका

"सावित्रीबाई फुले"

Special Issue
"WOMEN EMPOWERMENT"

VOLUME - VII, ISSUE - I
JANUARY - MARCH - 2018

IMPACT FACTOR / INDEXING
2017 - 5.2 www.sjifactor.com

Dr. KUSUM RANA
HEAD
Dept. of Hindi
Dr. Rafiq Zakaria College for Women

Dr. Rafiq Zakaria College For Women
Navkhanda, Jalblee Park,

VOLUME - VII, ISSUE - I - JANUARY-MARCH - 2018
AJANTA- ISSN 2277-5730 - IMPACT FACTOR - 5.2 (www.sjifactor.com)

हिंदी अणुक्रमणिका

अ.क्र.	लेख आणि लेखकाचे नाव	पृष्ठ क्र.
१	सुधा अरोडा की कहानियों ने महिला जागरुकता **प्रा. डॉ. कुसूम राणा**	१-३
२	संगीत और महिला सक्षमीकरण **डॉ. वैशाली देशमुख**	४-६
३	सामाजिक जीवन के परिपक्ष्य में बदलते महिलांओ का योगदान **प्रा. डॉ. शेख मदीना सिकंदर**	७-१०
४	महिला सशक्तिकरण एवं उसके अधिकार **डॉ. राठोड सुनिता भिमराव**	११-१५
५	भारतीय उच्च शिक्षा में लैंगिक अंतर : राष्ट्र निर्माण में इसका प्रभाव **डॉ. श्रीमती एस. पी. गोडबोले**	१६-२०

Dr. KUSUM RANA
HEAD
Dept. of Hindi
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

VOLUME - VII, ISSUE - I - JANUARY - MARCH - 2018
AJANTA - ISSN 2277 - 5730 - IMPACT FACTOR - 5.2 (www.sjifactor.com)

Aurangabad • Dr. Rafiq Zak... College For Women

१. सुधा अरोडा की कहानियों ने महिला जागरुकता

प्रा. डॉ. कुसूम राणा
सहायोगी प्राध्यापिका एवं विभाग प्रमुख एवं शोध निर्देशिका, डॉ. रफिक झाकेरिया कॉलेज फॉर वुमेन, जुबली पार्क, औरंगाबाद.

साहित्य की अनेक विधाओं में से एक प्रमुख विधा है- कहानी। अपने छोटे आकार के कारण यह अपेक्षाकृत अधिक लोकप्रिय विधा रही है कहानिकार आपने जीवन मे आये किसी विशिष्ट पात्र या कोई अविस्मरणीय घटना का बयान कहानी के माध्यम से करता है। वैसे तो हर रोज ही हमारे आसपास इनती घटनाएँ घटित होती है, जिसपर बहुत कुछ लिखा जा सकता है। इस संबंध में प्रसिद्ध लेखिका सुधा अरोडा करती है- कहानी लिखते समय वास्तविक चरित्र तो दिमाग से ओझल हो जाते है बस वह केंद्रीय भाव बचा रहता है, जिसने दिमाग में खलल पैदा कर दिया था। और जिसके इर्द गिर्द नए सिरे से पात्र रचे जा सकते है। कई बार जीवन में देखे गये दो तीन किरदार कहानी के एक ही पात्र में सिमट जाते है और कभी -कभी जीवन में देखा - सुना एक पात्र दो तीन अलग अलग कहानियों में अलग-अलग भूमिकाए निभाता दिखाई दे जाता है।

आज की कहाहनी जीवन को बेहतर बनाने में, सामाजिक कुरीलियों के खिलाफ लडने मे, आदमी को उसके इर्द गिर्द फैली विसंगतियों के प्रति जागरुक कराने में सकारात्मक भुमिका निभा रही है। सुधाजीने महिलाओं से संबंधित, उनके नारी संवेदना को लेकर कुछ कहानियाँ लिखी है।

उनकी एक कहानी है करवाचौथी औरत यह कहानी करपाचौथ के व्रत के एक दिन की कहानी कहती है। कहानी के दो प्रमुख पात्र है एक सविता नामक स्त्री और दुसरी फ्लॉपी नामक कुतिया। घर का कुत्ता बेहद संवेदनशील प्राणी होता है। वह जब हामारे साथ होता है ता परिवार के सदस्य से बढ़कर हो जाता है। सब उसे फ्लॉपी के नाम से बुलाते है, जब कि, घर की मानकिन, दो बेटियों की माँ और एक साहब की बीवी अपनें नाम से कम और ओहदे सें अधिक जानी जाती है।

फ्लॉपी गले में पट्टा बांधने की आदी नही वह अपने मनसे अपना रास्ता तय करते हुए चलती है। उसका इलाका घर की दहलिज के बाहर भी है जब कि सविता का इसका दहलीज के भीतर ही सिमटा है। आज कल हिंदी फिल्मों में होली दीवाली की तरह करवाचौथके व्रत का त्यौहार अपने शादी के लाल जोडे, माँग टीके और मंगळसूत्र पहने, गुडीयासी सजीधजी औरते हाथ में थाल और चलनी से दिखते चांद में अपने पति की तस्वीर को देखती है। जो आज के उपभोक्ता बाजार में खासा बिकाऊ है। यहीं बात इस कहानी के दिखाई देती है।

दुसरी कहानी है डर - यह एक गृहिणी की रोज की रुढीन में खलल डालती एक दोपहर की कहानी है। आमतौरपर गृहिणी के दिन का एक बडा हिस्सा घरेलू कामकाज और बच्चों की पढ़ाई में चला जाता है। दोपहर का छोटा समय वह अपने लिए रखती है। घर की दीवारों में लगी शेल्म में रखे वह एक आकर्षिक कवरवाली किताब पहले हाथ में लेती है। यह किताब

Dr. KUSUM RANA
HEAD
Dept. of Hindi
Dr. Rafiq Zakaria College for Women
Navkhanda, Aurangabad.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2017-2018

IOSR Journal of Computer Engineering (IOSR-JCE)
e-ISSN: 2278-0661,p-ISSN: 2278-8727, Volume 20, Issue 5, Ver. 1 (Sep - Oct 2018), PP 54-60
www.iosrjournals.org

Nanobiosensors: Ideas And Variations

Dr.Khan Uzma Khatoon,
Assit.Professor
Dr Rzfiq Zakaria College for women
Corresponding Author: Dr.Khan Uzma Khatoon

Abstract: *Biosensing has been one amongst the most popular topic attracting scientific minds since long back. It's therefore as biological entities square measure terribly complicated and square measure directly related to the existence of a healthy setting. The look of biosensors additionally has witnessed vital changes within the recent past. Biosensors for applications as various as food quality estimation, environmental observance, and identification of clinical and metabolic complications have return to the fore. Technology has given some extremely exciting ingredients for the development of sensing development. the utilization of various nanomaterials starting from nanoparticles, nanotubes, nanorods, and nanowires has enabled quicker detection and its reliability in a very far better method. The distinctive properties of nanomaterials like high electrical conduction, higher shock bearing ability, and therefore the sensitive responses like electricity and versatile color primarily based detection mechanisms square measure solely the results of congregation of nanomaterial properties. This paper highlights the various kinds of biosensors supported differing types of nanomaterials and their organic process and suggestive aspects.*

Date of Submission: 14-09-2018 Date of acceptance: 29-09-2018

I. Introduction

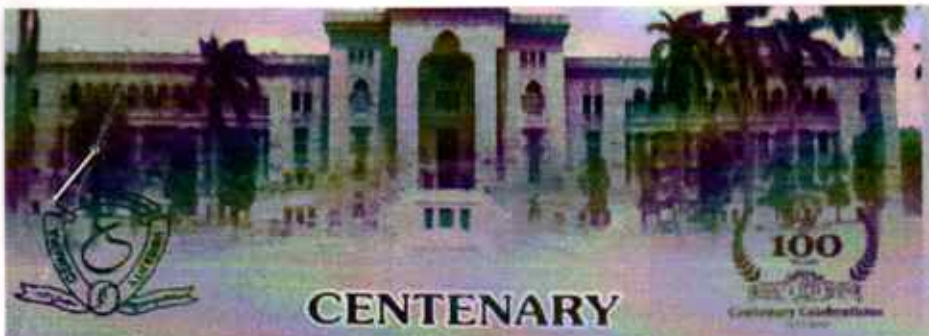
Sensing the biological responses has assumed nice significance within the current situation of ever dynamic environmental developments and corresponding altered physiological state happenings occurring at each in vivo likewise as ex vivo levels. The analysis of behavior of the ever dynamic materials has assumed nice significance in areas like pharmaceutical identification, screening food quality, and environmental applications. during this reference, the event of economical biosensors which may analyze the minutest details of the biological interactions even at a really tiny scale and with extreme exactitude and most ever doable sensitivities deserves pressing attention [1]. A key element of the biosensing is that the transduction mechanisms that square measure chargeable for changing the responses of bioanalyte interactions in Associate in Nursing recognisable Associate in Nursingd duplicatable manner mistreatment the conversion of specific organic chemistry reaction energy into an electrical type through the utilization of transduction mechanisms. Nanomaterials will be extraordinary incumbents during this dimension as they need high area to volume ratios which permit the surface to be employed in additional robust an improved and much more variously practical manner. Moreover, their mechanical device properties square measure the extraordinary assets for the biosensor technology. Nanostructural wonders provided by technology have revolutionized the happenings within the domain of biology that have provided a chance for manipulation of atoms and molecules and monitored the biological development at the physiological level with way bigger exactitude. The language nanobiosensors a name within the sense that it's the word nano prefixed thereto. to urge to the important technology, one should soundly gather the concept of what a biosensor is. As nanoscience is knowledge base in nature therefore golf shot the word nano as prefix typically implies the utilization or manipulation at a scale corresponding to billionth of a meter.

2. Definition and abstract plan

A biosensor will be outlined as a sensing device or a measure system designed specifically for estimation of a fabric by mistreatment the biological interactions then assessing these interactions into a legible

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

H.O.D.
Computer Science Department
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
Aurangabad (M.S.)



ISSN 2231-3265
(Online and Print)

2017 - 18

PROCEEDINGS OF THE

INTERNATIONAL CONFERENCE ON PHYSICAL EDUCATION, FITNESS AND SPORTS SCIENCE 2017

CENTENARY CELEBRATIONS
1917-2017

OSMANIA UNIVERSITY
HYDERABAD. TELANGANA STATE. INDIA

Volume - 27 No. 2
QUARTERLY
July 2017 to September 2017

International Journal of Health, Physical Education & Computer Science in Sports

UGC APPROVED JOURNAL

Dr. FAISAL AHMED RAZVI
Assistant Professor & Head
Dept. of Physical Education
Dr. Rafiq Zakaria College For Women
Jubilee Park, Aurangabad 431001

International Federation of Physical Education, Fitness and Sports Science Associations

Published by : Indian Federation of Computer Science in Sports
www.ijhpecss.org & www.ifcss.in

A Peer Reviewed (Refereed) International Research Journal

Organized by : Department of Physical Education, Osmania University, Hyderabad, T.S. India

Publication Impact Factor I2OR 3.565
ISRA Journal Impact Factor 3.579
Index Journal of

J-Gate
Largest E Journal Gateway

ISRA JIF

I2OR

DRJI

Zakaria College for Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ISSN 2231-3265
International Journal of Health, Physical Education and Computer Science in Sports
Volume No.27, No.2.pp 544 - 545
Journal Impact Factor 3.565 (UGC Approved Journal)
A Peer Reviewed (Refereed) International Research Journal

A Study of Mental Health among Dr. Rafiq Zakaria Campus-I College Students

*Dr.M.A.Bari, **Dr.Faisal Ahmed
*Associate Professor and Head, Department of Physical Education, Maulana Azad College, Aurangabad
**Asst. Professor and Head, Department of Physical Education, Dr.Rafiq Zakaria College for Women, Aurangabad

Abstract:
The present study aims at to investigate the difference in Mental Health amongst college students. Total 100 samples were taken from Dr. Rafiq Zakaria College Campus-I randomly selected from Arts and Commerce stream, out of which 50 were boys and 50 girls. 2 x 2 factorial designed was applied. Data collection was made with the help of 'Mental Health Inventory" by Dr. D.G. Bhatt and G.R. Gida. The collected data was statistically analyzed with the help of 'F' Test, and the following observations were made.There is significant difference between boys and girls, F = 3.69, There is no significant difference is found between students of Arts and Commerce streams F = 0.09 and There is no significant difference between sex and stream

INTRODUCTION

In today's age of globalization, with the progress in science and technology, man has become more conscious about his health and hygene. Name, fame money and power brings stress, frustration and various psychological disorders with them as a gift and package. So it is equally important to pay attention towards physical and mental health. Even today the moment we talk of mental health, people certainly doubt on mental fitness and normality. It is necessary to get rid of such misunderstandings and take care of mental health and hygiene as well."Mental hygiene is the science and art of maintaining mental health and preventing the development of insanity and neurosis. General hygiene care for physical health only but mental hygiene includes mental health as well as physical health because mental health is not possible without physical.

Webster's Dictionary

"Mental hygiene is a science that deals with human welfare and pervades all fields of human relationship".

Crow and Crow

A proper guidance and counselling is required for students at college and university levels. Teen age itself is a big confusion, and when a girl or a boy enters into a college premises from the bindings and disciplined life of school he / she gets into a mass. Some fails to make friends, some fails to assimilate with teachers and authorities, some have problems with parents, some failed to develop interest and to cope with studies, some falls under inferiority complexes and some goes on with superiority complexes. All these are on one hand or the other relates to mental stability. Hence at this stage a suitable programme of counselling proves very effective and friendly.Thus, this study is an attempt to find out various mental health related problem among students of Dr. Rafiq Zakaria College Campus – I in particular.

METHODOLOGY

Variables

Independent Variables
Sex – Boys and Girls
Stream – Arts and Commerce
Dependent Variables
Mental Health

Hypothesis

There is no significance difference between girls and boys.
There is no significance difference between Arts and Commerce stream.
There is no significance difference between sex and stream.

Sample: The sample was taken by purposive random method. Total 100 samples of college students from Dr. Rafiq Zakaria College Campus – I were taken out of which 50 were boys and 50 girls, in academic year 2010-2011.

Tools

Individual information sheet, Individual variables of students like (1) College Boys and Girls (2) Arts and Commerce stream. Mental Health Inventory. Developed by Dr. D.G. Bhatt and G.R. Gida (2006), Reliability was found 0.94 through Split Half method 0.87 through Spearman Brown method and validity was found 0.63. Research Design 2 x 2 Factorial Design was used.

Dr. FAISAL AHMED RAZVI
Assistant Professor & Head
Dept. of Physical Education
Dr. Rafiq Zakaria College For Women
Jubilee Park, Aurangabad -431001.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

A = Sex	B = Stream
A_1 = College Boys	B_1 = Arts
A_2 = College Girls	B_2 = Commerce

Procedure The scale of 'Mental Health Inventory'. The scale was made of two options. Option was either in 'agree' and 'disagree'. The response category has been provided each question. Response 'agree' mark '1' and response 'disagree' mark '0'. The maximum possible score is '40' and the minimum possible score is '0'. High score is to be interpreted as good mental health and low score is of poor mental health. Statistical Analysis Here, in this study the 'F' Test was conducted as a statistical technique to prove the aim. Result shows that sex and stream effects on the mental health of students of Dr. Rafiq Zakeria Campus – I College.

Result

Showing the summary of 'F' ratio on overall Mental Health of College student. ANOVA – 2 x 2

Source of Variables	Sum of Square	Df	Mean sum of Square	'F' ratio	Level of Significant
A	510.76	1	510.76	3.69	Significant
B	13.82	1	13.82	0.09	N.S.
AXB	41.58	1	41.58	0.30	N.S.
Error	13293.84	96	138.47		
Total	13860	99			

Discussion

As shown in the table – 1 sum of square 510.76, df = 1, Mean sum of square 181.38 and ratio 3.69 are at the level of significant 0.05. So in 'F' the 0.05 is not accepted because of gender difference in college, difference in mental health is observed. There is no mental health difference in various disciplines of study, so whether they are arts and commerce students no major difference in noted.

Conclusion

There is significant difference between boys and girls.
There is no significant difference between Arts and Commerce stream.
There is no significant difference between sex and stream.

Reference

- Pandya, S.K. (1997), First Edition, "Human Behaviour", National Book Trust, New – Delhi, India.
- Dave, C.B. and other (1994), "Statistics in Psychology", Viral publication, Ahmedabad. Pg-45.
- Contractor, B.M. (1998), Experimental Psychology and Statistics",
- Bhatia, H.R. (1981), 3rd Edition, "Abnormal Psychology", Oxford and IBH Publishing Co., New – Delhi.
- Bhatt, D.G. and Gida, G.R. (2002), "Mental Health Inventory", Saurashtra University, Rajkot, Gujarat.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Juiblee Park,
AURANGABAD. (M.S.)

Proceedings 2016-17 2017-20

Peer Reviewed Refereed and UGC Listed Journal (Journal No. 40776)

AN INTERNATIONAL MULTIDISCIPLINARY QUARTERLY RESEARCH JOURNAL

AJANTA

Dr. Rafiq Zakaria College for Women * Aurangabad *

IMPACT FACTOR / INDEXING
2016 - 4.205
www.sjifactor.com

Volume-VI, Issue-IV
English Part - IV
October - December - 2017

Dr. Sayeda Rukhsana Tabassum
Prof. & HOD Economics
Dr. Rafiq Zakaria College For Women
Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Aurangabad. (M.S.)

Comparison of GST and VAT

9

Miss. Shabina Khan
Lecturer, Department of Economics, Dr. Rafiq Zakaria College For Women, Aurangabad
Dr. Syeda Rukhsana Tabassum
Associate Prof., H.O.D., Department of Economics, Dr. Rafiq Zakaria College For Women, Aurangabad

Dr. Rafiq Zakaria College for Women Aurangabad

Abstract

Taxation in India is rooted from the period of Manusmriti and Arthashastra. Today's tax system is based on this ancient tax system which was based on the theory of maximum social welfare. The tax system was introduced in India during the British rule. India has the three-tier federal structure composed of the local or the central government, the state government and the local bodies all of which have the authority to levy taxes. Besides direct taxes such as the income tax, indirect forms of tax are collected such as the sales tax, VAT, service tax, stamp duty, customs and excise duty.

This paper emphasizes on what is VAT and GST and its comparisons. The objective of this paper is to

1) To study the meaning of VAT and GST
2) Benefits of VAT and GST
3) Comparison between VAT AND GST and to show how GST is useful than VAT

Keywords: Government, GST, VAT

Introduction

Before the introduction of VAT, India had a rudimentary sales tax system that caused the double taxation of commodities and multiplicity of taxes which increased the burden of purchase cascading. In an attempt to fix this the VAT System was brought in by the government.

VAT

VAT was implemented in India on 2nd June 2014 in all States and Union Territories except and Nicobar Islands and Lakshadweep Islands.

VAT is a kind of tax levied on goods and services when these commodity is ultimately consumer. VAT is a multi-stage tax which is levied at each step of production of goods and involves sales and purchase. VAT is levied on sale of good and services and paid by the government. The actual tax is levied from customers or end users who purchase this.

Dr. Syeda Rukhsana Tabassum
Asst. & H.O.D. Economics
Dr. Rafiq Zakaria College For Women
Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women * Aurangabad *

CONTENTS OF PART - IV

Sr. No.	Name & Author Name	Page No
1	Goods and Service Tax - A Game Changer **Dr. Prasanna Khadkikar**	1-4
2	Impact of GST on Common People in India **Prof. Pratima B. Pawar**	5-8
3	Comparison of GST & VAT **Dr. Ragini Rajendra Padhye**	9-11
4	Impact of GS Ton Inflation **Mr. Shaikh Gafoor Ahmed**	12-17
5	GST Impact on Indian Economy **Mr. Shaikh Hussain Imam**	18-21
6	An Introduction to GST **Dr. S. A. Bajpai**	22-27
7	Impact of GST on Indian Federation **Sarfaraz Shaikh** **Sayed Zeeshan Ali** **Ansari Zartab Jabeen**	28-32
8	GST - The Biggest Tax Reform in India **Dr. Sativa G. Joshi**	33-39
9	Comparison of GST and VAT **Miss. Shabina Khan** **Dr. Syeda Rukhsana Tabassum**	40-43
10	Impact of GST on Economic Growth of India **Kapil M. Wadode**	44-48
11	A Study of GST and its Impact on Higher Education Sector in India **Dr. Mahananda C. Dalvi**	49-52
12	Goods Service Tax: An Analysis **Dr. Memon Ubed**	53-60
13	The Impact of GST on Sports, Hospitality & Tourism Sectors **Prof. Manisha Waghmare** **Dr. Rama Dudhmande**	61-66
14	GST in India: An Overview **Shaikh Altamash Raza**	67-72

Dr. Syeda Rukhsana Tabassum
Prof. & H.O.D. Economics
Dr. Rafiq Zakaria College For Women
Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

Online International Interdisciplinary Research Journal, {Bi-Monthly}, ISSN 2249-9598, Volume 08, Mar 2018/Special Issue

The Oil Balance in India and the Implications for the Arab Oil Exporting Countries

Zaid Ali Zaid Al-Atwi[a], Syeda Rukhsana Tabassum[b]

[a] B.A.M University, Aurangabad, MS, India

[b] Associate Professor & Head of Department of Economics Dr Rafiq Zakaria college for Women Aurangabad, MS, India

Rafiq Zakaria College for Women * Dr. * Aurangabad

Abstract

India has become the third largest energy consumer in the world after China and the United States and is expected to increase the relative importance of India in the international oil market in the coming years for two reasons, the first reason is the size of the expected increase in population and the second reason is the expected growth of Indian economy, therefore, oil's contribution to total primary energy consumption has declined in India, but it is still ranks second in the energy mix after coal.

With the expected rise in energy demand in the future and the expected decline in the share of domestic production in meeting the Indian demand for oil inevitably will lead to increased dependence of India on oil imports, especially imports from Arab countries to cover domestic demand. As a result it must be given this promising market more attention, where must be a state of certainty of ensuring global demand for oil in the medium term especially the concept of energy security for India corresponds to the energy security of the Arab oil producing countries.

KEYWORDS: Oil – energy – Arab country – India

Introduction:

India is gaining significant importance in the world energy balance by being one of the main energy consuming countries in the world. As of the end of the first decade of Present century, it replaced Japan as the fourth energy consumer in the world after China, the United States and Russia. In 2015, India replaced Russia to be the third largest energy consumer in the world. Also India has become the third largest oil consumer in the world after the United States and China in 2015. Consequently, India's emergence as a major consuming and importing country in the world oil market is a worthy phenomenon, especially by the Arab countries, which have large oil reserves.

Purpose of the Study:

The aim of this paper is to look at the current and future balance of indian oil and to show the distinguished position of the Arab countries in the world oil market at present and in the future and what the major Arab oil producing countries can do to meet India's increasing oil needs.

For this purpose, the paper has been divided into three main parts: In the first part we reviewed the current and future status of the oil sector in India, In order to know the important and continuing role that India will play in relation to the expected increases in world demand for oil, it notes its domestic needs of crude oil in particular is constantly increasing, in return, its oil production is declining, which means more reliance on oil imports to cover those local needs of oil.

Dr. Syeda Rukhsana Tabassum
Prof & H.O.D. Economics
Dr. Rafiq Zakaria College For Women
Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
Volume: 04, Issue: 06, Nov. – Dec. 2017 eISSN NO. 2394-5362
Impact Factor (SJIF) - 4.935

2017

ناول نگاری کا عہد زریں: منشی پریم چند

Dr. Rafiq Zakaria College for Women
Aurangabad

ڈاکٹر سید فرحت نسرین
اسسٹنٹ پروفیسر شعبۂ اُردو
ڈاکٹر رفیق زکریا کالج فار ویمن، اورنگ آباد

منشی پریم چند اردو ناول نگاری میں ایک عہد کی حیثیت رکھتے ہیں وہ سارے رجحانات جو ابتدائی بیسوی صدی سے ۱۹۳۶ء تک اردو ناول نگاری میں رہے ہیں وہ کسی نہ کسی صورت میں پریم چند کی ناول نگاری میں موجود ہیں ان کی ناول نگاری پورے عہد کی عکاسی کرتی ہے۔ان کے زمانے کا سماج اپنے تمام تر مسائل کے ساتھ ان کی ناولوں میں نظر آتا ہے،اوران میں خواتین کے بے شمار مسائل بھی شامل ہیں۔

منشی پریم چند ایک ایسے فنکار ہیں ایک ایسے زندہ جاوید ناول نگار ہیں جنھوں نے کبھی بھی ساحل سمندر سے طوفان کا نظارہ نہیں کیا بلکہ طوفانی تھپیڑوں کا سامنا کیا اس کے بہاؤ کو اس کی طاقت کو خود محسوس کیا۔ان کی زندگی ہندوستان کے سیاسی،سماجی،اور معاشرتی حالات کے طوفان کے مدوجزر کو ان کی ناولوں میں دیکھا جاسکتا ہے۔

دھنپت رائے منشی پریم چند ۳۱ جولائی ۱۸۸۰ء کو پیدا ہوئے۔بنارس سے کوئی چار پانچ میل کے فاصلے پر لمہی نام کا ایک چھوٹا سا گاؤں ہے جہاں ان کا جنم ہوا۔ان کا تعلق کائستھ گھرانے سے تھا۔ان کے والد منشی عجائب لال ڈاک خانے میں بحیثیت کلرک ۲۰ روپئے ماہوار تنخواہ پاتے تھے۔وہ ایک مشترک گھرانے کے فرد تھے جس کی گزراوقات کا وسیلہ صرف ملازمت ہی نہیں بلکہ کھیتی باڑی بھی تھا۔والد نے ان کا نام دھنپت رائے رکھا اور سب پیار سے نواب پکارنے لگے۔یہ دونوں نام ہی منشی پریم چند کی زندگی میں الٹا اثر دکھاتے ہیں۔دھنپت رائے کو دھن کمانے کیلئے ساری زندگی جدوجہد کرنی پڑی اور نواب رائے نے ساری زندگی نوابی ٹھاٹ باٹ کا منہ تک نہیں دیکھا۔

پریم چند کے مطلع ادب پر طلوع ہونے سے پہلے اور ادب پر طلسمی داستانوں اور ہندی ادب پر بھگتی رس کا اثر غالب تھا۔لیکن ان کے آنے کے بعد اردو ہو یا ہندی ادبی محفل میں جب بھی ناول یا افسانے کے متعلق بات ہوگی تو اس کی ابتداء پریم چند کے ذکر خیر سے ہی ہوگی۔پریم چند سے پہلے اردو میں ناول نگاری کی داغ بیل مولوی ڈپٹی نذیر احمد نے ڈالی تھی۔اور اس کی روایت کو آگے بڑھانے میں سرشار شرر،رسوا کی کاوشوں کو بڑا دخل حاصل ہے ان لوگوں نے ناول کی ساخت کو بہت حد تک سنوارا۔اور اس کے موضوعات کو حقیقی زندگی سے قریب لانے کی کوشش کی۔نذیر احمد کی ناول نگاری کی بنیاد متوسط طبقے کی زندگی کی حقیقتوں کو بیان کرنا تھا۔نذیر احمد نے سب سے پہلا کارنامہ یہ انجام دیا کہ سلاطین وامراء

Dr. Syed Farhat Nasreen
M.A., Ph.D., NET
Head, Dept. of Urdu
Rafiq Zakaria College For Women
Aurangabad (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

१. सुधा अरोडा की कहानियों ने महिला जागरुकता

प्रा. डॉ. कुसूम राणा

सहायोगी प्राध्यापिका एवं विभाग प्रमुख एवं शोध निर्देशिका, डॉ. रफिक झाकेरिया कॉलेज फॉर वुमेन, जुबली पार्क, औरंगाबाद.

Dr. Rafiq Zakaria College for Women * Aurangabad *

साहित्य की अनेक विधाओं में से एक प्रमुख विधा है- कहानी। अपने छोटे आकार के कारण यह अपेक्षाकृत अधिक लोकप्रिय विधा रही है कहानिकार आपने जीवन मे आये किसी विशिष्ट पात्र या कोई अविस्मरणीय घटना का बयान कहानी के माध्यम से करता है। वैसे तो हर रोज ही हमारे आसपास इनती घटनाएँ घटित होती है, जिसपर बहुत कुछ लिखा जा सकता है। संबंध में प्रसिद्ध लेखिका सुधा अरोडा करती है- कहानी लिखते समय वास्तविक चरित्र तो दिमाग से ओझल हो जाते है बस वह केंद्रीय भाव बचा रहता है, जिसने दिमाग में खलल पैदा कर दिया था। और जिसके इर्द गिर्द नए सिरे से पात्र रचे जा सकते है। कई बार जीवन में देखे गये दो तीन किरदार कहानी के एक ही पात्र में सिमट जाते है और कभी -कभी जीवन में देखा - सुना एक पात्र दो तीन अलग अलग कहानियों में अलग-अलग भूमिकाए निभाता दिखाई दे जाता है।

आज की कहाहनी जीवन को बेहतर बनाने में, सामाजिक कुरीलियों के खिलाफ लडने मे, आदमी को उसके इर्द गिर्द फैली विसंगतियों के प्रति जागरुक कराने में सकारात्मक भूमिका निभा रही है। सुधाजीने महिलाओं से संबंधित, उनके नारी संवेदना को लेकर कुछ कहानियाँ लिखी है।

उनकी एक कहानी है करवाचौथी औरत यह कहानी करपाचौथ के व्रत के एक दिन की कहानी कहती है। कहानी के दो प्रमुख पात्र है एक सविता नामक स्त्री और दुसरी फ्लॉपी नामक कुतिया। घर का कुत्ता बेहद संवेदनशील प्राणी होता है। वह जब हमारे साथ होता है ता परिवार के सदस्य से बढ़कर हो जाता है। सब उसे फ्लॉपी के नाम से बुलाते है, जब कि, घर की मानकिन, दो बेटियों की माँ और एक साहब की बीवी अपनें नाम से कम और ओहदे सें अधिक जानी जाती है।

फ्लॉपी गले में पट्टा बांधने की आदी नही वह अपने मनसे अपना रास्ता तय करते हुए चलती है। उसका इलाका घर की दहलिज के बाहर भी है जब कि सविता का इसका दहलीज के भीतर ही सिमटा है। आज कल हिंदी फिल्मों में होली दीवाली की तरह करवाचौथके व्रत का त्यौहार अपने शादी के लाल जोडे, माँग टीके और मंगळसूत्र पहने, गुडीयासी सजीधजी औरते हाथ में थाल और चलनी से दिखते चांद में अपने पति की तस्वीर को देखती है। जो आज के उपभोक्ता बाजार में खासा बिकाऊ है। यहीं बात इस कहानी के दिखाई देती है।

दुसरी कहानी है डर - यह एक गृहिणी की रोज की रुढीन में खलल डालती एक दोपहर की कहानी है। आमतौरपर गृहिणी के दिन का एक बडा हिस्सा घरेलू कामकाज और बच्चों की पढ़ाई में चला जाता है। दोपहर का छोटा समय वह अपने लिए रखती है। घर की दीवारों में लगी शेल्म में रखे वह एक आकर्षिक कवरवाली किताब पहले हाथ में लेती है। यह किताब

DR. KUSUM RANA
HEAD
Dept. of Hindi
Dr. Rafiq Zakaria College for Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,

2017-18

Dr. Rafiq Zakaria College for Women * Aurangabad *

26

Democracy, Development and Globalilzation

Dr. Tanmay A. Paithankar
Head and Assistant Professor Department of Political Science, Dr. Rafiq Zakaria College for Women, Jubilee Park, Navkhanda, Aurangabad..

Introduction

The spread of globalization, during the last quarter of the twentieth century and the first decade of the twenty-first century, has coincided with the spread of political democracy across the world. Many new democracies emerged and many of the existing regimes shifted to democratic political models. For economists, globalization refers to the expansion of economic transactions and the organization of economic activities across political boundaries of nation-states. It can be defined as a process associated with increasing economic openness, growing economic interdependence, and deepening economic integration in the world economy. However its implications and consequences are not confined to the economy alone but extend to polity and society. The geographical spread of democracy is notable across many parts of Asia, Latin America and Africa. The development of democracy also gave birth to new dimensions of development. The developmental questions became multidimensional and demanded inclusiveness in all sectors of state. This paper analyses the concept of democracy, development and impact of globalization.

Democracy

Democracy is a form of government in which all people have an equal say in the decisions that affect their lives. Ideally, this includes equal participation in the proposal, development and passage of legislation into law. It can also encompass social, economic and cultural conditions that enable the free and equal practice of political self-determination. Democracy implies that form of government in which the sovereign power of the state is vested in the people as a whole and the government derives its ultimate authority from the people. People are the ultimate source of the state power and they take part in the government directly or through their representatives.

Democracy is considered by the larger majority of the people around the world as a superior formof government. It may be noted here that democracy is based on freedom, equality and socialjustice. The citizens in a democracy enjoy certain basic civil, political and legal rights and freedoms. At the same time, a democratic government must create equal opportunities for all in the socio-economic spheres. In this context, democracy has been defined as a society based

Dr. Tanmay A. Paithankar
Professor & Head
Dept. of Pol. Science
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park, Aurangabad - 431001.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

"Knowledge Scholar"
An International Peer Reviewed E-Journal Of Multidisciplinary Research
Volume: 04, Issue: 04, Jul. - Aug. 2017 eISSN NO. 2394-5362
Impact Factor (SJIF) - 4.935

2017-18

''हुज्जातूल इस्लाम मौलाना कासिम नानोतवी यांचे भारतीय स्वातंत्र्य संग्रामातील योगदान''

प्रा. डॉ. अब्दुल्ला चाऊस
सहाय्यक प्राध्यापक,
इतिहास विभागप्रमुख,
डॉ.रफीक झकेरीया कॉलेज फॉर वुमेन्स,
औरंगाबाद (महाराष्ट्र) इंडिया

Dr. Rafiq Zakaria College for Women * Aurangabad *

प्रस्तावना :

मौलाना कासिम नानोतवींचा जन्म उत्तर प्रदेश राज्यातील सहारनपूरच्या नानोता या खेडेगावी इ. स. १८३२ (हिजरी १२४८) मध्ये शेख समद अली यांच्या घरी झाला.[1] मौलानाचे पूर्वज मौलवी मोहम्मद हाशम यांना मुगल सम्राट शाहजहाँ याने नानोता जहागीरमध्ये दिले होते.[2] सय्यद अबूबकर सिद्दीक रजी अल्लाह-हुतालाहचे ४४ व्या घराण्याशी त्यांचा संबंध होता.[3]

सुरुवातीचे शिक्षण त्यांनी आपल्या गावी नानोता येथे घेतले. मक्तब (शळा) मध्ये शिक्षण घेण्यासाठी देवबंदला गेले. देवबंदमध्ये मौलवी महेताबकडून शिक्षण घेतले. तेथून ते आपले आजोबा यांच्याकडे गेले. जे सहारनपूरचे नामवंत वकील होते. येथे त्यांनी मौलवी नवाजकडून अरबी सर्फ व नहूचे प्राथमिक शिक्षण पूर्ण केले. हजरत मौलाना ममलूक अली ननोतवी, मौलानाचे काका हे अरेबीक कॉलेज दिल्लीत प्राध्यापक होते. त्यांनी मौलानांना आपल्या सोबत दिल्ली येथे शिक्षणासाठी नेले. त्यांनी मौलानांचा प्रवेश अरेबीक कॉलेजमध्ये केला. मौलानांचा त्या महाविद्यालयात प्रवेश घेतला. कॉलेजमध्ये सर्वत्र अशी चर्चा झाली की, मौलानांना गणिताचे कोणतेही उदाहरण (प्रश्न) दिले की ते चटकन सोडवतात. त्या काळात मुन्शी जकौउल्ला यांनी गणिताचे काही जटिल प्रश्न आणले होते. ते प्रश्न बिनचूक सोडवल्यामुळे मौलाना कॉलेजमध्ये अतिशय लोकप्रिय झाले. परंतु मौलानांनी वार्षिक परीक्षा न दिल्याबद्दल कॉलेजच्या इंग्रज प्राचार्यालाही दु:ख झाले होते.

त्या काळात प्रसिद्ध बुद्धीवान व समाजसुधारक सर सय्यद अहेमद खान यांनी मौलानांच्या बुद्धीमत्ता व उच्च विचारांसंबंधी असे उद्‌गार काढले होते, "लोकांचे असे म्हणणे होते की, दिल्लीत मोहमंद इसहाक साहेब सारखा गुणवान माणूस जन्माला येणार नाही, परंतु मौलवी साहेबांनी आपले उच्च

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. ABDULLAH CHAOUSH
HEAD
Department of History
Dr. Rafiq Zakaria College For Women

2017-2018

ISSN NO-2278-0807

RATIONAL EMOTIVE BEHAVIOR THERAPY (REBT) AND ANXIETY DISORDER

SAYYED SHAMIM RABBANI*

M.K. TAJNE**

Abstract :

The purpose of this paper is to provide detailed descriptions of specific clinical interventions that can be used by REBT therapists working with all human being like male female students, adults who are experiencing difficulties with anxiety. It is worth noting that anxiety disorders among the most commonly occurring mental and emotional problems in the life of anyone. REBT is first and foremost, a system devoted to the practice of psychotherapy. REBT has been found to be effective in the treatment of anxiety disorders such as obsessive-compulsive disorder (OCD) and posttraumatic stress disorder (PTSD). There is a gap, however, between reports of controlled clinical trials and actual clinical use of the methods of REBT in general medical and psychiatric settings. In Rational Emotive Behavior Therapy for Anxiety, clients are taught how to examine and then challenge there negative beliefs and eventually embrace healthier more rational and productive thoughts.

Keywords: Rational Emotive Behavior Therapy (REBT), Anxiety.

Dr. Rafiq Zakaria College for Women Aurangabad

What is REBT:

Rational Emotive Behavior Therapy was first called Rational Therapy, later Rational Emotive Therapy, then changed to Rational Emotive Behavior Therapy. It was first introduced in 1955 by Dr. Albert Ellis who had become increasing frustrated with the ineffectiveness of psychotherapy. Ellis drew from his knowledge of philosophy and psychology to devise a method which he believed was more directive, efficient, and effective. Rational Emotive Behavior Therapy's (REBT) central premise is that events alone do not cause a person to feel depressed, enraged, or highly anxious. Rather, it is one's beliefs about the events which contributes to unhealthy feelings and self defeating behaviors.

Rational Emotive Behavior Therapy teaches the client to identify, evaluate, dispute, and act against his or her irrational self- defeating beliefs, thus helping the client to not only feel better but to get better.

Rational Emotive Behavior Therapy is an active-directive, solution-oriented therapy which focuses on resolving emotional, cognitive and behavioral problems in clients. Rational Emotive Behavior Therapy is one of the first forms of Cognitive Behavior Therapy and was first expounded by Ellis in 1953. Fundamental to Rational Emotive Behavior Therapy) is the concept that emotional suffering results primarily, though not completely, from our evaluations of a negative event, not solely by the events themselves. In other words, human beings on the basis of their belief system actively, though not always consciously, disturb themselves, and even disturb themselves about their disturbances.

The Rational Emotive Behavior Therapy framework assumes that humans have both rational and irrational tendencies. Irrational thought/images prevent goal attainment, lead to inner conflict, lead to more conflict with others and poor mental health. Rational thought/images lead to goal attainment and more inner harmony. In other words rational beliefs reduce conflicts with others and improved health.

One of main objectives in Rational Emotive Behavior Therapy is to show the client that whenever unpleasant activating events occur in people's lives, they have a choice of making themselves feel healthily and self-helpingly sorry, disappointed, frustrated, and annoyed, or making themselves feel unhealthily and self-defeatingly horrified, terrified, panicked, depressed, self-hating, and self-pitying.

Goals of Rational Emotive Behavior Therapy

The main goal of REBT is to rid the patients of their current negative philosophies and replace them with ones that are more realistic and flexible as a means of finding happiness. Doing this allows patients to experience and enjoy involvement, love, self-actualization, spontaneity, and commitment. It is based on a few principles: that you are responsible for your emotions as well as your actions, and your irrational thinking causes you to emotionally and behaviorally respond negatively. You can overcome these negative responses by thinking in a more realistic way, from there making those thoughts a part of yourself. This allows patients to fully accept themselves by changing their perspective to something more reality-grounded.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

2017-18

Dr. Babasaheb Ambedkar Marathwada University,
AURANGABAD -431 004 Maharashtra, India
NAAC Re-accredited "A" Grade

स्थापना वर्ष १९५८

डॉ. बाबासाहेब आंबेडकर मराठवाडा विद्यापीठ,
औरंगाबाद-४३१ ००४ महाराष्ट्र, भारत
नॅक समिती तर्फे 'अ' दर्जा प्राप्त

विद्यावाचस्पती विभाग

Ph.D. Unit
PH.D. Office :- (0240) 2403122 WEB SITE : www.bamu.ac.in : http://bamua.digitaluniversity.ac.E-mail : phdsection@bamu.ac.in

Ref. No. Ph.D./2017-18/6391

Date:- 13/04/2018
17

To,
Dr. Chishty Syed Qadeeruddin,
Assistant Professor,
Dr. Rafiq Zakaria College for Women
Navkhanda Aurangabad.

Dr. Rafiq Zakaria College for Women * Aurangabad *

Subject:- Application for Recognition as Research Guide in the subject of **Physics,** under the faculty of **Science & Technology.**

Sir/Madam,

With reference to the subject noted above, I am to inform you that, **the Boards of Dean at its meeting held on 19/12/2017** has accepted the recommendations of the Research & Recognition Committee dated **06-10-2017,** accordingly you have been recognized as **Research Guide** in the subject of **Physics** under the Faculty of **Science & Technology.**

17-4-18

Pro-Vice Chancellor

Dr. S. Q. Chishty
HEAD
Department of Physics
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women.
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

http:// www.klibjlis.com

ISSN No. 2394-2479

CHANGING ROLE OF LIBRARY & INFORMATION PROFESSIONALS

Dr. Siddiqui Eraj Azeeza*

* **Librarian**
Dr. Rafiq Zakaria College for Women,
Aurangabad, Maharashtra, India

QR Code

Dr. Rafiq Zakaria College for Women * Aurangabad

INTRODUCTION

In accordance with the above-mentioned emerging scenario, the Library & Information Science Professional's role will undergo drastic changes. Today the word "Library" itself is being replaced by the term "information center" and the world 'Librarian' is replaced by different terms.

UNESCO guidelines identifies these professionals as

- Information Educator
- Information Researcher
- Information Manager
- Information Analyst
- Information Distributor.
- Information Scientist

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda Jubilee Park,
AURANGABAD. (M.S.)

It is interesting to note that all these terms associate librarians with "Information." This is to stress that in the years to come, documents or published volumes will no longer be interested in searching a document or to locate information but will expect it to be available across the desk or ready or in the electronic form. Library and information science is a kind of professional education where students get both theoretical as well as practical training of techniques of library organization, management and processes of information retrieval.

A professional education should be allowed to run with proper assessment of its quality, reliability, and efficiency of the trained personnel and most important as per the job opportunities in the subject. In the meanwhile information technology (IT) has brought a challenge to the job avenues of this course. There is no doubt that IT has brought the increasing efficiency and quality of library services which

2017-18

Impact Factor (SJIF) - 5.114 http:// www.klibjlis.com eISSN No. 2394-2479

DIGITAL LIBRARIES

Dr. Siddiqui Eraj Azeeza*

Dr. Rafiq Zakaria College for Women Aurangabad

***Librarian,**
Dr. Rafiq Zakaria College for Women,
Aurangabad, Maharashtra, India.

QR Code

ABSTRACT: - *A digital library is nothing but the transformation from traditional library. The digital libraries concept come into existence in the 21st century. Virtual library, electronic library, library without walls and digital library are synonymous to each other. In this study*

KEYWORDS: Digital Library.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Introduction

The terms, which have been in vogue at different times, include paperless library, virtual library, and electronic library online library, desktop library, and polyglot library, library without boundaries and more recently digital libraries. The term Digital library in broad sense is a computerized system that allows users to obtain a coherent means of access to an organized electronically stored repository of information and data Collection in which complete contents of documents are created and converted to computer possible form for online access. Online databases and CD-ROM information products. Computer storage devices on which information repositories reside such as optical disc, Juke bases DVD ROM towers etc.Database including library catalogue accessible through the Internet. Computerized networked library system.

The digital library is making the library undergo a change in the paradigm of its role to create organize and distribution of information resources. A digital library is a distributed electronic collection that covers virtually all fields of human endeavor to serve the defined community Digital libraries are logical extension and augmentations of physical library. They extend and augment their physical counterparts by extending existing resources and services and enable development of new possibilities for information access and Retrieval in other worlds Electronic library based on

Dr. (Mrs.) Siddiqui Eraj Azeeza
Librarian
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park Aurangabad

497

BENEFITS OF ICT BASED PRODUCTS & SERVICES FOR THE LIBRARY

Dr. Siddiqui Eraj Azeeza*

***Librarian,**
Dr. Rafiq Zakaria College for Women,
Aurangabad, Maharashtra, India.

Dr. Rafiq Zakaria College for Women Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

QR Code

INTRODUCTION

In the era of information explosion, the tremendous amount of information is being generated and transmitted from every corner of the world in the form of print materials, research articles, lectures, presentations video conferencing, technical reports, standards and patents etc. In the early stages of 20th century, libraries were facing the problems, of how to cater and fulfill the users' demand in minimum span of time. The solution was to adopt the ICT based products & services. To deal with new challenges and increasing demand of users, libraries are reconsolidating; reshaping, redesigning and repackaging their services and information products by incorporating ICT based products & services.

Owing to ICT enabled products & services, libraries have changed the way, in terms of the provision of information services. These products and services are the integration of computer and communication technologies, which can be, apply, to store and disseminate the information. They have changed the traditional practices of libraries in delivery of services. In the present scenario, users can have access to a variety of information and digital archives of libraries from any corner, as well as can get update activities of libraries by the

Dr. (Mrs.) [illegible] Librarian, M.Sc., PhD,
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad.

2017-18

Impact Factor (SJIF) - 5.114 http:// www.klibjlis.com eISSN No. 2394-2479

SOCIAL NETWORKS IMPACT ON ACADEMIC LIBRARIES

Dr. Siddiqui Eraj Azeeza *

*** Librarian,**
Dr. Rafiq Zakaria College for Women,
Aurangabad, Maharashtra, India.

Dr. Rafiq Zakaria College for Women * Aurangabad *

QR Code

Abstract: - *Social Networking Sits (SNSs) are playing an increasingly important role as information sources for travelers. The goal of this study is to investigate Importance of Social Networking Sits in Libraries. The number of libraries which adopt SNSs is increasing to explore the respondent's attitude towards the use of social media in marketing of library resources and services. To provide possible implication of social media for marketing library and information products and services. To investigate the problems in utilizing social media for marketing purposes in libraries. The paper highlights the Purposes of Social Media Usage in Libraries, Purposes of Social Media Usage in Libraries, examples of Social Media websites, Social Networking Opportunities for Libraries, Impact of use of Social Networking Sits, Problems use of Social Networking Sits.*

Keywords: Social Networking Sites (SNS), Social Media, Academic Library, Library services.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Introduction

The changing technology, explosion of information and the transition of academic libraries from print to electronic have influenced the user behavior. Most of the libraries, especially academic libraries are continued to be hybrid (print and electronic) libraries. Compare to other libraries, academic college libraries need special attention in developing collection, systems and services, keeping the hanging-needs and information seeking behavior of the users. The present study has undertaken a survey for assessing the exiting situation, perception and expectations of users in academic college libraries in India.

Imagine a time when social network media becomes an integral part of life. In fact, there is no need to imagine anymore. as Face book and Twitter use soars beyond the combined total of 900 million users. Social network media is now main stream. Many businesses, cultural organizations and other institutions are leveraging social network media to achieve their strategic goals. While many libraries already have a social network media presence via Face book and Twitter

Dr. (Mrs.) Siddiqui Eraj Azeeza
M.Sc. (Phy.), M.Lib.I.Sc., Ph.D.
LIBRARIAN
Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad

2017-18

ISSN: 2319-8435 IMPACT FACTOR : 3.1028(UIF)

e-LIBRARY SCIENCE RESEARCH JOURNAL

VOLUME - 5 | ISSUE - 8 | JUNE - 2017

Dr. Rafiq Zakaria College for Women, Aurangabad

SCIENTOMETRIC ANALYSIS OF INDIA'S RESEARCH OUTPUT ON SEISMOLOGY (2007 – 2016)



Vaishali .B. Kanekar[1] and Dr. Siddiqui Eraj Azeeza[2]
[1]Research Scholar , Dept .of Library & Information Science , Dr. Babasaheb Ambedkar Marathwada University, Aurangabad. (MS)
[2]Librarian , Dr. Rafiq Zakaria College for Women, Aurangabad. (M.S.) , India.

ABSTRACT :

The present study deals with scientometric study of Seismology literature during 2007-2016 using Scopus database. The present study is based on 667 articles contributed by the authors in India's research output on Seismology. it was found that Collaborative Researchers are Predominant than Solo Researchers. The mean value for the overall degree of collaboration for the 2007-2016 is found to be 0.92. Hyderabad ranked first place with 100 (14.99%) followed by Mumbai and Chennai. CSIR-National Geophysical Research Institute was the most prolific intuition in the study.

KEYWORDS : *Scientometrics, India, Seismology.*

INTRODUCTION:

Scientometrics is the quantitative study of the disciplines of science based on published literature and communication. In 1969, vassily V. Nalimov and Z.M. Mulchenko coined the Russian equivalent of the term 'scientometric' ('nalkometriyas') (Nalimov and Mulchenko, 1969). As the name would imply, this term is mainly used for the study of all aspects of the literature of science and technology. Scientometrics is the branch of science that describes the output traits in terms of organizational research structure, resource inputs and outputs, develops benchmarks to evaluate the quality of information output. (Ramchandran, 2012),

SEISMOLOGY:

Seismology is the study of earthquakes and seismic waves and what they tell us about Earth structure. Seismology is a data-driven science and its most important discoveries usually result from analysis of new data sets or development of new data analysis methods. Most seismologists spend most of their time studying seismograms, which are simply a record of Earth motion at a particular place as a function of time.

REVIEW OF LITERATURE:

Amsaveni & Ramesh (2016) analyzed of 10464 publications published by scientists during 1989 to 2015 and indexed by Web of Science. The study indicates that The highest publications are 804 in 2015 with 884 TGCS followed by 707 papers in 2013 with 3149 TGCS and 678 papers in 2014 with 2066 TGCS.

Gupta (2016) have studied the growth and the contribution of research literature output of Library Consortia. The study shows that out of 87 articles in the field of Library Consortia, a total number of 23 articles (26.44%) are written during 1980 to 2015.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. (Mrs.) Siddiqui Eraj Azeeza
M.Sc. Ph.D.

महानगरपालिका औरंगाबाद
ईपीबीएक्स:(०२४०)२३३३५३६-४०
दूरध्वनी:(०२४०)२३३११९४
Website: www.aurangabadmahapalika.org
Email: commissioner@aurangabadmahapalik

जा.क्र.मनपा/श.अ./२०२१/४५५ दिनांक:-१०/३/२०२१

वाचा:- १) आपत्ती व्यवस्थापन अधिनियम २००५ कलम ३४ मधील पोट कलम ग (c) व ड (m)
२) कार्यालयीन आदेश क्र.मनपा/मजा/स्वीस/२०२०/८२ दिनांक १८.०३.२०२०.
३) जा.क्र.मनपा/आरोग्य/२३०/२०२० दिनांक ०६.१०.२०२०.

आदेश

ज्याअर्थी महाराष्ट्र शासन, सार्वजनिक आरोग्य विभाग, मंत्रालय, मुंबई दिनांक १३ मार्च २०२० च्या अधिसूचने अन्वये राज्यात कोरोना विषाणू (COVID-19) या उद्भवलेल्या संसर्गजन्य आजारामुळे आरोग्य विषयक आपत्कालीन परिस्थिती निर्माण झाली आहे. या परिस्थितीत व्यक्ति/रुग्ण यांचे करीता कोव्हीड केअर सेंटर, अलगीकरण/ विलगीकरण कक्षाची व्यवस्था करण्यात येत आहे. या अंतर्गत पूर्वी अधिग्रहीत केलेली डॉ.रफिक झकारीया महाविद्यालय फॉर वुमेन (नवखंडा महाविद्यालय) ची इमारत कोरोना बाधीत रुग्णांची संख्या कमी झाल्यामुळे संदर्भ क्र.३ च्या पत्रानुसार पुन्हा आपल्या ताब्यात देण्यात आली होती. मात्र सद्यस्थितीत कोरोना रुग्ण संख्येत वाढ झाल्याने डॉ.रफिक झकारीया महाविद्यालय फॉर वुमेन (नवखंडा महाविद्यालय) इमारती मध्ये विलगीकरण कक्ष/कोव्हीड केअर सेंटरसाठी कार्यान्वीत करण्यात येत आहे.

त्याअर्थी उपरोक्त अधिनियमातील कलमाचा वापर करुन मी प्रशासक, महानगरपालिका औरंगाबाद असे आदेशीत करीत आहे की, सदर आजाराच्या प्रादुर्भाव रोखण्याच्या दृष्टीने व प्रतिबंधात्मक उपाय योजनांकरीता शासनाच्या मार्गदर्शक सूचनेनुसार कोरोना विषाणु बाधीत व्यक्ति/रुग्ण व संशयीत रुग्ण यांचे करीता कोव्हीड केअर सेंटर, अलगीकरण/विलगीकरण कक्ष तातडीने तयार करणेसाठी **डॉ.रफिक झकारीया महाविद्यालय फॉर वुमेन (नवखंडा महाविद्यालय) इमारत**, तेथे असलेल्या सर्व मुलभूत सुविधांसह व कार्यरत कर्मचा-यांसह पुढील आदेशापर्यंत अधिग्रहीत करण्यात येत आहेत.

त्याअर्थी उक्त नमुद प्रमाणे **डॉ.रफिक झकारीया महाविद्यालय फॉर वुमेन (नवखंडा महाविद्यालय) इमारत** मधील सर्व खोल्या/हॉल, तेथे असलेल्या सर्व मुलभूत सुविधांसह शहर अभियंता तथा नोडल अधिकारी, महानगरपालिका औरंगाबाद किंवा शहर अभियंता यांनी नियुक्त केलेले अधिकारी यांच्या ताब्यात देण्यात यावे ही विनंती.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

प्रशासक
महानगरपालिका औरंगाबाद.

प्रत कार्यवाहीस्तव :
१. प्राचार्य, डॉ.रफिक झकारीया महाविद्यालय फॉर वुमेन (नवखंडा महाविद्यालय), औरंगाबाद.
२. शहर अभियंता तथा नोडल अधिकारी, महानगरपालिका औरंगाबाद.
३. आरोग्य वैद्यकीय अधिकारी, महानगरपालिका औरंगाबाद.

University of South America

The Senate of the University of South America

hereby makes known that

DR.MAQDOOM MOHI-UDDIN FAROOQUI

has been conferred the Honorary Degree of

Doctor of Letters (D. Litt.)

he / she having been recommended by

Dr. S. Radhakrishnan Research & Development Centre

India

Given under the seal of the University.

No HD17696IN
Date 29th September 2017
Place Montevideo

Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park
AURANGABAD. (M.S.)

Glocal Environment & Social Association

New Delhi
http://www.gesa.org.in

The Executive Council of GESA hereby confers

DR. SARVEPALLI RADHAKRISHNAN EDUCATION PROMOTION AWARD

on

Prof. Maqdoom Farooqui

Principal
Dr. Rafiq Zakaria College for Women Aurangabad (MH)
for his commendable contribution in the field of

Inspiring Works in Education.

This Award is presented to him during
International Web Conference (IWC 2020) on

Safe Water, Sanitation and Hygiene for Health

held on 9th, 10th & 11th November, 2020.

Dr. Rafiq Zakaria College for Women Aurangabad

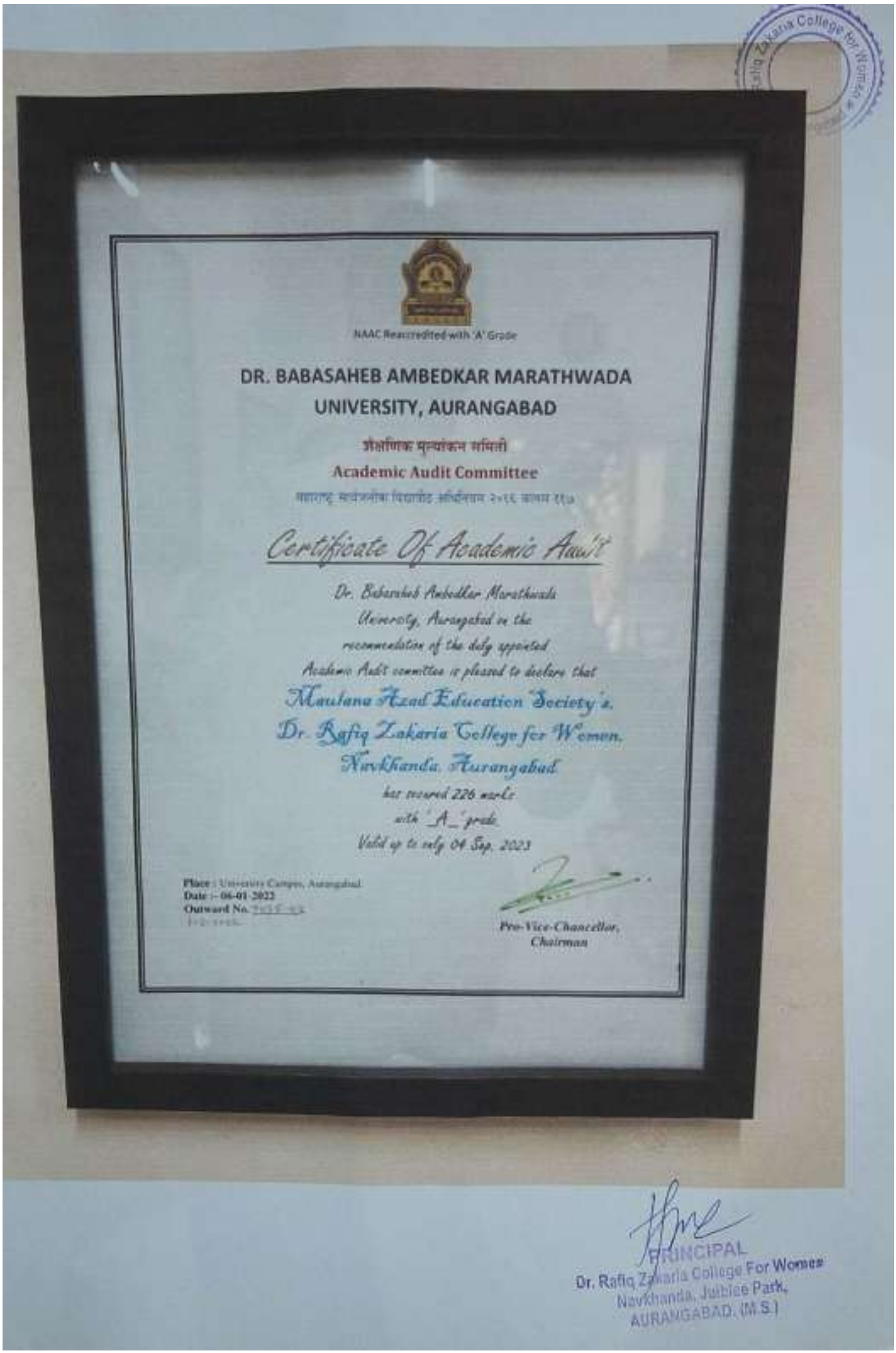
Dr. Sunita Arya
Secretary, Membership Affairs, GESA

Smt. M. Verma
Gen. Secretary, GESA

Organizers

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nakhanda, Jubilee Park,
AURANGABAD (M.S.)

Reg. office: 14E/4A Jawahar Lal Nehru Road, Prayagraj-211002



NAAC Reaccredited with 'A' Grade

DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY, AURANGABAD

शैक्षणिक मूल्यांकन समिती

Academic Audit Committee

महात्मा फुले शैक्षणिक विद्यापीठ अधिनियम २०१६ कलम ११७

Certificate Of Academic Audit

Dr. Babasaheb Ambedkar Marathwada
University, Aurangabad on the
recommendation of the duly appointed
Academic Audit committee is pleased to declare that

Maulana Azad Education Society's
Dr. Rafiq Zakaria College for Women,
Navkhanda, Aurangabad

has secured 226 marks
with "A" grade
Valid up to only 04 Sep. 2023

Place : University Campus, Aurangabad.
Date :- 06-01-2022
Outward No. [illegible]

Pro-Vice-Chancellor,
Chairman

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



SIDRA BAHUUDESHIYA VIKAS SANSTHA

Govt. Registered Society & ISO 9001-2015 Certified

Certificate

of

College with Academic Excellence Award

Presented to

Dr. Rafiq Zakaria College for Women

Navkhanda, Bhadkal Gate
Aurangabad, Maharashtra

SBVS National Education Awards 2019-20

In Recognition to Outstanding Contribution in the field of Education.

Place
Aurangabad, Maharashtra
India

Date
05-February-2020

sbvsaurangabad@gmail.com
www.sbvsaur.org

Signatory Authority
SBVS

Zakaria College for Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



ISO 50001:2018 Energy Management System

ISO 50001:2018 Certificate Of Registration

Geotek Global Certification Pvt. Ltd.

hereby certify that the organization

Dr. Rafiq Zakaria College for Women

Navkhanda, Jubilee Park, Aurangabad 431001, Maharashtra, India

has implemented and maintains an **Energy Management System** for

Scope :

To Evolve and Impart Comprehensive Higher Education to Girls Students of Graduation, Post-Graduation, Doctoral & Certificate Courses in Arts & Sciences.

An audit was performed and proof has been furnished that the requirements of international standard detailed below ..

Standard	: ISO 50001:2018
Certificate No.	: 22.GGCS.IN.500144
Certification Date	: 05th September 2022
Cert. Expiry Date	: 04th September 2025

Geotek Global

Chief Executive Officer

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women
Aurangabad



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



ISO 14001:2015 Environmental Management System

ISO 14001:2015 Certificate Of Registration

Geotek Global Certification Pvt. Ltd.

hereby certify that the organization

Dr. Rafiq Zakaria College for Women

Navkhanda, Jubilee Park, Aurangabad 431001, Maharashtra, India

has implemented and maintains an Environmental Management System for

Scope :

To Evolve and Impart Comprehensive Higher Education to the Students of Graduation, Post-Graduation, Doctoral & Certificate Courses in Arts & Sciences.

An audit was performed and proof has been furnished that the above system fulfils the requirements of international standard detailed below :

Standard	: ISO 14001:2015
Certificate No.	: 22.GGCS.IN.140209
Certification Date	: 05th September 2022
Cert. Expiry Date	: 04th September 2025

Geotek Global Certification Pvt. Ltd.

Reg. No. 201922137Z

Chief Executive Officer

Geotek Global Certification Pvt. Ltd
G/F, Raj Legacy, Near Bramhand Bhuvan T.P.S. 1A Road,
Thane (West), Pin 400607, Maharashtra, India

Geotek Global Certification Pvt. Ltd is accredited by International Management Accreditation Board (Singapore)
61 Ubi Ave 1 #03-10/11, Singapore 408939

The continued validity of the certificate is conditional on compliance with the terms and the conditions of Geotek Global Certification Pvt. Ltd. - Certification Scheme Regulations. Validity of the certificate may be verified on following websites:
www.geotek.co.in and accreditation body's website: www.imab.asia

Dr. Rafiq Zakaria College for Women
Navkhanda, Jubilee Park, Aurangabad 431001

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD.



Certificate

This is to certify that Dr. Rafiq Zakaria College for Women, Navkhanda, Aurangabad is now a Recognized Social Entrepreneurship, Swachhta & Rural Engagement Cell (SES REC) Institution. The Institution has successfully framed the SES REC Action Plan and constituted ten working groups for improving facilities in the Campus and the Community/Adopted Villages in the areas of Sanitation & Hygiene, Waste Management, Water Management, Energy Conservation and Greenery post COVID-19, along with the observation of three environment, entrepreneurship and community engagement related days to inculcate in faculty, students and community, the practices of Mentoring, Social Responsibility, Swachhta and Care for Environment and Resources.

Date of Issue: 27 Aug 2020

Dr. W G Prasanna Kumar
Chairman

Mahatma Gandhi National Council of Rural Education
Department of Higher Education, Ministry of Education
Government of India

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



CREST

RESEARCH AND DEVELOPMENT FOUNDATION

Registration under Societies Registration Act, 1860 (Section 21) Govt. of India and ISO 9001 : 2015

CLEAN AND GREEN CAMPUS AWARD

Honouring

Dr. Rafiq Zakaria College for Women

Bhadkal Gate, Jubilee Park
Aurangabad, Maharashtra

In Appreciation & Recognition to your Contribution,
Dedication & Professionalism in the Filed of Education

HIGHER EDUCATION EXCELLENCE AWARD 2021

President
CREST

16-April-2021
Date

Sr. No. CREST/HEEA/2021/0116

Email:- contact.crestrd@gmail.com
Website:- www.crestdf.org Contact:- 7056827888

Dr. Rafiq Zakaria College for Women Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women
Aurangabad



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



Dr. Rafiq Zakaria College for Women

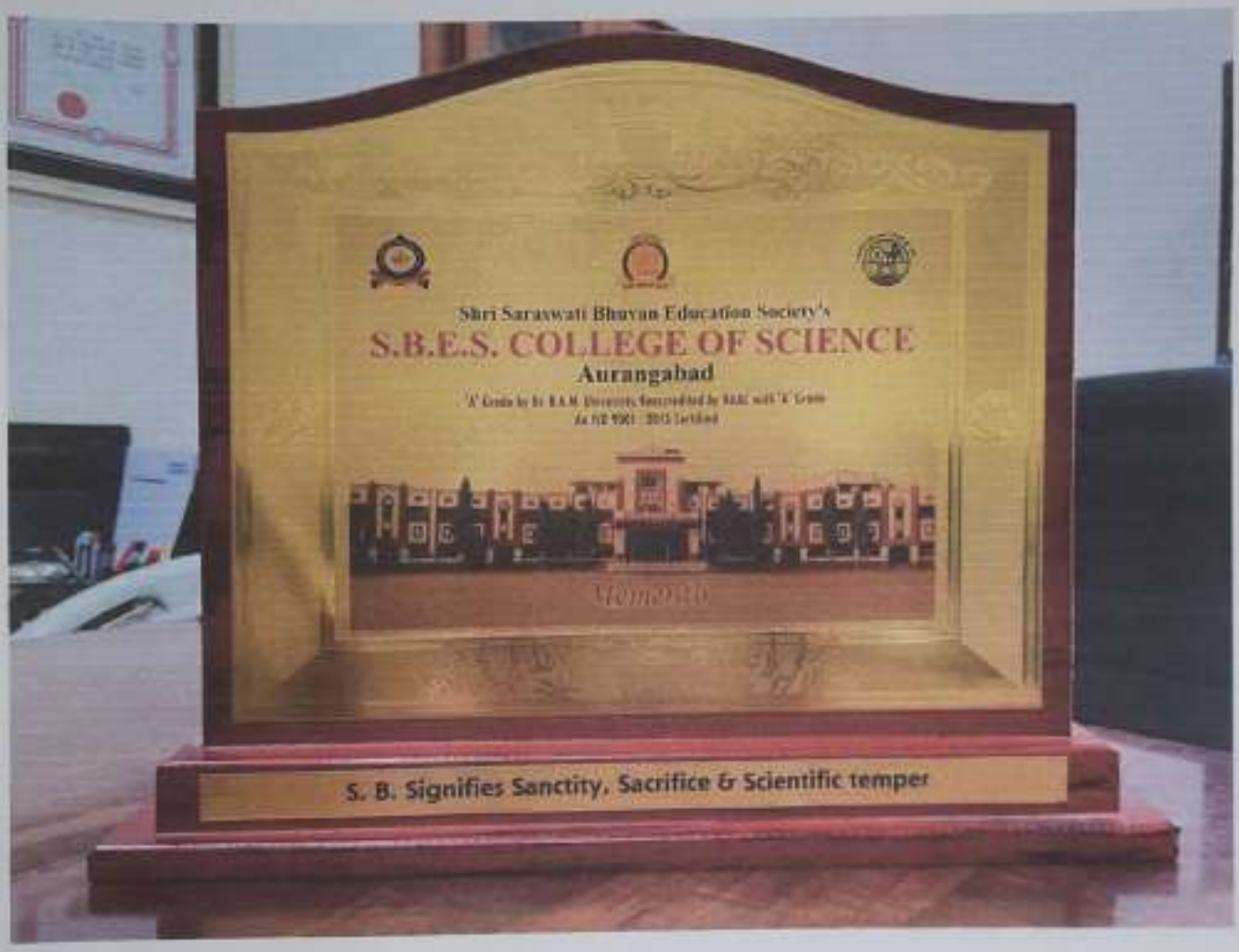
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD (M.S.)

Dr. Rafiq Zakaria College for Women
Aurangabad



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nirahanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women
Aurangabad



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Naukhanda, Jubilee Park,
AURANGABAD (M.S.)



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

डॉ. ए. ए. कादरी मानसिक आरोग्य केंद्र के सहयोग से
ऑल इंडिया पयाम-ए-इन्सानियत फोरम और
मौलाना आझाद कॉलेज ऑफ आर्ट, सायन्स ॲन्ड कॉमर्स
द्वारा आयोजित ।



शाम-ए-एकता
HUMANITY FIRST

मानसिक स्वास्थ के लिए सामाजिक मुसंवाद

११ जनवरी २०२० ~

मा. डॉ. मखदुम फारुकी
(संस्थापक, सिता एज्युकेशनल ट्रस्ट)

कार्यक्रम के अध्यक्ष ~
डॉ. ए. ए. कादरी
(मानसिक आरोग्य केंद्र, औरंगाबाद)

आयोजक ~

डॉ. मेराज कादरी	डॉ. मजहर सलमान फारुकी	मौलाना मुजीब फारुकी
मानसोपचार तज्ञ	प्राचार्य, मौलाना आझाद कॉलेज, औरंगाबाद	ऑल इंडिया पयाम-ए-इन्सानियत फोरम

Dr. Rafiq Zakaria College For Women
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navakranda, Jubilee Park.



Dr. Rafiq Zakaria College for Women Aurangabad
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Naukhanda Jubilee Park,
AURANGABAD. (M.S.)

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nauk... Jubilee Park,
AURA... (M.S.)



Dr. Rafiq Zakaria College for Women
Aurangabad
PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Naykhanda, Jubilee Park,
AURANGABAD. (M.S.)



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



SPRINGER NATURE

ADVANCING DISCOVERY

Thank you for serving as a peer reviewer

Your contributions are important and do not go unnoticed

Thank you for helping us publish important research during an unprecedented year by reviewing papers for Springer Nature journals. The past year presented unique challenges that have heightened the importance of publishing sound, expertly reviewed research. We appreciate the time you took away from your personal life and research to accept and submit reviews.

Your review activity at Springer Nature

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park.
AURANGABAD. (M.S.)

Mia Vulović Yesterday

to me

Dear Dr. Farooqui,

Due to your involvement in the field and the research you published in your paper, "Organocatalyzed domino reactions: diversity oriented synthesis of pyran-annulated scaffolds using in situ-developed benzylidenemalononitriles," IntechOpen invites you to contribute a chapter to "Organocatalysis - Key Trends in Green Chemical Synthesis," an Open Access book edited by Dr. Rajesh Kumar Singh.

Work with an internationally recognized peer group and gain increased visibility for your published work. Please visit the book project page to start the submission process.

We look forward to hearing from you.

Kind Regards,

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ResearchGate

Home 17 More

51







Well done, Maqdoom!

Your article reached 300 reads

Achieved on August 11, 2020

Article: Measurement of Dielectric Properties of Liquids Using Microwave Reflectometry Technique



Maqdoom, you can increase the visibility of your work



SPRINGER NATURE

ADVANCING DISCOVERY

Thank you for serving as a peer reviewer

Your contributions are important and do not go unnoticed

Thank you for helping us publish important research during an unprecedented year by reviewing papers for Springer Nature journals. The past year presented unique challenges that have heightened the importance of publishing sound, expertly reviewed research. We appreciate the time you took away from your personal life and research to accept and submit reviews.

Your review activity at Springer Nature

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Congrats, Maqdoom!

With 32 new reads, your research items were the most read research items from your department

Achieved on September 23, 2019

Maqdoom, you can increase the visibility of your work



Invite your co-authors to confirm their authorship on ResearchGate and boost the visibility of your mutual publications.

- Zahid Zaheer · 1 mutual publication
- Faozia Mansoor · 2 mutual publications

Dr. Rafiq Zakaria College for Women * Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park.
AURANGABAD. (M.S.)

SPRINGER NATURE

ADVANCING DISCOVERY

Thank you for serving as a peer reviewer

Your contributions are important and do not go unnoticed

Thank you for helping us publish important research during an unprecedented year by reviewing papers for Springer Nature journals. The past year presented unique challenges that have heightened the importance of publishing sound, expertly reviewed research. We appreciate the time you took away from your personal life and research to accept and submit reviews.

Your review activity at Springer Nature



Number of Journals You Reviewed For: 1 or more

Reviews Submitted: 1 or more

These metrics reflect your review activity across all Springer Nature review systems from January through November of 2020. If you have reviewed under multiple e-mail address, you may receive more than one e-mail and/or may notice differences in totals.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ResearchGate

Home 17 More

51



Dr. Rafiq Zakaria College for Women
Jubilee Park, Aurangabad



Nice work, Maqdoom!

Your article reached 50 reads

Achieved on October 1, 2019

Article: Studies on the isotherms, kinetics and thermodynamics of adsorption of crystal violet on low cost materials

Maqdoom, you can increase the visibility of your work



Invite your co-authors to confirm their authorship on

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ResearchGate

Home 17 More

51





Nice work, Maqdoom!

Your article reached 50 reads

Achieved on October 1, 2019

Article: Studies on the isotherms, kinetics and thermodynamics of adsorption of crystal violet on low cost materials

Maqdoom, you can increase the visibility of your work

Invite your co-authors to confirm their authorship on



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

ResearchGate

Home 17 More

51





Nice work, Maqdoom!

Your article reached 100 reads

Achieved on November 12, 2019

Article: Verification of the molar refraction as an additive and constitutive property of binary liquid mixtures of water-ethanol and benzeneethanol



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Nandanvan, Jubilee Park,
AURANGABAD. (M.S.)

Maqdoom, you can increase the visibility



ResearchGate

Home 17 More

51

Well done, Maqdoom!

Your research items reached 1,500 reads

Achieved on December 10, 2019

Maqdoom, you can increase the visibility of your work

Invite your co-authors to confirm their authorship on



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhands, Jubilee Park,
AURANGABAD. (M.S.)

Well done, Maqdoom!

Your article reached 20 reads

Achieved on October 27, 2019

Article: Green Chemistry: A Revolution in the Organic Era

Maqdoom, you can increase the visibility of your work



Invite your co-authors to confirm their authorship on ResearchGate and boost the visibility of your mutual publications.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Dr. Rafiq Zakaria College for Women * Aurangabad *

Full-text requests



B. A. Zaitsev Aug 5

requested a full-text of your article:

1 other researcher requested the full-text

Verification of the molar refraction as an additive and constitutive property of binary liquid mixtures of water-ethanol and benzeneethanol

Article

October 2011

Decline request

Respond to B.

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Maqdoom, you were recently cited by an author from Agrobioinstitute

Inbox

ResearchGate 20 Jul

to me

ResearchGate



Maqdoom, we found a recent citation of your research:

Verification of the molar refraction as an additive and constitutive property of binary liquid mixtu...

... l (12.54 × 10 6 m 3 mol -1) and a mixture of ethanol-water solutions with different concentrations16 compared with results obtained in this work

Dr. Rafiq Zakaria College for Women

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park.
AURANGABAD. (M.S.)

ResearchGate

Home 17 More

51





Well done, Maqdoom!

Your article reached 200 reads

Achieved on February 8, 2020

Article: Measurement of Dielectric Properties of Liquids Using Microwave Reflectometry Technique

Maqdoom, you can increase the visibility of your work



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Maqdoom, you were cited by an author from Al-Azhar University - Gaza Inbox

Rafiq Zakaria College for Women

ResearchGate 1 Apr

to me

ResearchGate



Maqdoom, we found one more citation of your research:

DETERMINATION OF GABAPENTIN IN BULK DRUG AND IN

PRINCIPAL
Dr Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)

Maqdoom, you were recently cited by an author from Agrobioinstitute

Inbox

R **ResearchGate** 20 Jul

to me

ResearchGate



Maqdoom, we found a recent citation of your research:

Verification of the molar refraction

Dr. Rafiq Zakaria College for Women
Aurangabad

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park.
AURANGABAD. (M.S.)

ResearchGate

Home 17 More

51



Congratulations, Maqdoom!

With 15 new reads, your article was the most read research item from your department

Achieved on June 15, 2020

Article: Measurement of Dielectric Properties of Liquids Using Microwave Reflectometry Technique

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park.
AURANGABAD. (M.S.)

DENSITY, SURFACE TENSION, REFRACTIVE INDEX AND TERNARY EQUILIBRIA OF CORIANDER ESSENTIAL OIL- ETHANOL-WATER SYSTEM

Citing article

Jun 2020 · Oxidation Communications

Stanislava Tasheva · Vanya Gandova · Albena Stoyanova · V Prodanova-Stefanova · [...]

View citation context

View citing research

Dr. Rafiq Zakaria College for Women

PRINCIPAL
Dr Rafiq Zakaria College For Women
Navkhanda, Juiblee Park.
AURANGABAD. (M.S.)

ResearchGate

Home 17 More

51



Way to go, Maqdoom!

Your article reached 600 reads

Achieved on April 30, 2020

Article: Determination of gabapentin in bulk drug and in pharmaceutical dosage form by HPLC method

Maqdoom, you can increase the visibility of your work



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park.
AURANGABAD. (M.S.)

ResearchGate

Home 17 More

51



Great work, Maqdoom!

Your article reached 500 reads

Achieved on November 6, 2019

Article: Determination of gabapentin in bulk drug and in pharmaceutical dosage form by HPLC method

Maqdoom, you can increase the visibility of your work



PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park.
AURANGABAD. (M.S.)

ResearchGate

Dr. Rafiq Zakaria College for Women
Aurangabad

Home 24 More

3

Nice work, Maqdoom!

Your research items reached 3,000 reads

Achieved on November 28, 2021

Maqdoom, you can increase the visibility of your work



Invite your co-authors to confirm their authorship on

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park,
AURANGABAD. (M.S.)



Dr. Rafiq Zakaria College for Women ★ Aurangabad ★

Maqdoom, we found a recent citation of your research:

Organocatalyzed domino reactions: diversity oriented synthesis of pyran-annulated scaffolds using in...

View citing research

This message was sent to maqdoomf789@gmail.com by ResearchGate. To make sure you receive our updates, add ResearchGate to your address book or safe list. See

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Navkhanda, Jubilee Park.
AURANGABAD. (M.S.)

ResearchGate

Home 17 More

51



Congratulations, Maqdoom!

With 15 new reads, your article was the most read research item from your department

Achieved on June 15, 2020

Article: Measurement of Dielectric Properties of Liquids Using Microwave Reflectometry Technique

Maqdoom, you can increase the visibility of your work



Invite your co-authors to confirm their authorship on ResearchGate and boost the visibility of your mutual publications.

- [x] Zahid Zaheer · 1 mutual publication
- [x] Faozia Mansoor · 2 mutual publications
- [x] Syed Nazimuddin · 2 mutual publications

Invite 3 co-authors | Remove 3 suggestions

PRINCIPAL
Dr. Rafiq Zakaria College For Women
Ravikhanda, Jubilee Park,
AURANGABAD. (M.S.)