3.3.1. NUMBER OF RESEARCH PAPERS PER TEACHERS IN THE JOURNALS NOTIFIED ON UGC WEBSITE (2018-2023)

LINK LANDING TO THE RESEARCH PAPERS ON COLLEGE WEBSITE (2018-2023)	
YEARS	**PAGE NO.**
Certificate from the Principal	2
2018-2019	3-7
2019-2020	8-12
2020-2021	13-22
2021-2022	23-45
2022-2023	46-49
Document with Links to the Research Paper	50-54

St. Bede's College
Shimla-171002
(UGC-NAAC "A+" Grade Re-Accredited)
College with Potential for Excellence
Phone: 0177-2842304, Fax:- 0177-2842498
www.stbedescollege.in,E-mail:- bedescollege@gmail.com

I hereby confirm that the count of research papers per teacher, as published in the journals accessible on the UGC website during the past five years, is attested for accuracy to the best of my knowledge.

Year	**2018-2019**	**2019-2020**	**2020-21**	**2021-2022**	**2022-2023**
Number	3	3	6	9	**2**
Total number of Research Papers					**23**

BEDE'S COLLEGE SHIMLA 171002

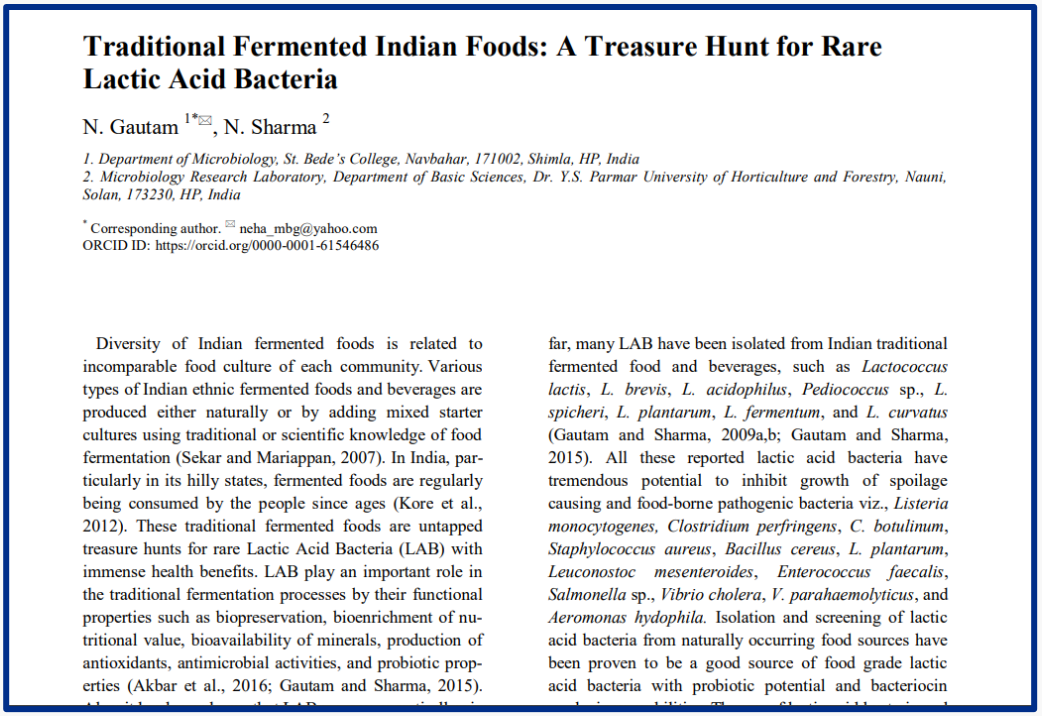
Principal

Principal
St. Bede's College
Shimla

St. Bede's College Shimla

2018-2019

1. Neha Gautam- Microbiology
Reseach Journal- Journal of Food Quality and Hazards Control
ISSN Number- 2345-6825
Year- 2019
Link to website of the Journal- Journal of food quality and hazards control (ssu.ac.ir)
Link to article/paper/abstract of the article- https://jfqhc.ssu.ac.ir/article-1-541-en.pdf



Traditional Fermented Indian Foods: A Treasure Hunt for Rare Lactic Acid Bacteria

N. Gautam [1*✉], N. Sharma [2]

1. Department of Microbiology, St. Bede's College, Navbahar, 171002, Shimla, HP, India
2. Microbiology Research Laboratory, Department of Basic Sciences, Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, 173230, HP, India

* Corresponding author. ✉ neha_mbg@yahoo.com
ORCID ID: https://orcid.org/0000-0001-61546486

Diversity of Indian fermented foods is related to incomparable food culture of each community. Various types of Indian ethnic fermented foods and beverages are produced either naturally or by adding mixed starter cultures using traditional or scientific knowledge of food fermentation (Sekar and Mariappan, 2007). In India, particularly in its hilly states, fermented foods are regularly being consumed by the people since ages (Kore et al., 2012). These traditional fermented foods are untapped treasure hunts for rare Lactic Acid Bacteria (LAB) with immense health benefits. LAB play an important role in the traditional fermentation processes by their functional properties such as biopreservation, bioenrichment of nutritional value, bioavailability of minerals, production of antioxidants, antimicrobial activities, and probiotic properties (Akbar et al., 2016; Gautam and Sharma, 2015). far, many LAB have been isolated from Indian traditional fermented food and beverages, such as *Lactococcus lactis*, *L. brevis*, *L. acidophilus*, *Pediococcus* sp., *L. spicheri*, *L. plantarum*, *L. fermentum*, and *L. curvatus* (Gautam and Sharma, 2009a,b; Gautam and Sharma, 2015). All these reported lactic acid bacteria have tremendous potential to inhibit growth of spoilage causing and food-borne pathogenic bacteria viz., *Listeria monocytogenes, Clostridium perfringens*, *C. botulinum*, *Staphylococcus aureus*, *Bacillus cereus*, *L. plantarum*, *Leuconostoc mesenteroides*, *Enterococcus faecalis*, *Salmonella* sp., *Vibrio cholera*, *V. parahaemolyticus*, and *Aeromonas hydophila.* Isolation and screening of lactic acid bacteria from naturally occurring food sources have been proven to be a good source of food grade lactic acid bacteria with probiotic potential and bacteriocin

Neha Gautam

JOURNAL OF FOOD QUALITY & HAZARDS CONTROL
SHAHID SADOUGHI UNIVERSITY OF MEDICAL SCIENCES & HEALTH SERVICES

Journal of Food Quality and Hazards Control 6 (2019) 42-43

Editorial

Traditional Fermented Indian Foods: A Treasure Hunt for Rare Lactic Acid Bacteria

N. Gautam [1*], N. Sharma [2]

1. Department of Microbiology, St. Bede's College, Navbahar, 171002, Shimla, HP, India
2. Microbiology Research Laboratory, Department of Basic Sciences, Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, 173230, HP, India

* Corresponding author: neha_mbg@yahoo.com
ORCID ID: https://orcid.org/0000-0001-61546486

Diversity of Indian fermented foods is related to incomparable food culture of each community. Various types of Indian ethnic fermented foods and beverages are produced either naturally or by adding mixed starter cultures using traditional or scientific knowledge of food fermentation (Sekar and Mariappan, 2007). In India, particularly in its hilly states, fermented foods are regularly being consumed by the people since ages (Kore et al., 2012). These traditional fermented foods are untapped treasure hunts for rare Lactic Acid Bacteria (LAB) with immense health benefits. LAB play an important role in the traditional fermentation processes by their functional properties such as biopreservation, bioenrichment of nutritional value, bioavailability of minerals, production of antioxidants, antimicrobial activities, and probiotic properties (Akbar et al., 2016; Gautam and Sharma, 2015). Also, it has been shown that LAB may cause anti-allergic effects in the consumers (Ai et al., 2016; Cross and Gill, 2001; Taghavi et al., 2014). Till date, so many rare traditional/local food items have been selected by many researchers around the globe to isolate LAB with novelty; however, many potential LAB are still unexplored. Diverse indigenous Indian foods have also been reported in literature for isolation process of bacteriocin producing LAB. Sepu vari, Dangal Vari, Chur saag, Salori, Nashasta, Chaang (fermented wheat), Chaang (fermented rice) are common local fermented Indian food products. The use of LAB and its antimicrobial compounds is a promising ongoing development in food preservation. So far, many LAB have been isolated from Indian traditional fermented food and beverages, such as *Lactococcus lactis*, *L. brevis*, *L. acidophilus*, *Pediococcus* sp., *L. spicheri*, *L. plantarum*, *L. fermentum*, and *L. curvatus* (Gautam and Sharma, 2009a,b; Gautam and Sharma, 2015). All these reported lactic acid bacteria have tremendous potential to inhibit growth of spoilage causing and food-borne pathogenic bacteria viz., *Listeria monocytogenes*, *Clostridium perfringens*, *C. botulinum*, *Staphylococcus aureus*, *Bacillus cereus*, *L. plantarum*, *Leuconostoc mesenteroides*, *Enterococcus faecalis*, *Salmonella* sp., *Vibrio cholera*, *V. parahaemolyticus*, and *Aeromonas hydophila*. Isolation and screening of lactic acid bacteria from naturally occurring food sources have been proven to be a good source of food grade lactic acid bacteria with probiotic potential and bacteriocin producing capabilities. The use of lactic acid bacteria and its antimicrobial compounds especially bacteriocins is a promising ongoing development in food preservation (Akbar et al., 2016; Gautam and Sharma, 2009a,b). Bacteriocin production has been reported to be affected by several factors, including fermentation conditions, such as pH, temperature, and inoculum size. The increasing of bacteriocin production and improving its activity has economical importance due to reduction of production cost. Beside use of only one of the metabolite i.e. bacteriocin, the use of whole LAB cells (probiotics) have also been established to enhance immunity as well as to cure many ailments in human beings (Sourabh et al.,

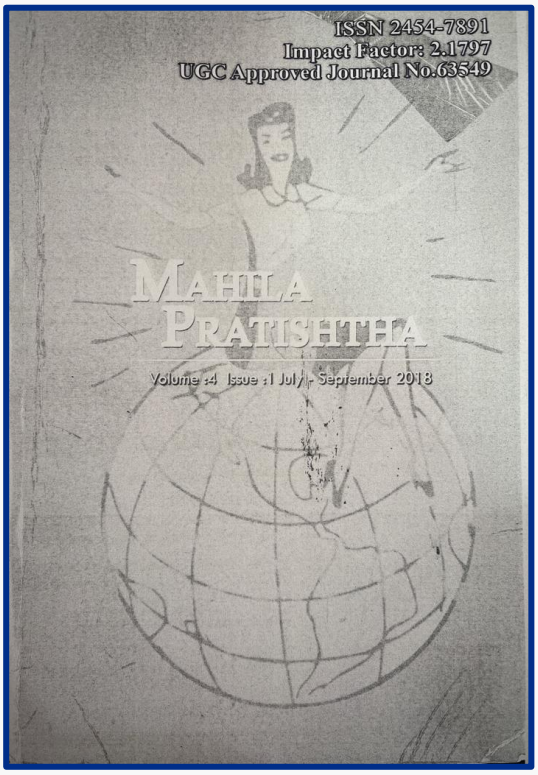
To cite: Gautam N., Sharma N. (2019). Traditional fermented Indian foods: a treasure hunt for rare lactic acid bacteria. *Journal of Food Quality and Hazards Control*. 6: 42-43.

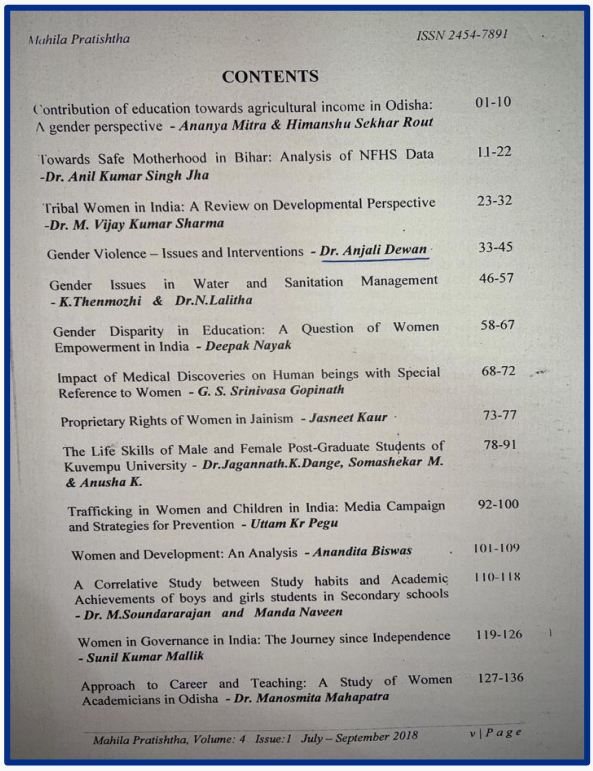
DOI: 10.18502/jfqhc.6.2.952 Journal website: http://www.jfqhc.com

[DOI: 10.18502/jfqhc.6.2.952]

Neha Gautam

2. Dr. Anjali Dewan- Home Science
Reseach Journal- Mahila Pratishtha
ISSN Number- 2454-7891
Year- 2018
Link to website of the Journal: Mahila Pratishtha - JOURNAL INDEX (scholarimpact.org)



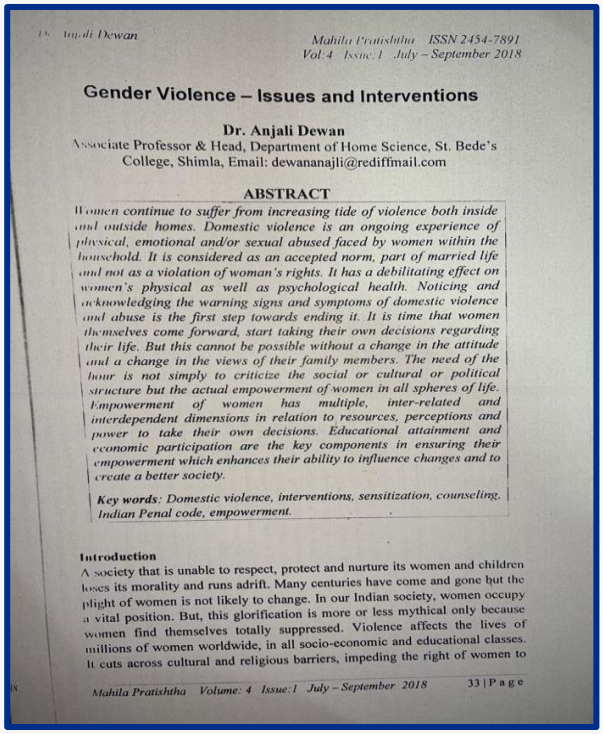


Mahila Pratishtha *ISSN 2454-7891*

CONTENTS

Mahila Pratishtha, Volume: 4 Issue:1 July – September 2018 *v | P a g e*

Dr. Anjali Dewan



Mahila Pratishtha ISSN 2454-7891
Vol:4 Issue:1 July – September 2018

Gender Violence – Issues and Interventions

Dr. Anjali Dewan
Associate Professor & Head, Department of Home Science, St. Bede's College, Shimla, Email: dewananajli@rediffmail.com

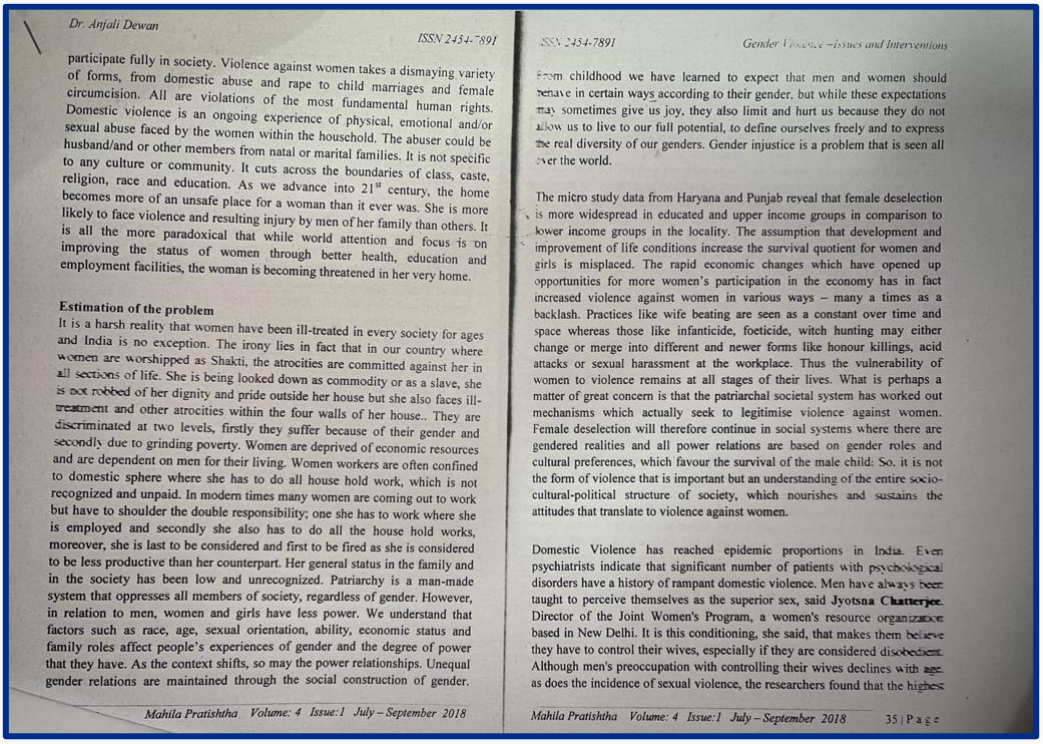
ABSTRACT

Women continue to suffer from increasing tide of violence both inside and outside homes. Domestic violence is an ongoing experience of physical, emotional and/or sexual abused faced by women within the household. It is considered as an accepted norm, part of married life and not as a violation of woman's rights. It has a debilitating effect on women's physical as well as psychological health. Noticing and acknowledging the warning signs and symptoms of domestic violence and abuse is the first step towards ending it. It is time that women themselves come forward, start taking their own decisions regarding their life. But this cannot be possible without a change in the attitude and a change in the views of their family members. The need of the hour is not simply to criticize the social or cultural or political structure but the actual empowerment of women in all spheres of life. Empowerment of women has multiple, inter-related and interdependent dimensions in relation to resources, perceptions and power to take their own decisions. Educational attainment and economic participation are the key components in ensuring their empowerment which enhances their ability to influence changes and to create a better society.

***Key words**: Domestic violence, interventions, sensitization, counseling, Indian Penal code, empowerment.*

Introduction

A society that is unable to respect, protect and nurture its women and children loses its morality and runs adrift. Many centuries have come and gone but the plight of women is not likely to change. In our Indian society, women occupy a vital position. But, this glorification is more or less mythical only because women find themselves totally suppressed. Violence affects the lives of millions of women worldwide, in all socio-economic and educational classes. It cuts across cultural and religious barriers, impeding the right of women to



participate fully in society. Violence against women takes a dismaying variety of forms, from domestic abuse and rape to child marriages and female circumcision. All are violations of the most fundamental human rights. Domestic violence is an ongoing experience of physical, emotional and/or sexual abuse faced by the women within the household. The abuser could be husband/and or other members from natal or marital families. It is not specific to any culture or community. It cuts across the boundaries of class, caste, religion, race and education. As we advance into 21st century, the home becomes more of an unsafe place for a woman than it ever was. She is more likely to face violence and resulting injury by men of her family than others. It is all the more paradoxical that while world attention and focus is on improving the status of women through better health, education and employment facilities, the woman is becoming threatened in her very home.

Estimation of the problem

It is a harsh reality that women have been ill-treated in every society for ages and India is no exception. The irony lies in fact that in our country where women are worshipped as Shakti, the atrocities are committed against her in all sections of life. She is being looked down as commodity or as a slave, she is not robbed of her dignity and pride outside her house but she also faces ill-treatment and other atrocities within the four walls of her house.. They are discriminated at two levels, firstly they suffer because of their gender and secondly due to grinding poverty. Women are deprived of economic resources and are dependent on men for their living. Women workers are often confined to domestic sphere where she has to do all house hold work, which is not recognized and unpaid. In modern times many women are coming out to work but have to shoulder the double responsibility; one she has to work where she is employed and secondly she also has to do all the house hold works, moreover, she is last to be considered and first to be fired as she is considered to be less productive than her counterpart. Her general status in the family and in the society has been low and unrecognized. Patriarchy is a man-made system that oppresses all members of society, regardless of gender. However, in relation to men, women and girls have less power. We understand that factors such as race, age, sexual orientation, ability, economic status and family roles affect people's experiences of gender and the degree of power that they have. As the context shifts, so may the power relationships. Unequal gender relations are maintained through the social construction of gender.

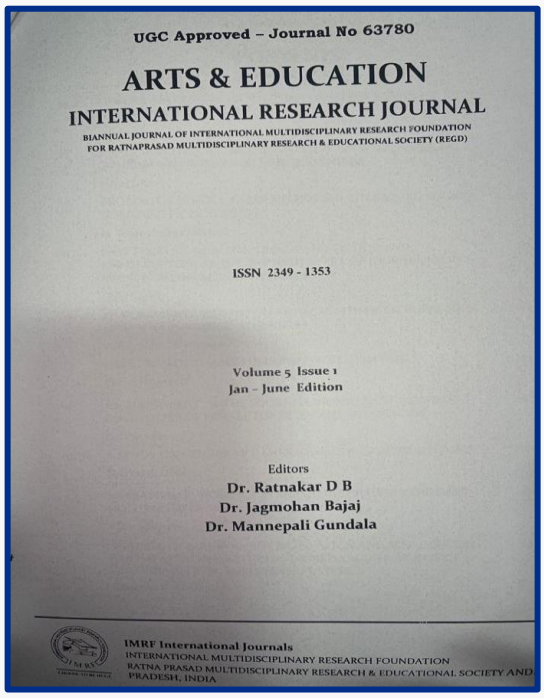
From childhood we have learned to expect that men and women should behave in certain ways according to their gender, but while these expectations may sometimes give us joy, they also limit and hurt us because they do not allow us to live to our full potential, to define ourselves freely and to express the real diversity of our genders. Gender injustice is a problem that is seen all over the world.

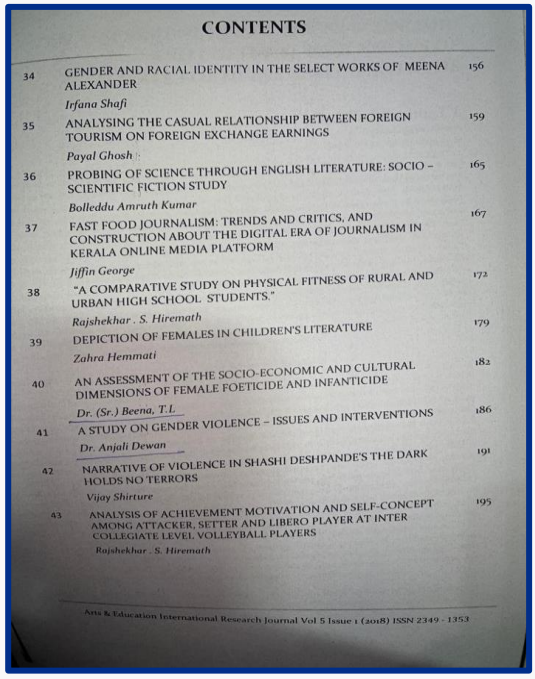
The micro study data from Haryana and Punjab reveal that female deselection is more widespread in educated and upper income groups in comparison to lower income groups in the locality. The assumption that development and improvement of life conditions increase the survival quotient for women and girls is misplaced. The rapid economic changes which have opened up opportunities for more women's participation in the economy has in fact increased violence against women in various ways – many a times as a backlash. Practices like wife beating are seen as a constant over time and space whereas those like infanticide, foeticide, witch hunting may either change or merge into different and newer forms like honour killings, acid attacks or sexual harassment at the workplace. Thus the vulnerability of women to violence remains at all stages of their lives. What is perhaps a matter of great concern is that the patriarchal societal system has worked out mechanisms which actually seek to legitimise violence against women. Female deselection will therefore continue in social systems where there are gendered realities and all power relations are based on gender roles and cultural preferences, which favour the survival of the male child. So, it is not the form of violence that is important but an understanding of the entire socio-cultural-political structure of society, which nourishes and sustains the attitudes that translate to violence against women.

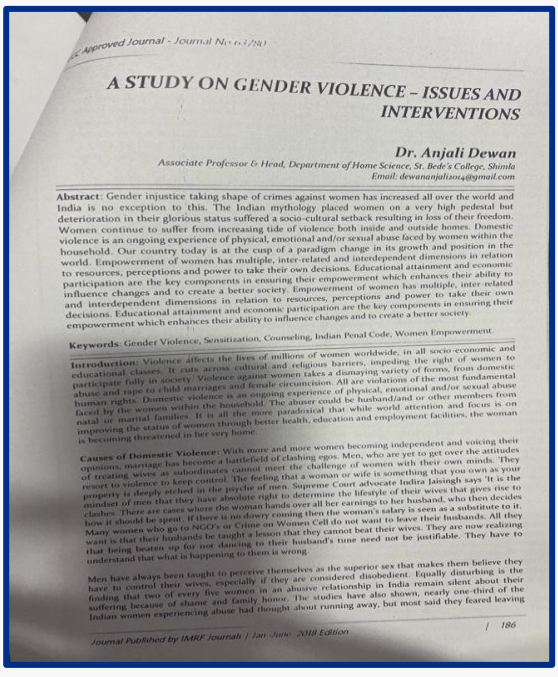
Domestic Violence has reached epidemic proportions in India. Even psychiatrists indicate that significant number of patients with psychological disorders have a history of rampant domestic violence. Men have always been taught to perceive themselves as the superior sex, said **Jyotsna Chatterjee**, Director of the Joint Women's Program, a women's resource organization based in New Delhi. It is this conditioning, she said, that makes them believe they have to control their wives, especially if they are considered disobedient. Although men's preoccupation with controlling their wives declines with age, as does the incidence of sexual violence, the researchers found that the highest

Dr. Anjali Dewan

3. Dr. Anjali Dewan- Home Science
Reseach Journal- Arts and Education International Research Journal
ISSN Number- 2349-1353
Year- 2018
Print version only




CONTENTS


A STUDY ON GENDER VIOLENCE – ISSUES AND INTERVENTIONS

Dr. Anjali Dewan
Associate Professor & Head, Department of Home Science, St. Bede's College, Shimla
Email: dewananjali2014@gmail.com

Abstract: Gender injustice taking shape of crimes against women has increased all over the world and India is no exception to this. The Indian mythology placed women on a very high pedestal but deterioration in their glorious status suffered a socio-cultural setback resulting in loss of their freedom. Women continue to suffer from increasing tide of violence both inside and outside homes. Domestic violence is an ongoing experience of physical, emotional and/or sexual abuse faced by women within the household. Our country today is at the cusp of a paradigm change in its growth and position in the world. Empowerment of women has multiple, inter-related and interdependent dimensions in relation to resources, perceptions and power to take their own decisions. Educational attainment and economic participation are the key components in ensuring their empowerment which enhances their ability to influence changes and to create a better society. Empowerment of women has multiple, inter-related and interdependent dimensions in relation to resources, perceptions and power to take their own decisions. Educational attainment and economic participation are the key components in ensuring their empowerment which enhances their ability to influence changes and to create a better society.

Keywords: Gender Violence, Sensitization, Counseling, Indian Penal Code, Women Empowerment.

Introduction: Violence affects the lives of millions of women worldwide, in all socio-economic and educational classes. It cuts across cultural and religious barriers, impeding the right of women to participate fully in society. Violence against women takes a dismaying variety of forms, from domestic abuse and rape to child marriages and female circumcision. All are violations of the most fundamental human rights. Domestic violence is an ongoing experience of physical, emotional and/or sexual abuse faced by the women within the household. The abuser could be husband/and or other members from natal or marital families. It is all the more paradoxical that while world attention and focus is on improving the status of women through better health, education and employment facilities, the woman is becoming threatened in her very home.

Causes of Domestic Violence: With more and more women becoming independent and voicing their opinions, marriage has become a battlefield of clashing egos. Men, who are yet to get over the attitudes of treating wives as subordinates cannot meet the challenge of women with their own minds. They resort to violence to keep control. The feeling that a woman or wife is something that you own as your property is deeply etched in the psyche of men. Supreme Court advocate Indira Jaisingh says 'It is the mindset of men that they have absolute right to determine the lifestyle of their wives that gives rise to clashes. There are cases where the woman hands over all her earnings to her husband, who then decides how it should be spent. If there is no dowry coming then the woman's salary is seen as a substitute to it. Many women who go to NGO's or Crime on Women Cell do not want to leave their husbands. All they want is that their husbands be taught a lesson that they cannot beat their wives. They are now realizing that being beaten up for not dancing to their husband's tune need not be justifiable. They have to understand that what is happening to them is wrong.

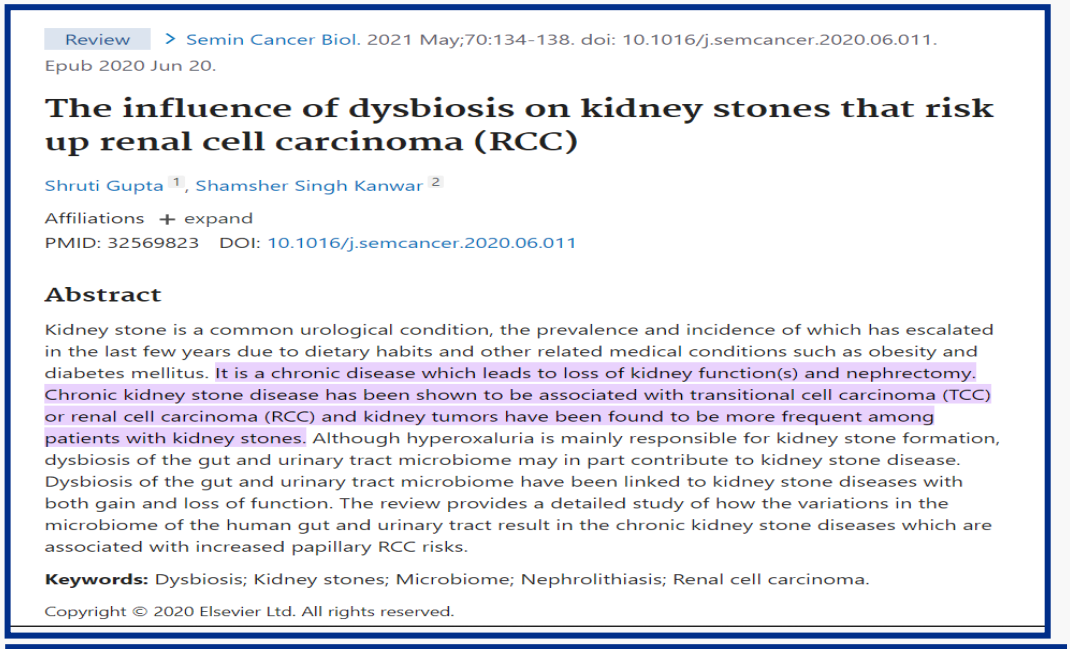
Men have always been taught to perceive themselves as the superior sex that makes them believe they have to control their wives, especially if they are considered disobedient. Equally disturbing is the finding that two of every five women in an abusive relationship in India remain silent about their suffering because of shame and family honor. The studies have also shown, nearly one-third of the Indian women experiencing abuse had thought about running away, but most said they feared leaving

Dr. Anjali Dewan

St. Bede's College Shimla

2019-2020

1. Ms.Shruti Gupta- Biotehnology
Reseach Journal- Seminar in Cancer Biology
ISSN Number-1044-579X
Year- 2020
Link to website of the Journal- Seminars in Cancer Biology | Journal | ScienceDirect.com by Elsevier
Link to article/paper/abstract of the article The influence of dysbiosis on kidney stones that risk up renal cell carcinoma (RCC) - ScienceDirect



Review > Semin Cancer Biol. 2021 May;70:134-138. doi: 10.1016/j.semcancer.2020.06.011. Epub 2020 Jun 20.

The influence of dysbiosis on kidney stones that risk up renal cell carcinoma (RCC)

Shruti Gupta [1], Shamsher Singh Kanwar [2]

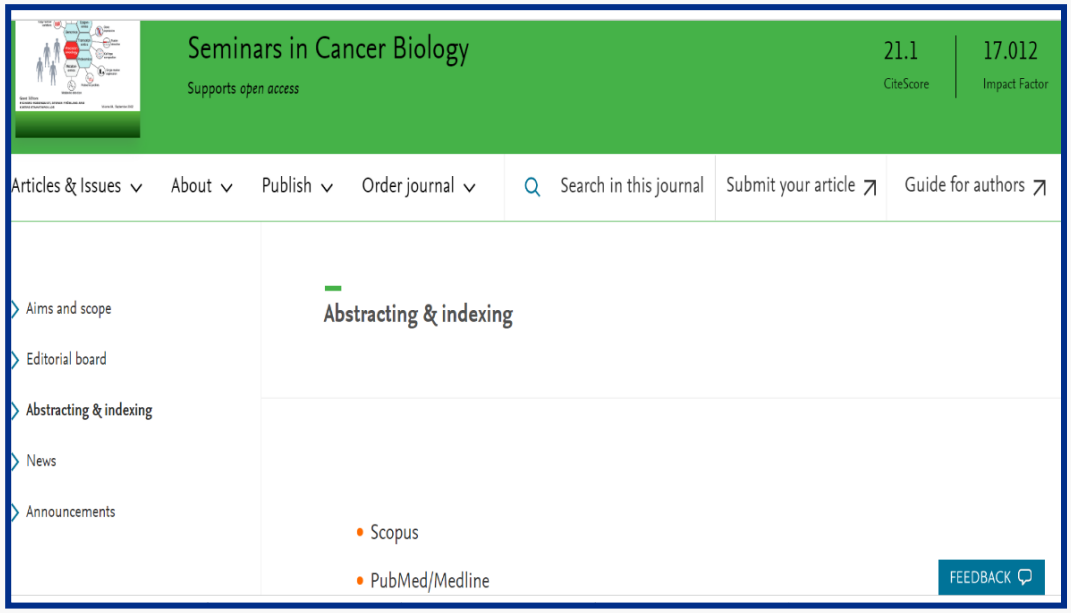
Affiliations + expand

PMID: 32569823 DOI: 10.1016/j.semcancer.2020.06.011

Abstract

Kidney stone is a common urological condition, the prevalence and incidence of which has escalated in the last few years due to dietary habits and other related medical conditions such as obesity and diabetes mellitus. It is a chronic disease which leads to loss of kidney function(s) and nephrectomy. Chronic kidney stone disease has been shown to be associated with transitional cell carcinoma (TCC) or renal cell carcinoma (RCC) and kidney tumors have been found to be more frequent among patients with kidney stones. Although hyperoxaluria is mainly responsible for kidney stone formation, dysbiosis of the gut and urinary tract microbiome may in part contribute to kidney stone disease. Dysbiosis of the gut and urinary tract microbiome have been linked to kidney stone diseases with both gain and loss of function. The review provides a detailed study of how the variations in the microbiome of the human gut and urinary tract result in the chronic kidney stone diseases which are associated with increased papillary RCC risks.

Keywords: Dysbiosis; Kidney stones; Microbiome; Nephrolithiasis; Renal cell carcinoma.



Seminars in Cancer Biology

Supports open access

21.1 CiteScore

17.012 Impact Factor

Articles & Issues | About | Publish | Order journal | Search in this journal | Submit your article | Guide for authors

Aims and scope

Editorial board

Abstracting & indexing

News

Announcements

Abstracting & indexing

Scopus

PubMed/Medline

FEEDBACK

Ms. Shruti Gupta (Scopus)

Abstract

Kidney stone is a common urological condition, the prevalence and incidence of which has escalated in the last few years due to dietary habits and other related medical conditions such as obesity and diabetes mellitus. It is a chronic disease which leads to loss of kidney function(s) and nephrectomy. Chronic kidney stone disease has been shown to be associated with transitional cell carcinoma (TCC) or renal cell carcinoma (RCC) and kidney tumors have been found to be more frequent among patients with kidney stones. Although hyperoxaluria is mainly responsible for kidney stone formation, dysbiosis of the gut and urinary tract microbiome may in part contribute to kidney stone disease. Dysbiosis of the gut and urinary tract microbiome have been linked to kidney stone diseases with both gain and loss of function. The review provides a detailed study of how the variations in the microbiome of the human gut and urinary tract result in the chronic kidney stone diseases which are associated with increased papillary RCC risks.

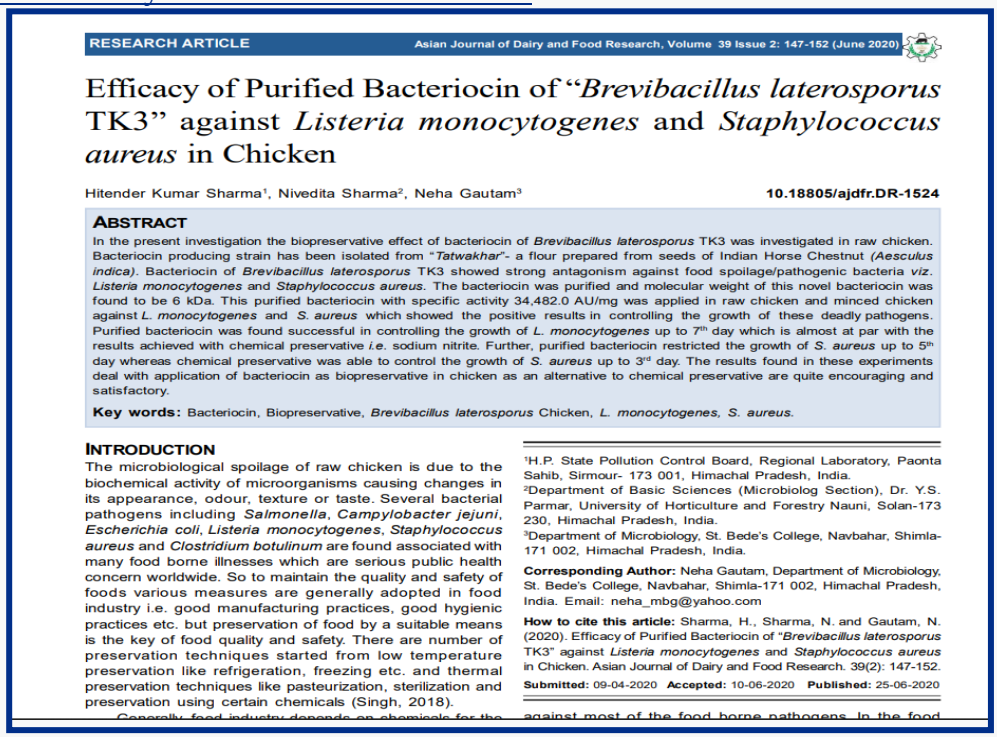
Introduction

Urolithiasis or kidney stones disease is one of the most widespread urological disorders with its prevalence and incidences increasing at an alarming rate affecting around one tenth of the population all over the world. Since males possess greater muscular mass and because of thehigh levels of androgenas well aslack of inhibiting ability of estrogen, kidney stone are more prevalent in males than in females. The kidney stone diseaseaffects all age groups from less than 1 year old to more than 70 years. An increased morbidity and economic burden has been imposed all over the world due to increase in incidence of nephrolithiasis (kidney stones) [1]. The prime cause of nephrolithiasis is the super saturation of urine with calcium and oxalate that leads to pathological mineralization in the kidneys. Numerous factors like drugs such as antibiotics, environment, socioeconomic status, diet, host genetics and metabolism have been considered to be associated with the urinary stone disease [2]. Current findings suggest that the urinary tract microbiome remarkably affects the kidney stone disease. The dysbiosis or changes in their level in patients with kidney stones have also been proved experimentally in several studies [3]. Dysbiosis can be defined by the loss or gain of bacteria which promotes either disease or health, respectively. Environmental factors such as use of antibiotics lead to dysbiosis thereby causing a shift in the microbiome resulting in increased inflammation and the onset of chronic diseases [4].

Chronic kidney stone disease may ultimately result in the loss of kidney function and other co-morbidities such as asthma, cardio muscular diseases, diabetes and metabolic syndrome. Further, it might also be associated with transitional cell carcinoma (TCC), renal cell carcinoma (RCC) and kidney tumors as the incidences of these diseases have been found to be more in patients with kidney stones [2,5]. As the kidney stones and urinary stones are present at the same position in the body as the kidney tumors, patients with kidney stones are at a greater risk for kidney tumors and carcinomas due to chronic infection and irritation [6].

Ms. Shruti Gupta

2. Neha Gautam- Microbiology
Reseach Journal- Asian Journal of Dairy and Food Research
ISSN Number- 0976-0563
Year- 2020
Link to website of the Journal- https://arccjournals.com/journals/asian-journal-of-dairy-and-food-research
Link to article/paper/abstract of the article- https://arccjournals.com/journal/asian-journal-of-dairy-and-food-research/DR-1524



RESEARCH ARTICLE Asian Journal of Dairy and Food Research, Volume 39 Issue 2: 147-152 (June 2020)

Efficacy of Purified Bacteriocin of "*Brevibacillus laterosporus* TK3" against *Listeria monocytogenes* and *Staphylococcus aureus* in Chicken

Hitender Kumar Sharma[1], Nivedita Sharma[2], Neha Gautam[3]

10.18805/ajdfr.DR-1524

ABSTRACT

In the present investigation the biopreservative effect of bacteriocin of *Brevibacillus laterosporus* TK3 was investigated in raw chicken. Bacteriocin producing strain has been isolated from "*Tatwakhar*"- a flour prepared from seeds of Indian Horse Chestnut *(Aesculus indica)*. Bacteriocin of *Brevibacillus laterosporus* TK3 showed strong antagonism against food spoilage/pathogenic bacteria *viz*. *Listeria monocytogenes* and *Staphylococcus aureus*. The bacteriocin was purified and molecular weight of this novel bacteriocin was found to be 6 kDa. This purified bacteriocin with specific activity 34,482.0 AU/mg was applied in raw chicken and minced chicken against *L. monocytogenes* and *S. aureus* which showed the positive results in controlling the growth of these deadly pathogens. Purified bacteriocin was found successful in controlling the growth of *L. monocytogenes* up to 7th day which is almost at par with the results achieved with chemical preservative *i.e.* sodium nitrite. Further, purified bacteriocin restricted the growth of *S. aureus* up to 5th day whereas chemical preservative was able to control the growth of *S. aureus* up to 3rd day. The results found in these experiments deal with application of bacteriocin as biopreservative in chicken as an alternative to chemical preservative are quite encouraging and satisfactory.

Key words: Bacteriocin, Biopreservative, *Brevibacillus laterosporus* Chicken, *L. monocytogenes*, *S. aureus*.

INTRODUCTION

The microbiological spoilage of raw chicken is due to the biochemical activity of microorganisms causing changes in its appearance, odour, texture or taste. Several bacterial pathogens including *Salmonella*, *Campylobacter jejuni*, *Escherichia coli*, *Listeria monocytogenes*, *Staphylococcus aureus* and *Clostridium botulinum* are found associated with many food borne illnesses which are serious public health concern worldwide. So to maintain the quality and safety of foods various measures are generally adopted in food industry i.e. good manufacturing practices, good hygienic practices etc. but preservation of food by a suitable means is the key of food quality and safety. There are number of preservation techniques started from low temperature preservation like refrigeration, freezing etc. and thermal preservation techniques like pasteurization, sterilization and preservation using certain chemicals (Singh, 2018).

[1]H.P. State Pollution Control Board, Regional Laboratory, Paonta Sahib, Sirmour- 173 001, Himachal Pradesh, India.
[2]Department of Basic Sciences (Microbiolog Section), Dr. Y.S. Parmar, University of Horticulture and Forestry Nauni, Solan-173 230, Himachal Pradesh, India.
[3]Department of Microbiology, St. Bede's College, Navbahar, Shimla-171 002, Himachal Pradesh, India.
Corresponding Author: Neha Gautam, Department of Microbiology, St. Bede's College, Navbahar, Shimla-171 002, Himachal Pradesh, India. Email: neha_mbg@yahoo.com

How to cite this article: Sharma, H., Sharma, N. and Gautam, N. (2020). Efficacy of Purified Bacteriocin of "*Brevibacillus laterosporus* TK3" against *Listeria monocytogenes* and *Staphylococcus aureus* in Chicken. Asian Journal of Dairy and Food Research. 39(2): 147-152.
Submitted: 09-04-2020 **Accepted:** 10-06-2020 **Published:** 25-06-2020

against most of the food borne pathogens. In the food

Asian Journal Of Dairy And Food Research
Home » Journal » Asian Journal of Dairy and Food Research

Journal Home | Aims and Scope | APC | Current Issue | Archive | Author Guidelines | Online First Articles | Publication Ethics

Asian Journal of Dairy and Food Research
Chief Editor: Harjinder Singh

Print ISSN: 0971-4456
Online ISSN: 0976-0563
Print Frequency: Quarterly
Month(s) of publication: March, June, September & December
Scientifical Journal Ranking(SJR): Title Accepted
Type: Peer-Review, Open Access
National Academy of Agricultural Sciences (NAAS): 5.75

Description :

Asian Journal of Dairy and Food Research official quarterly publication of the Agricultural Research Communication Centre. It is a peer reviewed/Refereed journal and provides forum for the scientific community to publish their original research articles/short communications in the field of Dairy and Food Science and focuses on new developments. The journal is being covered under international indexing and abstracting services.

Subjects Covered: All Subject of Dairy and Food Research

Indexing Services: Elsevier (Scopus and Embase), AGRICOLA, Google Scholar, CrossRef, CAB Abstracting Journals, Chemical Abstracts, Indian Science Abstracts, EBSCO Indexing Services, Index Copernicus

Current Issue (21) VOLUME 41, ISSUE 3 (SEPTEMBER 2022)

Nutritional and Bioactive Properties of Rubus ulmifolius Schott (Blackberry): A Review
Ekta Singh Chauhan, Urvashi Chauhan

ISSN: 0971-4456
Asian Journal of Dairy and Food Research
AGRICULTURAL RESEARCH COMMUNICATION CENTRE

→ APC
→ Publication Ethics
→ Editorial Board
→ Peer-Review Article Process
→ Editorial policy
→ Aims and Scope
→ Role of Reviewers

Dr. Neha Gautam (Scopus)

RESEARCH ARTICLE Asian Journal of Dairy and Food Research, Volume 39 Issue 2: 147-152 (June 2020)

Efficacy of Purified Bacteriocin of "*Brevibacillus laterosporus* TK3" against *Listeria monocytogenes* and *Staphylococcus aureus* in Chicken

Hitender Kumar Sharma[1], Nivedita Sharma[2], Neha Gautam[3]

10.18805/ajdfr.DR-1524

ABSTRACT

In the present investigation the biopreservative effect of bacteriocin of *Brevibacillus laterosporus* TK3 was investigated in raw chicken. Bacteriocin producing strain has been isolated from "*Taheakhar*"- a flour prepared from seeds of Indian Horse Chestnut (*Aesculus indica*). Bacteriocin of *Brevibacillus laterosporus* TK3 showed strong antagonism against food spoilage/pathogenic bacteria viz. *Listeria monocytogenes* and *Staphylococcus aureus*. The bacteriocin was purified and molecular weight of this novel bacteriocin was found to be 6 kDa. This purified bacteriocin with specific activity 34,482.0 AU/mg was applied in raw chicken and minced chicken against *L. monocytogenes* and *S. aureus* which showed the positive results in controlling the growth of these deadly pathogens. Purified bacteriocin was found successful in controlling the growth of *L. monocytogenes* up to 7th day which is almost at par with the results achieved with chemical preservative *i.e.* sodium nitrite. Further, purified bacteriocin restricted the growth of *S. aureus* up to 5th day whereas chemical preservative was able to control the growth of *S. aureus* up to 3rd day. The results found in these experiments deal with application of bacteriocin as biopreservative in chicken as an alternative to chemical preservative are quite encouraging and satisfactory.

Key words: Bacteriocin, Biopreservative, *Brevibacillus laterosporus* Chicken, *L. monocytogenes*, *S. aureus*.

INTRODUCTION

The microbiological spoilage of raw chicken is due to the biochemical activity of microorganisms causing changes in its appearance, odour, texture or taste. Several bacterial pathogens including *Salmonella*, *Campylobacter jejuni*, *Escherichia coli*, *Listeria monocytogenes*, *Staphylococcus aureus* and *Clostridium botulinum* are found associated with many food borne illnesses which are serious public health concern worldwide. So to maintain the quality and safety of foods various measures are generally adopted in food industry i.e. good manufacturing practices, good hygienic practices etc. but preservation of food by a suitable means is the key of food quality and safety. There are number of preservation techniques started from low temperature preservation like refrigeration, freezing etc. and thermal preservation techniques like pasteurization, sterilization and preservation using certain chemicals (Singh, 2018).

Generally, food industry depends on chemicals for the preservation of foodstuff and to increase the shelf life of food. Chemical preservatives and other conventional preservation strategies fail to deliver the requisite health benefits and cause serious disorder thus necessitates seeking alternatives (Sarika *et al.*, 2019). Hence, according to an increased negative perception towards chemical preservatives and a trend towards natural food additives so called "clean- labeling" has driven exploring of effective natural antimicrobial compounds as an alternative to synthetic food additives (Castillano *et al.*, 2008). The use of bacteriocins is a promising ongoing development in food preservation as bacteriocins have strong antagonism against most of the food borne pathogens. In the food industry, bacteriocins have been widely utilized for the biopreservation of various foods, either alone, or in combination with other methods of preservation known as hurdle technology (Galvez *et al.*, 2007; Barathiraja *et al.*, 2015). Incorporation of bacteriocins into the food packaging film or surfaces has been explored as well (Zendo, 2013). Bacteriocins are ribosomally synthesized extracellularly released bioactive peptides or peptide complexes that vary in spectrum of activity, mode of action, molecular weight, genetic organization and considered to be safe biopreservatives since they can be digested by proteases thus having no or little influence on the gut microbiota

[1]H.P. State Pollution Control Board, Regional Laboratory, Paonta Sahib, Sirmour- 173 001, Himachal Pradesh, India.
[2]Department of Basic Sciences (Microbiolog Section), Dr. Y.S. Parmar, University of Horticulture and Forestry Nauni, Solan-173 230, Himachal Pradesh, India.
[3]Department of Microbiology, St. Bede's College, Navbahar, Shimla-171 002, Himachal Pradesh, India.

Corresponding Author: Neha Gautam, Department of Microbiology, St. Bede's College, Navbahar, Shimla-171 002, Himachal Pradesh, India. Email: neha_mbg@yahoo.com

How to cite this article: Sharma, H., Sharma, N. and Gautam, N. (2020). Efficacy of Purified Bacteriocin of "*Brevibacillus laterosporus* TK3" against *Listeria monocytogenes* and *Staphylococcus aureus* in Chicken. Asian Journal of Dairy and Food Research. 39(2): 147-152.

Submitted: 09-04-2020 **Accepted:** 10-06-2020 **Published:** 25-06-2020

Dr. Neha Gautam

3. Ms. Anu Kumari- Chemistry
Reseach Journal- Journal of Molecular Liquids
ISSN Number- 0167-7322
Year- 2019
Link to website of the Journal- Journal of Molecular Liquids | ScienceDirect.com by Elsevier
Link to article/paper/abstract of the article-
https://www.sciencedirect.com/science/article/abs/pii/S0167732219310153


Journal of Molecular Liquids
Volume 290, 15 September 2019, 111177

Review

Recent advances in nano-Fenton catalytic degradation of emerging pharmaceutical contaminants

Amit Kumar, Anamika Rana, Gaurav Sharma, Mu. Naushad, Pooja Dhiman, Anu Kumari, Florian J. Stadler

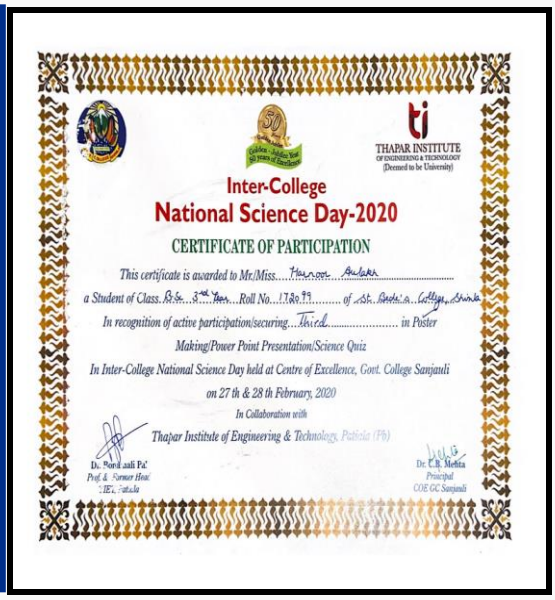
Show more

Add to Mendeley Share Cite

https://doi.org/10.1016/j.molliq.2019.111177 Get rights and content

Highlights

- Pharmaceutical pollutants as emerging class of toxic pollutants.
- Fenton, electro-Fenton, photo-Fenton processes: Safe, Cheap and environmental benign.
- Controllable parameters for effective degradation of pharmaceutical

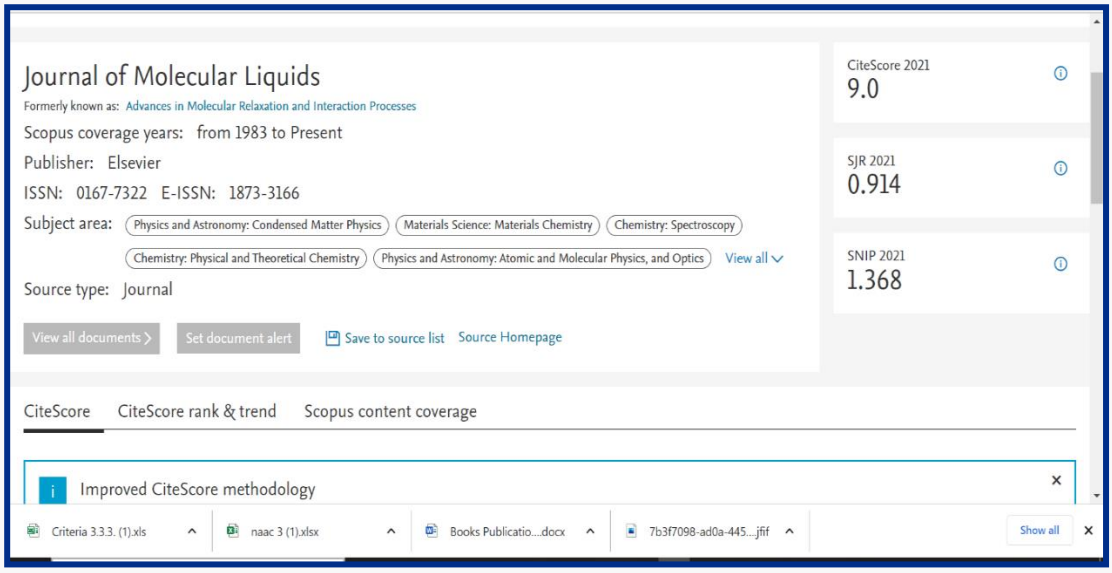

THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY (Deemed to be University)

Inter-College
National Science Day-2020

CERTIFICATE OF PARTICIPATION

This certificate is awarded to Mr./Miss. ..... a Student of Class. B.Sc. 3rd Year Roll No. 17807 of ..... College, Shimla In recognition of active participation/securing Third in Poster Making/Power Point Presentation/Science Quiz In Inter-College National Science Day held at Centre of Excellence, Govt. College Sanjauli on 27 th & 28 th February, 2020 In Collaboration with Thapar Institute of Engineering & Technology, Patiala (Pb)

Dr. C.R. Mehta Principal COE GC Sanjauli


Journal of Molecular Liquids

Formerly known as: Advances in Molecular Relaxation and Interaction Processes

Scopus coverage years: from 1983 to Present

Publisher: Elsevier

ISSN: 0167-7322 E-ISSN: 1873-3166

Subject area: Physics and Astronomy: Condensed Matter Physics | Materials Science: Materials Chemistry | Chemistry: Spectroscopy | Chemistry: Physical and Theoretical Chemistry | Physics and Astronomy: Atomic and Molecular Physics, and Optics View all

Source type: Journal

View all documents | Set document alert | Save to source list | Source Homepage

CiteScore 2021 9.0

SJR 2021 0.914

SNIP 2021 1.368

CiteScore | CiteScore rank & trend | Scopus content coverage

Improved CiteScore methodology

Criteria 3.3.3. (1).xls | naac 3 (1).xlsx | Books Publicatio....docx | 7b3f7098-ad0a-445...jfif | Show all

Anu Kumari (Scopus)

St. Bede's College Shimla

2020-2021

1. Mohit Kumar – Psychology
Indian Journal of Psychological Science
Year-2021
ISSN: 09769218
Link to website of the Journal: National Association of Psychological Science India(Regd.) (napsindia.org)
Print version only

Indian Journal of Psychological Science *Vol-13 (2) January, 2021* *ISSN 0976 9218*

Listed @: Emerging Sources Citation Index, UGC-CARE List

Self-Efficacy and Risk-Taking among Adolescents

** Mohit Kumar and ** S.N. Ghosh*

ABSTRACT

Adolescence is a developmental stage which involves physical, psychological and social maturity of individuals. Important factors such as self-efficacy and risk-taking behaviour play a crucial role during adolescence. The purpose of the present study was to assess the levels of self-efficacy and risk-taking behaviour among public and private school adolescents. Generalised Self-Efficacy scale (Schwarzer and Jerusalem, 1995) and Risk-Taking scale (Card, 1994) were used for assessing self efficacy and risk taking behaviour. A sample of randomly selected 120 boys, 60 each from public and private schools, participated in the study. The data was collected from one public and one private school from Shimla district (H.P.). The scores obtained on the measures of self-efficacy and risk-taking was subjected to t-test to find out the

Mr. Mohit Kumar

2. Rohini Dharela - Chemistry

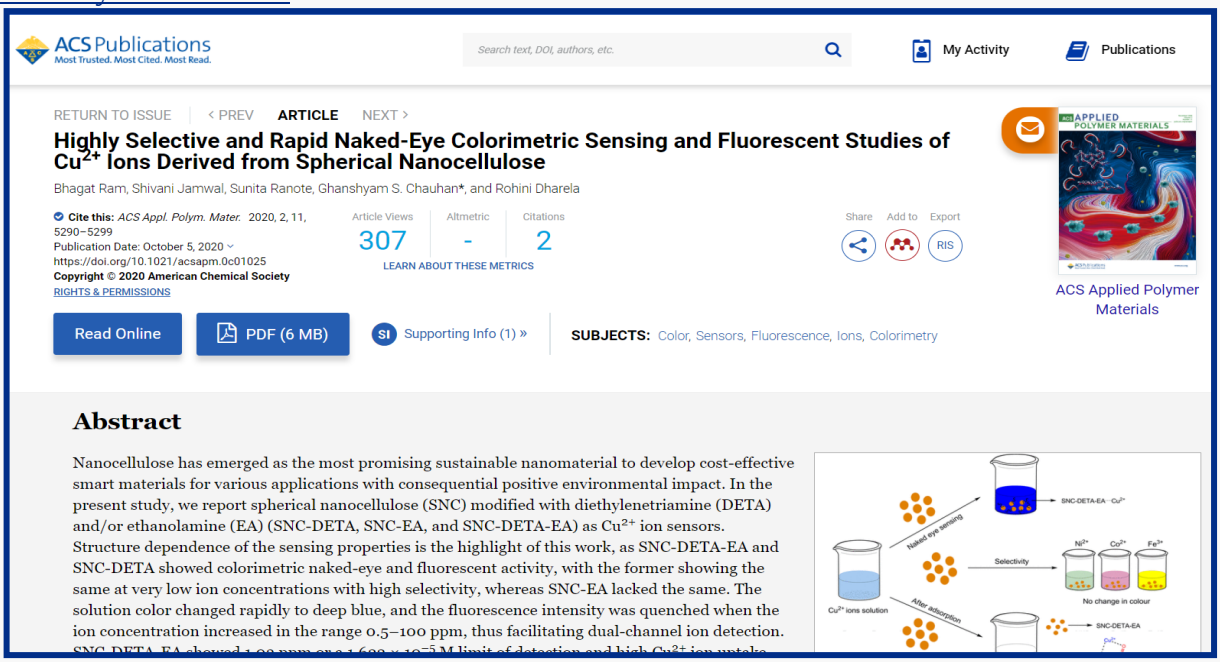
ACS Applied Polymer Materials

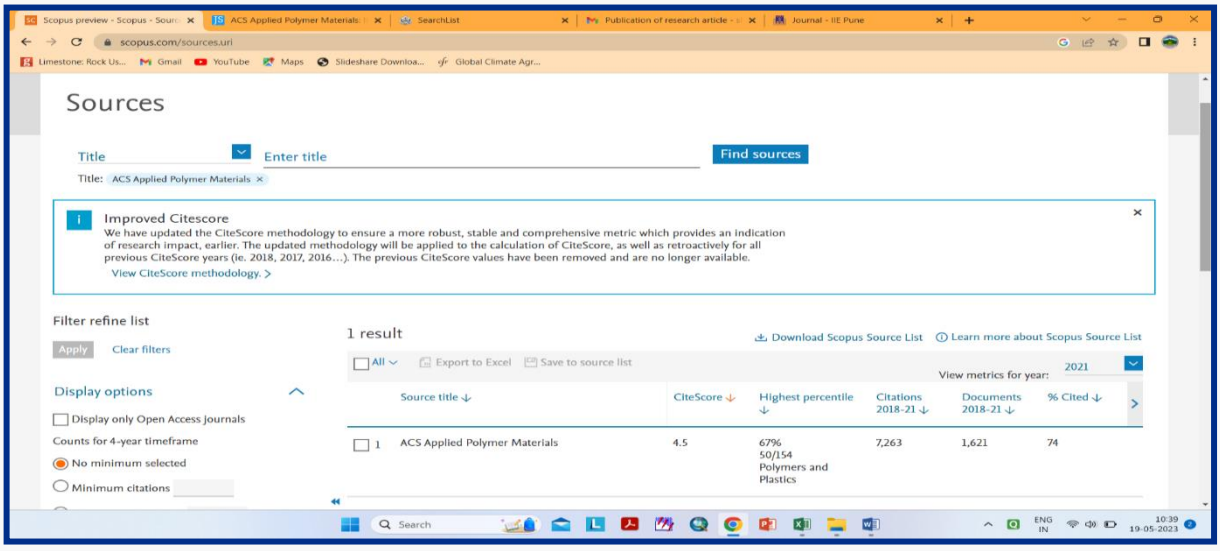
Year-2020

ISSN 5290–5299

Link to website of the Journal- https://pubs.acs.org/

Link to article/paper/abstract of the article: Highly Selective and Rapid Naked-Eye Colorimetric Sensing and Fluorescent Studies of Cu2+ Ions Derived from Spherical Nanocellulose | ACS Applied Polymer Materials





Rohini Dharela (Scopus)

Mini Block^{TM}, Germany) for 24 h. ZPC was estimated by calculating the difference in initial and final pHs values (Figure S6). ZPC of SNC-DETA-EA was found to be pH 6.3 meaning thereby its surface is +vely charged below 6.3 pH and above that it has –ve charge. Hence, it interact well with Cu^{2+} ions at or below pH 6.3.[2-5]

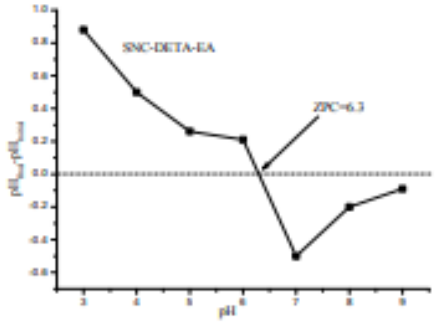


Figure S6. ZPC of SNC-DETA-EA.

Adsorption Studies of Cu^{2+} Ions

Stock solution of Cu^{2+} ions (100 ppm) from copper sulfate [$CuSO_4.5H_2O$] was prepared in distilled water. The lowest detection limit for Cu^{2+} ions in UV-Visible spectrophotometer was 0.1 ppm which is well below the WHO limit. Copper reagent set (OR- REGT-Cu) was used for the determination of Cu^{2+} ions. The adsorption capacity was calculated from the formula:[2]

$$q = \frac{C_o - C_t}{W} \times V \quad (1)$$

Where q (mg g^{-1}) is the adsorption capacity, C_0 and C_t are the initial and final residual Cu^{2+} ion concentrations at time t, respectively. V is the volume (L) of the solution and w is weight (g) of the adsorbent. Effect of time on the adsorption capacities (q) of SNC-EA, SNC-DETA and SNC- DETA-EA (10 mg) to adsorb Cu^{2+} ions (100 ppm) were studied by varying time from 5-180 min in batch experiments (Figure S7a). Adsorption capacity (q) of different polymers

3. Dr. Gitanjali Mahendra – English Department

The Bede Athenaeum

Year- 2021

ISSN 0976-1748 (Online)

Link to the website of the Journal:

https://www.indianjournals.com/ijor.aspx?target=ijor:bajrp&type=home

Link to article/paper/abstract of the paper:

https://www.indianjournals.com/ijor.aspx?target=ijor:bajrp&volume=12&issue=1&article=008

http://dx.doi.org/10.5958/0976-1748.2021.00008.4

Journal of Research: THE BEDE ATHENAEUM
Year : 2021, Volume : 12, Issue : 1
First page : (77) Last page : (82)
Print ISSN : 0976-0598. Online ISSN : 0976-1748.
Article DOI : 10.5958/0976-1748.2021.00008.4

Developing intercultural communicative competence through world literature

Mahendra Gitanjali*
Associate Professor, Department of English, St. Bede's College, Shimla
*Email: gitanjali.mahendra@gmail.com

Online published on 2 April, 2021.

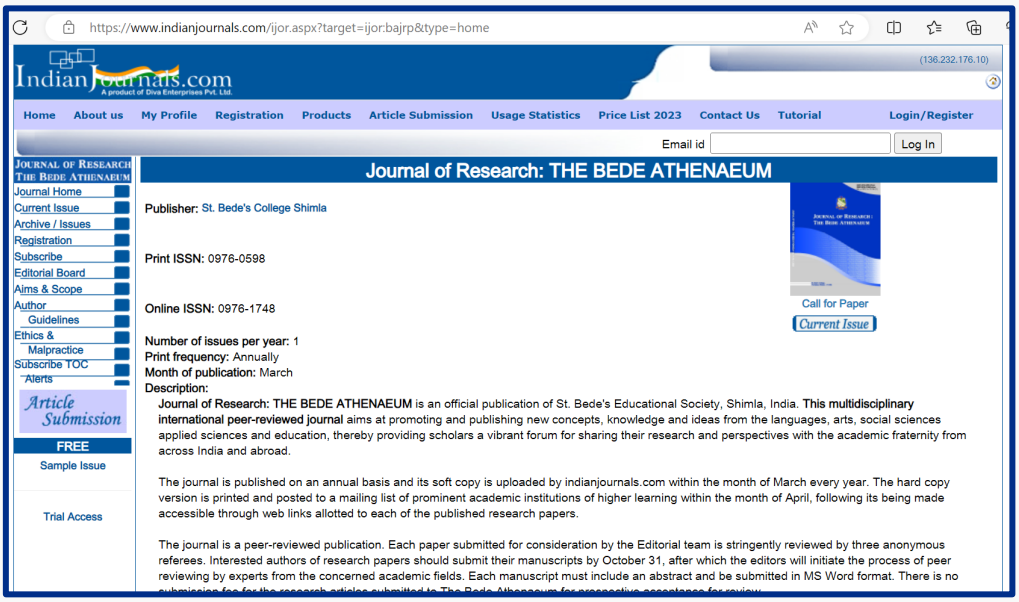
Abstract

The practice of intercultural communication is as old as humankind, coming into existence the first-time people from different tribal cultures encountered one another and tried to communicate. History is filled with accounts of people endeavouring to learn other languages and understand different cultures. While the motives may be varied to include travel, trade, intellectual exchange, religious proselytization, economy, colonization or political subjugation. Rapid, affordable means of transportation have facilitated increased contact among cultures, giving rise to international economic interdependencies, transnational corporations and culturally diverse workforces. The number of intercultural marriages continues to rise and immigration is increasing unabated. These developments have created a requirement for communicative skills appropriate for life in a multicultural global village; regardless we remain at home, visit another country or sojourn abroad. Literature is the most important commodity for cultural industry. Cultural differences often lead to and cause miscommunication and conflict. Literature gives the knowledge that people need to have in order to function effectively in their social environment. Literature is most useful when interacting with another culture, a shared pattern of beliefs, attitudes, self-definition norms and values organized around them. Intercultural communicative competence is dependent on mutual knowledge of existing diversity. As a global citizen not only must we appreciate cultural diversity, we must learn from that diversity. Cultural difference is viewed from lens of one's own literature, but to understand and learn from another culture we must understand the literature of the culture and its impact on the forms of communication. The paper seeks to examine how literature provides us an insight into the underlying cultural values, beliefs and assumptions which actually shape the visible cultural manifestations. If individuals could attain higher degree of intercultural competence, they would presumably become better citizens, students, teachers, business people, and so forth. Society would be more peaceful, more productive, and become generally a more attractive place to live in. Individuals would be able to better understand others who are unlike themselves.

Keywords

Intercultural, Communicative competence, Diversity, Cultural values, Global citizen.

Dr. Gitanjali Mahendra



https://www.indianjournals.com/ijor.aspx?target=ijor:bajrp&type=home

IndianJournals.com
A product of Diva Enterprises Pvt. Ltd.

(136.232.176.10)

Home | About us | My Profile | Registration | Products | Article Submission | Usage Statistics | Price List 2023 | Contact Us | Tutorial | Login/Register

Email id | Log In

JOURNAL OF RESEARCH THE BEDE ATHENAEUM

Journal Home
Current Issue
Archive / Issues
Registration
Subscribe
Editorial Board
Aims & Scope
Author Guidelines
Ethics & Malpractice
Subscribe TOC Alerts

Article Submission

FREE
Sample Issue
Trial Access

Journal of Research: THE BEDE ATHENAEUM

Publisher: St. Bede's College Shimla

Print ISSN: 0976-0598

Online ISSN: 0976-1748

Number of issues per year: 1
Print frequency: Annually
Month of publication: March
Description:

Journal of Research: THE BEDE ATHENAEUM is an official publication of St. Bede's Educational Society, Shimla, India. **This multidisciplinary international peer-reviewed journal** aims at promoting and publishing new concepts, knowledge and ideas from the languages, arts, social sciences applied sciences and education, thereby providing scholars a vibrant forum for sharing their research and perspectives with the academic fraternity from across India and abroad.

The journal is published on an annual basis and its soft copy is uploaded by indianjournals.com within the month of March every year. The hard copy version is printed and posted to a mailing list of prominent academic institutions of higher learning within the month of April, following its being made accessible through web links allotted to each of the published research papers.

The journal is a peer-reviewed publication. Each paper submitted for consideration by the Editorial team is stringently reviewed by three anonymous referees. Interested authors of research papers should submit their manuscripts by October 31, after which the editors will initiate the process of peer reviewing by experts from the concerned academic fields. Each manuscript must include an abstract and be submitted in MS Word format. There is no

Call for Paper
Current Issue

4. Ms. Raman Matharu - Commerce & Management

International Journal of Advanced Research and Development

Year-2021

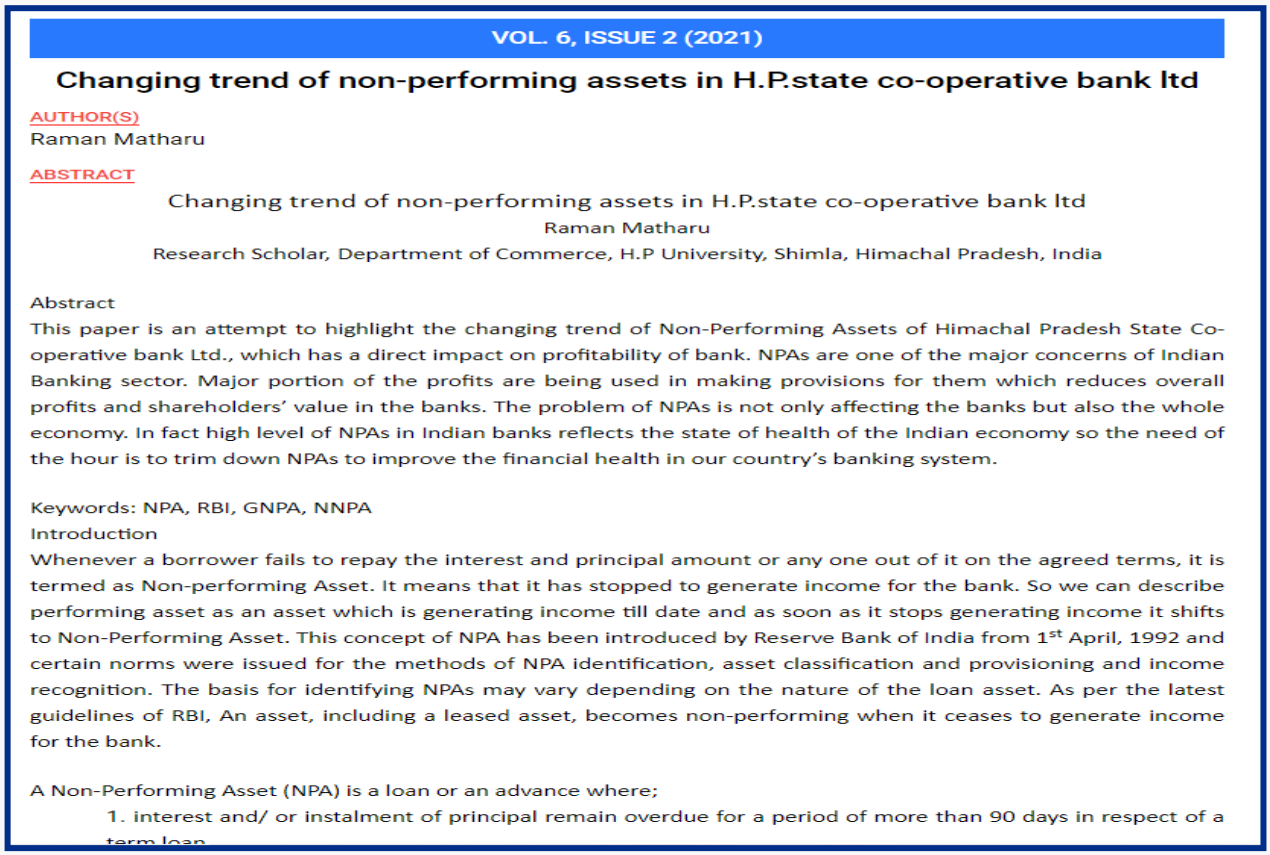
ISSN 2455-4030

Link to the website of the Journal: https://www.multidisciplinaryjournal.net/

Link to article/paper/abstract of the paper:

https://www.multidisciplinaryjournal.net/archives/2021/vol6/issue2

6-1-22-140.pdf (multidisciplinaryjournal.net)



VOL. 6, ISSUE 2 (2021)

Changing trend of non-performing assets in H.P.state co-operative bank ltd

AUTHOR(S)

Raman Matharu

ABSTRACT

Changing trend of non-performing assets in H.P.state co-operative bank ltd

Raman Matharu

Research Scholar, Department of Commerce, H.P University, Shimla, Himachal Pradesh, India

Abstract

This paper is an attempt to highlight the changing trend of Non-Performing Assets of Himachal Pradesh State Co-operative bank Ltd., which has a direct impact on profitability of bank. NPAs are one of the major concerns of Indian Banking sector. Major portion of the profits are being used in making provisions for them which reduces overall profits and shareholders' value in the banks. The problem of NPAs is not only affecting the banks but also the whole economy. In fact high level of NPAs in Indian banks reflects the state of health of the Indian economy so the need of the hour is to trim down NPAs to improve the financial health in our country's banking system.

Keywords: NPA, RBI, GNPA, NNPA

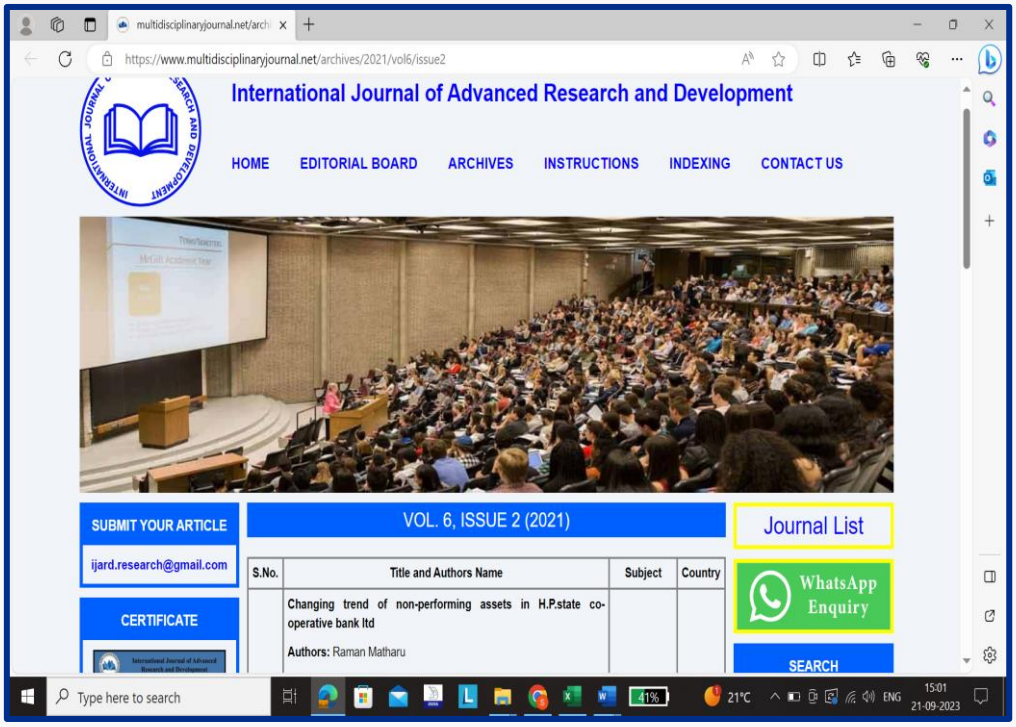
Introduction

Whenever a borrower fails to repay the interest and principal amount or any one out of it on the agreed terms, it is termed as Non-performing Asset. It means that it has stopped to generate income for the bank. So we can describe performing asset as an asset which is generating income till date and as soon as it stops generating income it shifts to Non-Performing Asset. This concept of NPA has been introduced by Reserve Bank of India from 1st April, 1992 and certain norms were issued for the methods of NPA identification, asset classification and provisioning and income recognition. The basis for identifying NPAs may vary depending on the nature of the loan asset. As per the latest guidelines of RBI, An asset, including a leased asset, becomes non-performing when it ceases to generate income for the bank.

A Non-Performing Asset (NPA) is a loan or an advance where;

1. interest and/ or instalment of principal remain overdue for a period of more than 90 days in respect of a term loan

Ms. Raman Matharu



International Journal of Advanced Research and Development
ISSN: 2455-4030; Impact Factor: RJIF 5.24
Received: 05-01-2021; Accepted: 12-02-2021; Published: 03-03-2021
www.advancedjournal.com
Volume 6; Issue 2; 2021; Page No. 01-03

Changing trend of non-performing assets in H.P.state co-operative bank ltd

Raman Matharu
Research Scholar, Department of Commerce, H.P University, Shimla, Himachal Pradesh, India

Abstract
This paper is an attempt to highlight the changing trend of Non-Performing Assets of Himachal Pradesh State Co-operative bank Ltd., which has a direct impact on profitability of bank. NPAs are one of the major concerns of Indian Banking sector. Major portion of the profits are being used in making provisions for them which reduces overall profits and shareholders' value in the banks. The problem of NPAs is not only affecting the banks but also the whole economy. In fact high level of NPAs in Indian banks reflects the state of health of the Indian economy so the need of the hour is to trim down NPAs to improve the financial health in our country's banking system.

Keywords: NPA, RBI, GNPA, NNPA

Introduction
Whenever a borrower fails to repay the interest and principal amount or any one out of it on the agreed terms, it is termed as Non-performing Asset. It means that it has stopped to generate income for the bank. So we can describe performing asset as an asset which is generating income till date and as soon as it stops generating income it shifts to Non-Performing Asset. This concept of NPA has been introduced by Reserve Bank of India from 1st April, 1992 and certain norms were issued for the methods of NPA identification, asset classification and provisioning and income recognition. The basis for identifying NPAs may vary depending on the nature of the loan asset. As per the latest guidelines of RBI, An asset, including a leased asset, becomes non-performing when it ceases to generate income for the bank.

A Non-Performing Asset (NPA) is a loan or an advance where;

1. interest and/ or instalment of principal remain overdue for a period of more than 90 days in respect of a term loan,
2. the account remains 'out of order', in respect of an Overdraft/Cash Credit (OD/CC),
3. the bill remains overdue for a period of more than 90 days in the case of bills purchased and discounted,
4. the instalment of principal or interest there on remains interest due and charged during any quarter is not serviced fully within 90 days from the end of the quarter.

Asset Classification
Categories of NPAs: Banks are required to classify Non-Performing Assets further into the following three categories based on the period for which the asset has remained non-performing and the realisability of the dues:
Substandard Assets: With effect from 31 March 2005, a substandard asset would be one, which has remained NPA for a period less than or equal to 12 months. In such cases, the current net worth of the borrower/ guarantor or the current market value of the security charged is not enough to ensure recovery of the dues to the banks in full.
Doubtful Assets: With effect from March 31, 2005, an asset would be classified as doubtful if it has remained in the sub-standard category for a period of 12 months. A loan classified as doubtful has all the weaknesses inherent in assets that were classified as substandard, with the added characteristic that the weaknesses make collection or liquidation in full, – on the basis of currently known facts, conditions and values – highly questionable and improbable.
Loss Assets: A loss asset is one where loss has been identified by the bank or internal or external auditors or the Reserve Bank of India inspection but the amount has not been written off wholly.

Ms. Raman Matharu

5. Dr. Shruti Gupta – Biotechnology

Journal of Medical Discovery

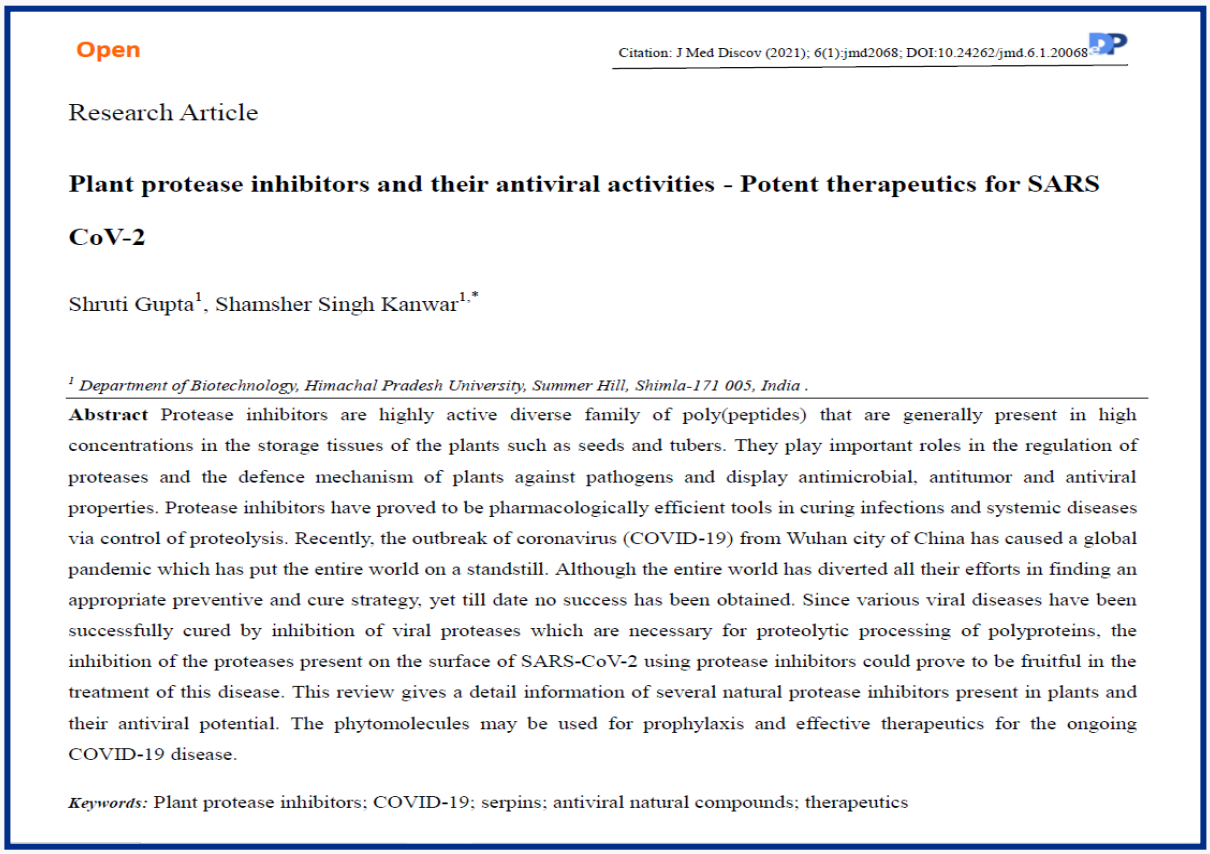
Year: 2021

ISSN 2476-129X

Link to the website of the Journal: http://www.e-discoverypublication.com/jmd/

Link to article/paper/abstract of the paper: http://www.e-discoverypublication.com/jmd-volume-6-issue-1/

(PDF) Plant protease inhibitors and their antiviral activities - Potent therapeutics for SARS CoV-2 (researchgate.net)



Open

Citation: J Med Discov (2021); 6(1):jmd2068; DOI:10.24262/jmd.6.1.20068

Research Article

Plant protease inhibitors and their antiviral activities - Potent therapeutics for SARS CoV-2

Shruti Gupta[1], Shamsher Singh Kanwar[1,*]

[1] *Department of Biotechnology, Himachal Pradesh University, Summer Hill, Shimla-171 005, India .*

Abstract Protease inhibitors are highly active diverse family of poly(peptides) that are generally present in high concentrations in the storage tissues of the plants such as seeds and tubers. They play important roles in the regulation of proteases and the defence mechanism of plants against pathogens and display antimicrobial, antitumor and antiviral properties. Protease inhibitors have proved to be pharmacologically efficient tools in curing infections and systemic diseases via control of proteolysis. Recently, the outbreak of coronavirus (COVID-19) from Wuhan city of China has caused a global pandemic which has put the entire world on a standstill. Although the entire world has diverted all their efforts in finding an appropriate preventive and cure strategy, yet till date no success has been obtained. Since various viral diseases have been successfully cured by inhibition of viral proteases which are necessary for proteolytic processing of polyproteins, the inhibition of the proteases present on the surface of SARS-CoV-2 using protease inhibitors could prove to be fruitful in the treatment of this disease. This review gives a detail information of several natural protease inhibitors present in plants and their antiviral potential. The phytomolecules may be used for prophylaxis and effective therapeutics for the ongoing COVID-19 disease.

Keywords: Plant protease inhibitors; COVID-19; serpins; antiviral natural compounds; therapeutics

Dr. Shruti Gupta

Dr. Shruti Gupta

6. Dr. Kusum- Botany

The Bede Athenaeum

Year: 2021

ISSN 0976-1748 (Online)

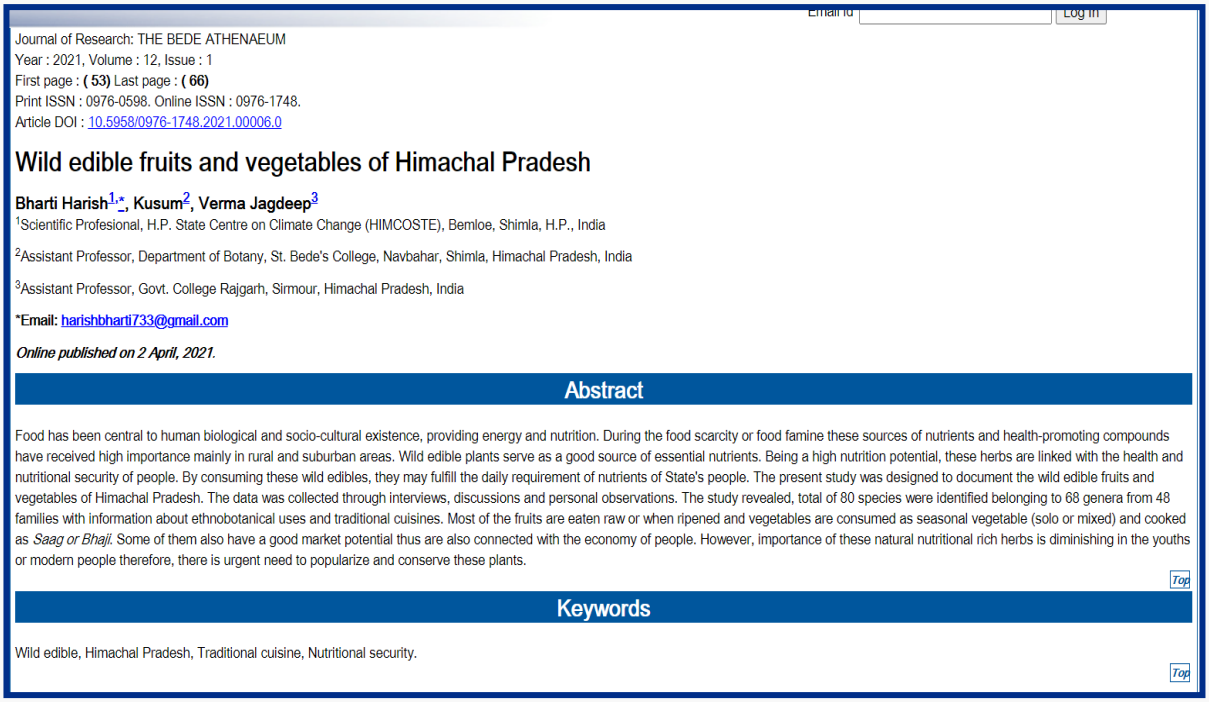
Link to the website of the Journal:

https://www.indianjournals.com/ijor.aspx?target=ijor:bajrp&type=home

Link to article/paper/abstract of the paper:

https://www.indianjournals.com/ijor.aspx?target=ijor:bajrp&volume=12&issue=1&type=toc

http://dx.doi.org/10.5958/0976-1748.2021.00006.0



Email Id Log In

Journal of Research: THE BEDE ATHENAEUM
Year : 2021, Volume : 12, Issue : 1
First page : (53) Last page : (66)
Print ISSN : 0976-0598. Online ISSN : 0976-1748.
Article DOI : 10.5958/0976-1748.2021.00006.0

Wild edible fruits and vegetables of Himachal Pradesh

Bharti Harish[1,*], Kusum[2], Verma Jagdeep[3]
[1]Scientific Profesional, H.P. State Centre on Climate Change (HIMCOSTE), Bemloe, Shimla, H.P., India
[2]Assistant Professor, Department of Botany, St. Bede's College, Navbahar, Shimla, Himachal Pradesh, India
[3]Assistant Professor, Govt. College Rajgarh, Sirmour, Himachal Pradesh, India
***Email:** harishbharti733@gmail.com

Online published on 2 April, 2021.

Abstract

Food has been central to human biological and socio-cultural existence, providing energy and nutrition. During the food scarcity or food famine these sources of nutrients and health-promoting compounds have received high importance mainly in rural and suburban areas. Wild edible plants serve as a good source of essential nutrients. Being a high nutrition potential, these herbs are linked with the health and nutritional security of people. By consuming these wild edibles, they may fulfill the daily requirement of nutrients of State's people. The present study was designed to document the wild edible fruits and vegetables of Himachal Pradesh. The data was collected through interviews, discussions and personal observations. The study revealed, total of 80 species were identified belonging to 68 genera from 48 families with information about ethnobotanical uses and traditional cuisines. Most of the fruits are eaten raw or when ripened and vegetables are consumed as seasonal vegetable (solo or mixed) and cooked as *Saag or Bhaji*. Some of them also have a good market potential thus are also connected with the economy of people. However, importance of these natural nutritional rich herbs is diminishing in the youths or modern people therefore, there is urgent need to popularize and conserve these plants.

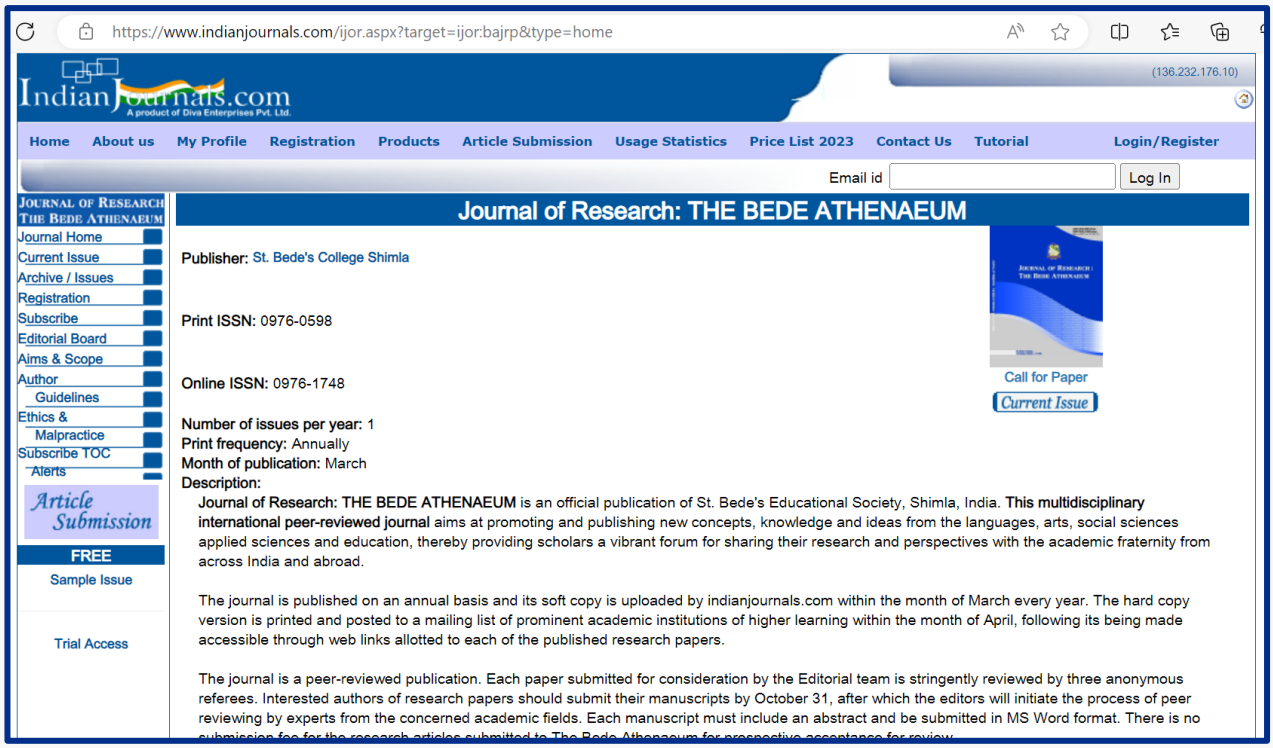
Top

Keywords

Wild edible, Himachal Pradesh, Traditional cuisine, Nutritional security.

Top

Dr. Kusum


https://www.indianjournals.com/ijor.aspx?target=ijor:bajrp&type=home
IndianJournals.com
A product of Diva Enterprises Pvt. Ltd.
(136.232.176.10)
Home
About us
My Profile
Registration
Products
Article Submission
Usage Statistics
Price List 2023
Contact Us
Tutorial
Login/Register
Email id
Log In
JOURNAL OF RESEARCH THE BEDE ATHENAEUM
Journal Home
Current Issue
Archive / Issues
Registration
Subscribe
Editorial Board
Aims & Scope
Author Guidelines
Ethics & Malpractice
Subscribe TOC Alerts
Article Submission
FREE
Sample Issue
Trial Access
Journal of Research: THE BEDE ATHENAEUM
Publisher: St. Bede's College Shimla
Print ISSN: 0976-0598
Online ISSN: 0976-1748
Call for Paper
Current Issue
Number of issues per year: 1
Print frequency: Annually
Month of publication: March
Description:
Journal of Research: THE BEDE ATHENAEUM is an official publication of St. Bede's Educational Society, Shimla, India. This multidisciplinary international peer-reviewed journal aims at promoting and publishing new concepts, knowledge and ideas from the languages, arts, social sciences applied sciences and education, thereby providing scholars a vibrant forum for sharing their research and perspectives with the academic fraternity from across India and abroad.
The journal is published on an annual basis and its soft copy is uploaded by indianjournals.com within the month of March every year. The hard copy version is printed and posted to a mailing list of prominent academic institutions of higher learning within the month of April, following its being made accessible through web links allotted to each of the published research papers.
The journal is a peer-reviewed publication. Each paper submitted for consideration by the Editorial team is stringently reviewed by three anonymous referees. Interested authors of research papers should submit their manuscripts by October 31, after which the editors will initiate the process of peer reviewing by experts from the concerned academic fields. Each manuscript must include an abstract and be submitted in MS Word format. There is no

2020-2021

1. Dr. Jyotika Brari - Zoology Deparment

Journal of Research: International Journal of Pharmaceutical & Biological Archives
Year-2021
ISSN 2582-6050
Link to website of the Journal- International Journal of Pharmaceutical and Biological Science Archive (ijpba.in)
Link to article/paper/abstract of the article-
http://www.ijpba.info/index.php/ijpba/article/view/1963

ISSN 258

1

Available Online at www.ijpba.info
International Journal of Pharmaceutical & Biological Archives 2021; 12(4):163-169

RESEARCH ARTICLE

Bioactivity of an Ionic Liquid against Two Major Coleopteran Stored Grain Insect Pests

Jyotika Brari, Shweta Thakur
St. Bede's College, Shimla, Himachal Pradesh, India

Received: 30 September 2021; Revised: 17 October 2021; Accepted: 15 November 2021

ABSTRACT

Introduction: Insecticidal efficacy of a monoterpene-based ionic liquid was evaluated against two Coleopteran insect pests, viz., the red flour beetle, *Tribolium castaneum* Herbst. and the drug store beetle, *Stegobium paniceum* (L). **Methods:** Bioassays for contact activity against adult insects, larvicidal activity, repellent activity, and antifeedant activity were conducted in the laboratory for the above said insect pests. **Results:** Ionic liquid at a highest concentration of 1.0 µl/cm² proved to be most effective against adults of *S. paniceum* producing 76.23 ± 1.9% mortality while 70.12±3.5% mortality was obtained against *T. castaneum* after 72 h, respectively. *T. castaneum* larvae were most susceptible to all the doses of ionic liquid at a highest dose of 100 µl/ml of ionic liquid 80.08 ± 2.2 mortality was obtained followed by a mortality of 68.32±1.8% for *S. paniceum* among 8-10 day old larvae. Ionic liquid showed remarkable repellency at different doses of 2, 6 and 10 µl/cm² against both insect pests. For *S. paniceum* 75.45 ± 1.9, 80.28 ± 2.4 and 56.35 ± 4.8% repellency was observed at 10 µl/cm² of ionic liquid after 3, 5 and 24 h. Ionic liquid proved to be effective seed protectant against both the insect pests. 87.99 ± 0.14% FDI was recorded with 5.10 ± 0.30 grain damage at 300 µl/g of ionic liquid, respectively, while 72.32 ± 0.18% grain damage was observed in control for *T. castaneum*.

Keywords: Antifeedant, insect pests, ionic liquid, larvicidal, repellent activity

INTRODUCTION

Severe damage in weight and nature of the stored products is caused by many insects.[1] Adult and juvenile insects form attack many flour factories, distribution centers and supermarkets and feed on an extremely wide assortment of dry vegetable substances, for example, processed cereal items. Interest in the utilization of monetarily accessible bio insecticide sprays and future possibilities for the improvement of new natural arrangements in plant protection has fundamentally expanded as of late. Bio insecticide sprays of business accessibility have produced a great deal of interest in the territory of plant protection with respect to new organic planning advancement. The characteristic items dependent on plants are generally less unsafe to climate and mammalian wellbeing when contrasted with manufactured synthetic pesticides. Thusly to lessen the negative effects on human wellbeing and climate regular items are the best option in contrast to engineered pesticides. Pesticides derived from plant fundamental oils or their constituents have set up extraordinary proficiency against the expansive scope of stored product damage. Monoterpenes containing ten carbons are a class of plant obtained metabolites. As the fundamental constituents of essential oil, these impart plants their exceptional odoriferous properties. Usually containing 1–3 terpenes as significant parts and numerous others as minor segments the oil constitution is unique for each plant species.[2] In the case of *Sitophilus oryzae*, the red flour beetle, *Tribolium castaneum* and the sawtoothed grain insect, *Oryzaephilus surinamensis* some usual monoterpenoids have been demonstrated to exhibit fumigant toxicity.[3] Four stored product

*Corresponding Author:
Jyotika Brari,
E-mail: jyotika58brari@gmail.com

Dr. Jyotika Brari

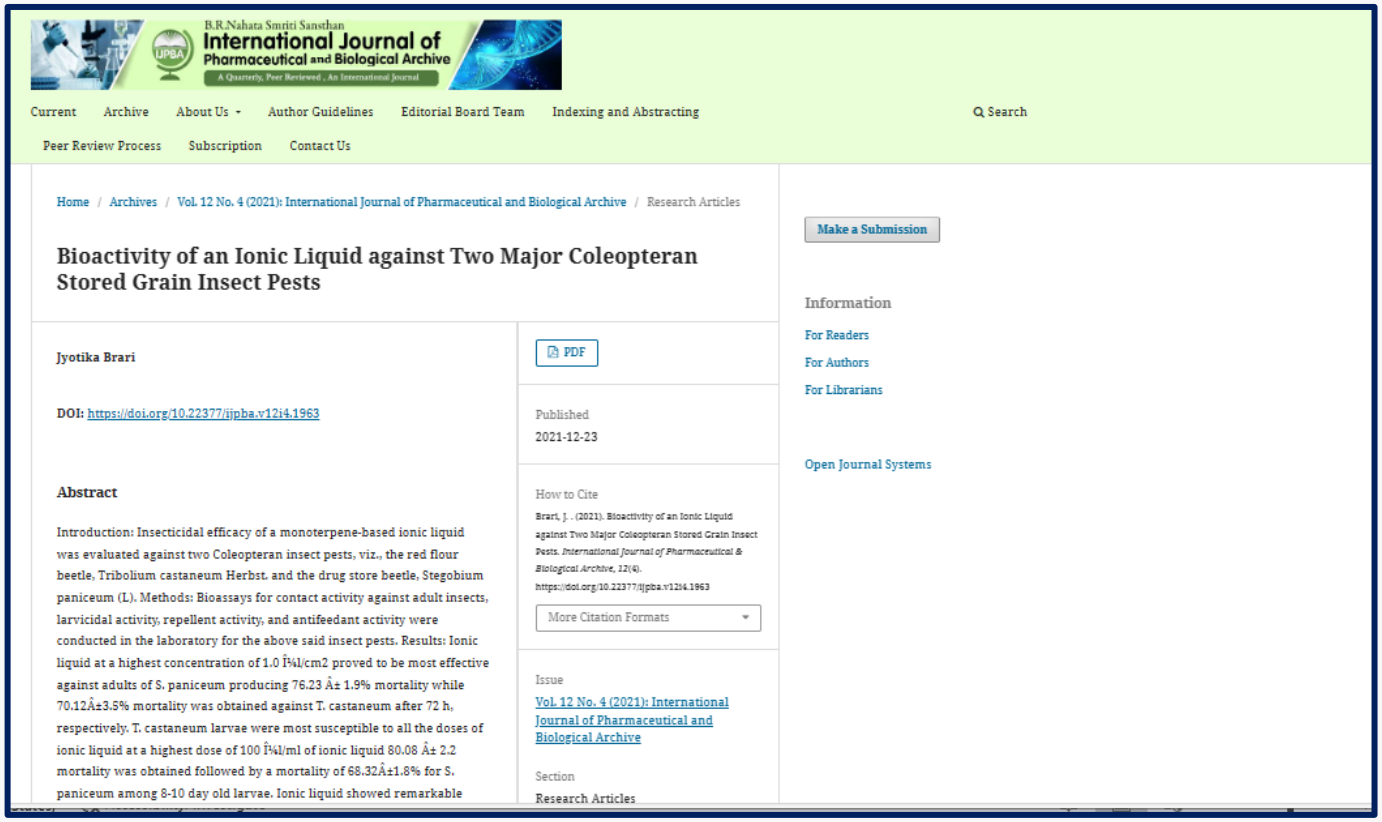
List of journals approved by UGC

Sl.No.	Journal No	Title	Publisher	ISSN	E-ISSN
1	98	2D Materials	IOP Publishing Ltd	20531583	20531583
2	99	3 Biotech	Springer Heidelberg	2190572X	21905738
3	100	3D Printing and Additive Manufacturing	Mary Ann Liebert, Inc	23297662	23297670
4	101	3D Research	Springer Science + Business Media		20926731
5	104	3L: Language, Linguistics, Literature	Penerbit Universiti Kebangsaan Malaysia	1285157	
6	63621	452ºF. Revista de Teoría de la literatura y Literatura Comparada	452ºF. Revista de Teoría de la literatura y Literatura Comparada		20133294
7	105	4OR	Springer Verlag	16194500	16142411
8	107	A & A case reports	Wolters Kluwer Health	23257237	
9	108	A + U-Architecture and Urbanism	A & U Publ Co Ltd	3899160	
10	109	A Contrario. Revue Interdisciplinaire De Sciences Sociales	Editions Antipodes	16607880	
11	41142	A.B.I. Technik	Walter de Gruyter GmbH	7206763	21914664
12	122	a/b: Auto/Biography Studies	Taylor and Francis Ltd	21517290	
13	123	A|Z ITU Journal of Faculty of Architecture	Orhan Hacihasanoglu Itu Faculty of Architecture	13028324	
14	124	AAA, Arbeiten aus Anglistik und Amerikanistik	Gunter Narr Verlag	1715410	
15	125	AAC: Augmentative and Alternative Communication	Informa Healthcare	7434618	14773848
16	126	AACL Bioflux	Bioflux Publishing House	18448143	18449166
17	127	AACN Advanced Critical Care	Lippincott Williams & Wilkins Ltd	15597768	
18	40764	Aadarshah	Shri Bhagavandas Aaadarsh Sanskrit Mahavidyalaya, Haridwar, Uttarakhand	22307427	
19	41100	Aajkal	Suchna Bhawan, Lodhi Road, New Delhi.	0971846X	
20	41132	Aalami Urdu Adab (Quarterly)	Sant Gadge Baba Amravati University	23947616	
21	130	AANA Journal	AANA Publishing Inc.	946354	
22	132	AAO Journal	American Academy of Osteopathy	23755776	
23	63632	AAOU Journal	ASIAN ASSOCIATION OF OPEN UNIVERSITY, PHILLIPINES	18583431	24146994
24	134	AAPG Bulletin	Amer Assoc Petroleum Geologist	1491423	15589153

Page 1

Sl.No.	Journal No	Title	Publisher	ISSN	E-ISSN
11269	23319	International Journal of Pharmaceutical and Biological Archive	Editor-in-chief-Mr. M.A. Naidu	9763333	
11270	23322	International Jou al of Pharmaceutica Healthcare M	Emerald Group Publishing Ltd	17506123	
11271	23323	International Jo al of Pharmaceutical Phytopharmaco cal Research	Arya Publishing House	22501029	22496084
11272	23326	International Jo al of Pharmaceutical Compounding	International Journal of Pharmaceutical Compounding (Ijpc)	10924221	
11273	64186	International Journal of Pharmaceutical investigation	Medknow Publication and media pvt. Ltd	2230973X	22309713
11274	23325	International Journal of Pharmaceutical Quality Assurance	In-Ijpqa	9759506	
11275	63703	International journal of	Association of Indian	9752366	

Dr. Jyotika Brari (UGC- CARE List)



B.R.Nahata Smriti Sansthan
International Journal of Pharmaceutical and Biological Archive
A Quarterly, Peer Reviewed , An International Journal

Current Archive About Us Author Guidelines Editorial Board Team Indexing and Abstracting Search
Peer Review Process Subscription Contact Us

Home / Archives / Vol. 12 No. 4 (2021): International Journal of Pharmaceutical and Biological Archive / Research Articles

Bioactivity of an Ionic Liquid against Two Major Coleopteran Stored Grain Insect Pests

Jyotika Brari

DOI: https://doi.org/10.22377/ijpba.v12i4.1963

PDF

Published
2021-12-23

How to Cite
Brari, J. . (2021). Bioactivity of an Ionic Liquid against Two Major Coleopteran Stored Grain Insect Pests. *International Journal of Pharmaceutical & Biological Archive*, *12*(4). https://doi.org/10.22377/ijpba.v12i4.1963

More Citation Formats

Issue
Vol. 12 No. 4 (2021): International Journal of Pharmaceutical and Biological Archive

Section
Research Articles

Make a Submission

Information
For Readers
For Authors
For Librarians

Open Journal Systems

Abstract

Introduction: Insecticidal efficacy of a monoterpene-based ionic liquid was evaluated against two Coleopteran insect pests, viz., the red flour beetle, Tribolium castaneum Herbst. and the drug store beetle, Stegobium paniceum (L). Methods: Bioassays for contact activity against adult insects, larvicidal activity, repellent activity, and antifeedant activity were conducted in the laboratory for the above said insect pests. Results: Ionic liquid at a highest concentration of 1.0 Î¼l/cm2 proved to be most effective against adults of S. paniceum producing 76.23 Â± 1.9% mortality while 70.12Â±3.5% mortality was obtained against T. castaneum after 72 h, respectively. T. castaneum larvae were most susceptible to all the doses of ionic liquid at a highest dose of 100 Î¼l/ml of ionic liquid 80.08 Â± 2.2 mortality was obtained followed by a mortality of 68.32Â±1.8% for S. paniceum among 8-10 day old larvae. Ionic liquid showed remarkable

Dr. Jyotika Brari

2. Dr. Shweta Thakur- Zoology deparment

Journal of Research: International Journal of Pharmaceutical & Biological Archives

Year 2021

ISSN 2582-6050

Link to website of the Journal- International Journal of Pharmaceutical and Biological Science Archive (ijpba.in)

Link to article/paper/abstract of the article- http://www.ijpba.info/index.php/ijpba/article/view/1963

ISSN 258

1

Available Online at www.ijpba.info

International Journal of Pharmaceutical & Biological Archives 2021; 12(4):163-169

RESEARCH ARTICLE

Bioactivity of an Ionic Liquid against Two Major Coleopteran Stored Grain Insect Pests

Jyotika Brari, Shweta Thakur

St. Bede's College, Shimla, Himachal Pradesh, India

Received: 30 September 2021; Revised: 17 October 2021; Accepted: 15 November 2021

ABSTRACT

Introduction: Insecticidal efficacy of a monoterpene-based ionic liquid was evaluated against two Coleopteran insect pests, viz., the red flour beetle, *Tribolium castaneum* Herbst. and the drug store beetle, *Stegobium paniceum* (L). **Methods:** Bioassays for contact activity against adult insects, larvicidal activity, repellent activity, and antifeedant activity were conducted in the laboratory for the above said insect pests. **Results:** Ionic liquid at a highest concentration of 1.0 µl/cm² proved to be most effective against adults of *S. paniceum* producing 76.23 ± 1.9% mortality while 70.12±3.5% mortality was obtained against *T. castaneum* after 72 h, respectively. *T. castaneum* larvae were most susceptible to all the doses of ionic liquid at a highest dose of 100 µl/ml of ionic liquid 80.08 ± 2.2 mortality was obtained followed by a mortality of 68.32±1.8% for *S. paniceum* among 8-10 day old larvae. Ionic liquid showed remarkable repellency at different doses of 2, 6 and 10 µl/cm² against both insect pests. For *S. paniceum* 75.45 ± 1.9, 80.28 ± 2.4 and 56.35 ± 4.8% repellency was observed at 10 µl/cm² of ionic liquid after 3, 5 and 24 h. Ionic liquid proved to be effective seed protectant against both the insect pests. 87.99 ± 0.14% FDI was recorded with 5.10 ± 0.30 grain damage at 300 µl/g of ionic liquid, respectively, while 72.32 ± 0.18% grain damage was observed in control for *T. castaneum.*

Keywords: Antifeedant, insect pests, ionic liquid, larvicidal, repellent activity

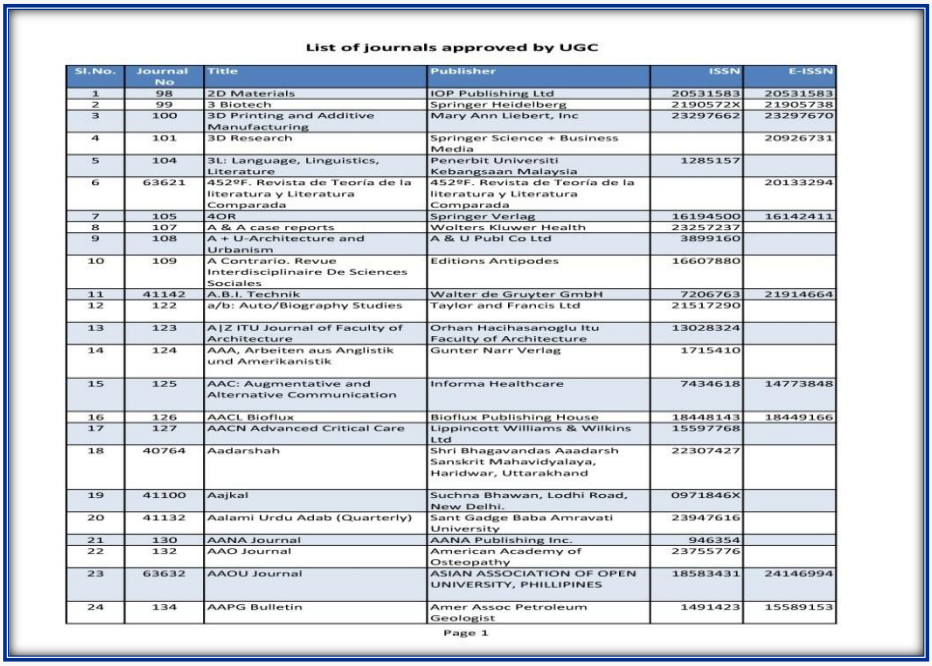
INTRODUCTION

Severe damage in weight and nature of the stored products is caused by many insects.[1] Adult and juvenile insects form attack many flour factories, distribution centers and supermarkets and feed on an extremely wide assortment of dry vegetable substances, for example, processed cereal items. Interest in the utilization of monetarily accessible bio insecticide sprays and future possibilities for the improvement of new natural arrangements in plant protection has fundamentally expanded as of late. Bio insecticide sprays of business accessibility have produced a great deal of interest in the territory of plant protection with respect to new organic planning advancement. The characteristic items dependent on plants are generally less unsafe to climate and mammalian wellbeing when contrasted with manufactured synthetic pesticides. Thusly to lessen the negative effects on human wellbeing and climate regular items are the best option in contrast to engineered pesticides. Pesticides derived from plant fundamental oils or their constituents have set up extraordinary proficiency against the expansive scope of stored product damage. Monoterpenes containing ten carbons are a class of plant obtained metabolites. As the fundamental constituents of essential oil, these impart plants their exceptional odoriferous properties. Usually containing 1–3 terpenes as significant parts and numerous others as minor segments the oil constitution is unique for each plant species.[2] In the case of *Sitophilus oryzae*, the red flour beetle, *Tribolium castaneum* and the sawtoothed grain insect, *Oryzaephilus surinamensis* some usual monoterpenoids have been demonstrated to exhibit fumigant toxicity.[3] Four stored product

***Corresponding Author:**
Jyotika Brari,
E-mail: jyotika58brari@gmail.com

163

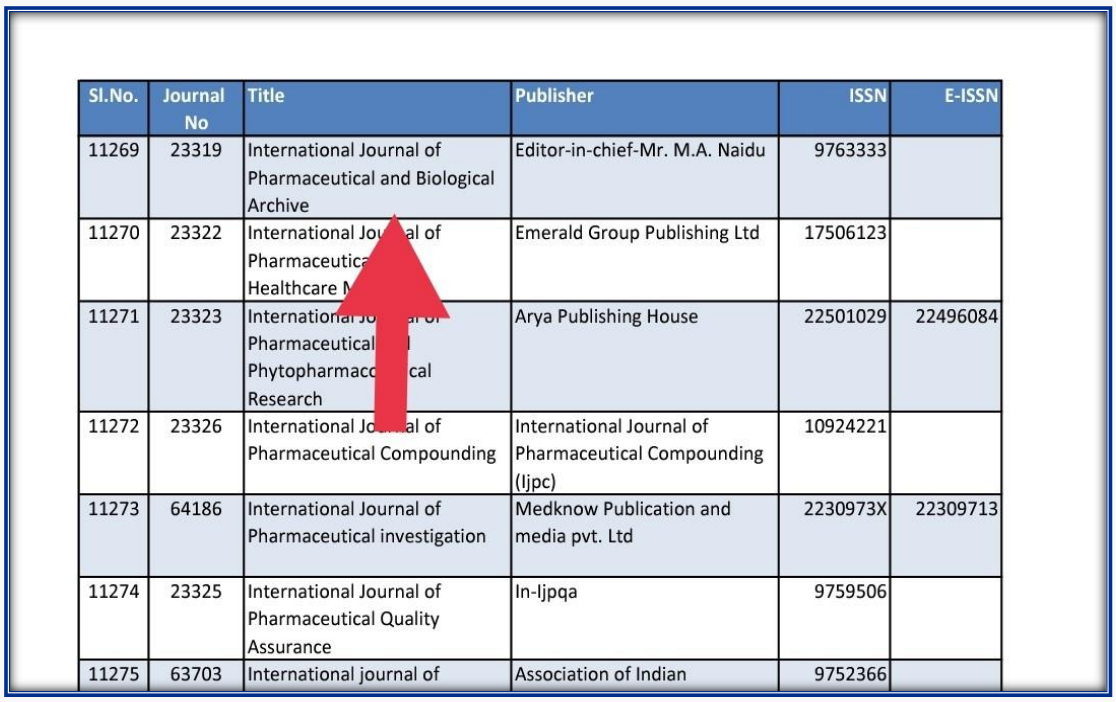
Dr. Shweta Thakur



List of journals approved by UGC

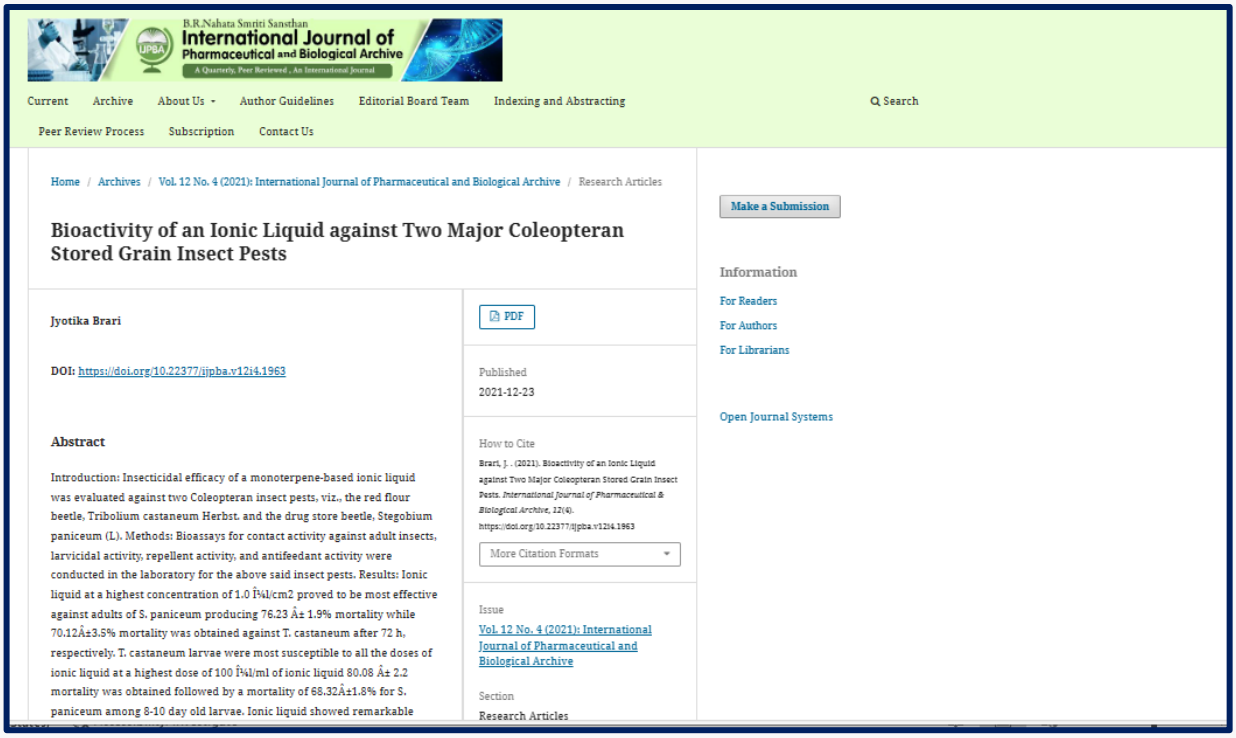
Sl.No.	Journal No	Title	Publisher	ISSN	E-ISSN
1	98	2D Materials	IOP Publishing Ltd	20531583	20531583
2	99	3 Biotech	Springer Heidelberg	2190572X	21905738
3	100	3D Printing and Additive Manufacturing	Mary Ann Liebert, Inc	23297662	23297670
4	101	3D Research	Springer Science + Business Media		20926731
5	104	3L: Language, Linguistics, Literature	Penerbit Universiti Kebangsaan Malaysia	1285157	
6	63621	452ºF. Revista de Teoría de la literatura y Literatura Comparada	452ºF. Revista de Teoría de la literatura y Literatura Comparada		20133294
7	105	4OR	Springer Verlag	16194500	16142411
8	107	A & A case reports	Wolters Kluwer Health	23257237	
9	108	A + U-Architecture and Urbanism	A & U Publ Co Ltd	3899160	
10	109	A Contrario. Revue Interdisciplinaire De Sciences Sociales	Editions Antipodes	16607880	
11	41142	A.B.I. Technik	Walter de Gruyter GmbH	7206763	21914664
12	122	a/b: Auto/Biography Studies	Taylor and Francis Ltd	21517290	
13	123	A|Z ITU Journal of Faculty of Architecture	Orhan Hacihasanoglu Itu Faculty of Architecture	13028324	
14	124	AAA, Arbeiten aus Anglistik und Amerikanistik	Gunter Narr Verlag	1715410	
15	125	AAC: Augmentative and Alternative Communication	Informa Healthcare	7434618	14773848
16	126	AACL Bioflux	Bioflux Publishing House	18448143	18449166
17	127	AACN Advanced Critical Care	Lippincott Williams & Wilkins Ltd	15597768	
18	40764	Aadarshah	Shri Bhagavandas Aadarsh Sanskrit Mahavidyalaya, Haridwar, Uttarakhand	22307427	
19	41100	Aajkal	Suchna Bhawan, Lodhi Road, New Delhi.	0971846X	
20	41132	Aalami Urdu Adab (Quarterly)	Sant Gadge Baba Amravati University	23947616	
21	130	AANA Journal	AANA Publishing Inc.	946354	
22	132	AAO Journal	American Academy of Osteopathy	23755776	
23	63632	AAOU Journal	ASIAN ASSOCIATION OF OPEN UNIVERSITY, PHILLIPINES	18583431	24146994
24	134	AAPG Bulletin	Amer Assoc Petroleum Geologist	1491423	15589153

Page 1



Sl.No.	Journal No	Title	Publisher	ISSN	E-ISSN
11269	23319	International Journal of Pharmaceutical and Biological Archive	Editor-in-chief-Mr. M.A. Naidu	9763333	
11270	23322	International Jou al of Pharmaceutica Healthcare M	Emerald Group Publishing Ltd	17506123	
11271	23323	Internationa Jo al of Pharmaceutical Phytopharmaco cal Research	Arya Publishing House	22501029	22496084
11272	23326	International Jo al of Pharmaceutical Compounding	International Journal of Pharmaceutical Compounding (Ijpc)	10924221	
11273	64186	International Journal of Pharmaceutical investigation	Medknow Publication and media pvt. Ltd	2230973X	22309713
11274	23325	International Journal of Pharmaceutical Quality Assurance	In-Ijpqa	9759506	
11275	63703	International journal of	Association of Indian	9752366	

Dr. Shweta Thakur (UGC- CARE List)



B.R.Nahata Smriti Sansthan
International Journal of Pharmaceutical and Biological Archive
A Quarterly, Peer Reviewed , An International Journal

Current Archive About Us Author Guidelines Editorial Board Team Indexing and Abstracting Search
Peer Review Process Subscription Contact Us

Home / Archives / Vol. 12 No. 4 (2021): International Journal of Pharmaceutical and Biological Archive / Research Articles

Bioactivity of an Ionic Liquid against Two Major Coleopteran Stored Grain Insect Pests

Jyotika Brari

DOI: https://doi.org/10.22377/ijpba.v12i4.1963

PDF

Published
2021-12-23

How to Cite
Brari, J. . (2021). Bioactivity of an Ionic Liquid against Two Major Coleopteran Stored Grain Insect Pests. *International Journal of Pharmaceutical & Biological Archive*, *12*(4). https://doi.org/10.22377/ijpba.v12i4.1963

More Citation Formats

Issue
Vol. 12 No. 4 (2021): International Journal of Pharmaceutical and Biological Archive

Section
Research Articles

Make a Submission

Information
For Readers
For Authors
For Librarians

Open Journal Systems

Abstract

Introduction: Insecticidal efficacy of a monoterpene-based ionic liquid was evaluated against two Coleopteran insect pests, viz., the red flour beetle, Tribolium castaneum Herbst. and the drug store beetle, Stegobium paniceum (L). Methods: Bioassays for contact activity against adult insects, larvicidal activity, repellent activity, and antifeedant activity were conducted in the laboratory for the above said insect pests. Results: Ionic liquid at a highest concentration of 1.0 Î¼l/cm2 proved to be most effective against adults of S. paniceum producing 76.23 Â± 1.9% mortality while 70.12Â±3.5% mortality was obtained against T. castaneum after 72 h, respectively. T. castaneum larvae were most susceptible to all the doses of ionic liquid at a highest dose of 100 Î¼l/ml of ionic liquid 80.08 Â± 2.2 mortality was obtained followed by a mortality of 68.32Â±1.8% for S. paniceum among 8-10 day old larvae. Ionic liquid showed remarkable

Dr. Shweta Thakur

3. Dr. Shruti Gupta– Biotechnology Deparment
Journal of Research: Journal Biomolecular Structure and Dynamics
Year: 2022
Print ISSN: 0739-1102 Online ISSN: 1538-0254
Link to website of the Journal- https://www.tandfonline.com/action/journalInformation?journalCode=tbsd20
Link to article/paper/abstract of the article- Molecular characterization and in silico analysis of oxalate decarboxylase of Pseudomonas sp. OXDC12: Journal of Biomolecular Structure and Dynamics: Vol 41, No 4 (tandfonline.com)

JOURNAL OF BIOMOLECULAR STRUCTURE AND DYNAMICS
https://doi.org/10.1080/07391102.2021.2024882

Taylor & Francis
Taylor & Francis Group

Check for updates

Molecular characterization and *in silico* analysis of oxalate decarboxylase of *Pseudomonas* sp. OXDC12

Shruti Gupta and Shamsher Singh Kanwar
Department of Biotechnology, Himachal Pradesh University, Summer Hill, Shimla, India
Communicated by Ramaswamy H. Sarma

ABSTRACT
Oxalate decarboxylase (OxDC) is a Mn-dependent hexameric enzyme that is highly important in management of calcium oxalate mediated nephrolithiasis. The present study reported the production and purification of OxDC from *Pseudomonas* sp. OXDC12 up to 45.3-fold with an overall yield of 7%. The purified OxDC displayed a single band of approximately 40 kDa on SDS-PAGE and 240 kDa on Native-PAGE suggesting it to be a hexameric enzyme. The purified OxDC displayed an optimum activity at 26 °C and pH 4.5 in the presence of substrate sodium oxalate (30 mg/mL) with a K_m and V_{max} value of 43.9 mM and 8.9 µmol/min, respectively and an activation energy of 52.49 kJ/mol. The enzyme activity was significantly enhanced by adding *o*-phenylenediamine to the reaction mixture. OxDC exhibited a very low 17 haemolytic activity which suggested a relatively safer therapeutic aspect of the tested OxDC. The structure prediction studies of the OxDC revealed a tertiary structure with α/β chains that formed the β barrel structure, typical of all cupin domains. The Ramachandran plot produced by PROCHECK shows that 90.5% of the residues are in the most favoured region and hence the OxDC model produced was a good one. Docking studies revealed the binding of the metal ions and ligands to cluster of three histidine residues in the *N* terminal domain that formed the active site pocket of the enzyme. It was suggested that the histidine coordinated Mn^{2+} ion was critical for substrate recognition and binding and was also directly involved in OxDC catalyses.

ARTICLE HISTORY
Received 23 May 2021
Accepted 18 December 2021

KEYWORDS
Oxalate decarboxylase; purification; characterization; gene analysis; homology modelling; docking

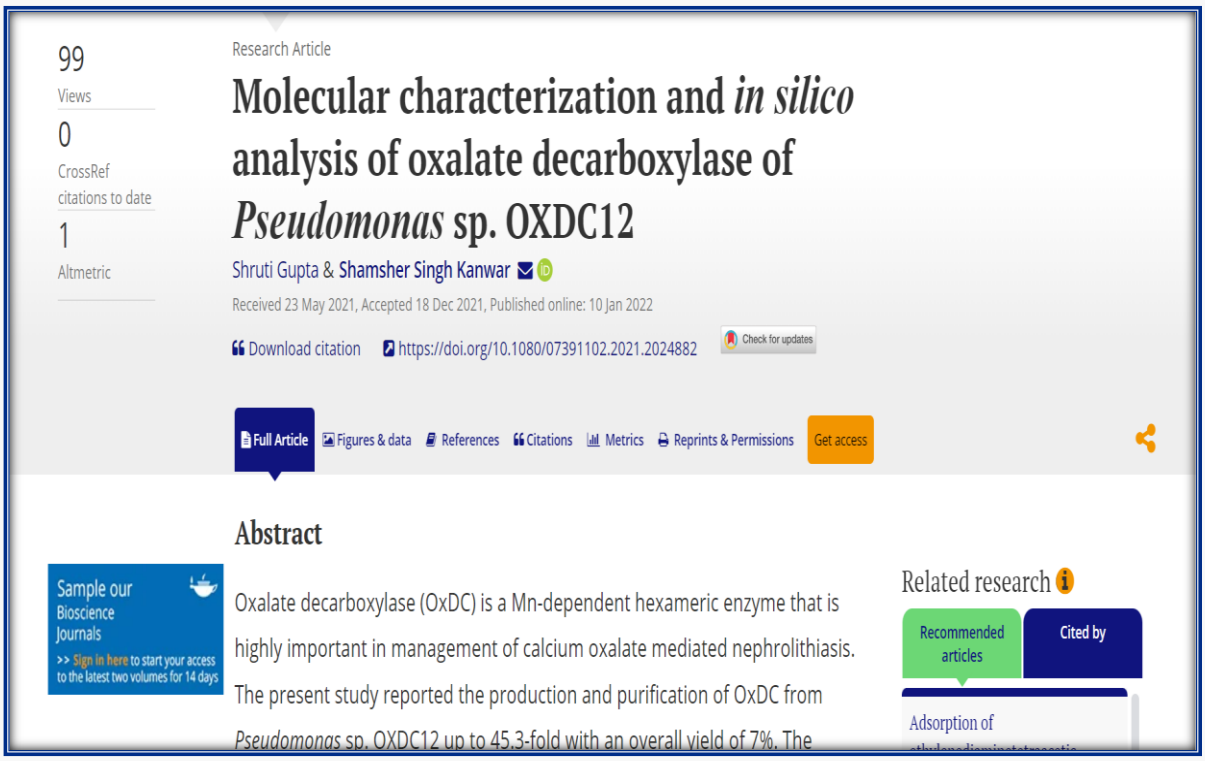
HIGHLIGHTS
- Oxalate decarboxylase (OxDC) was successfully purified from *Pseudomonas* sp. OXDC12 up-to 45.3-fold.
- The K_m and V_{max} values of the purified OxDC were calculated as 43.9 mM and 8.9 µmol/min, respectively.
- Genre analysis and structure prediction studies revealed the presence of β barrel structure typical of all cupin domains. The model exhibited a bi-cupin domain that forms the dimer of the homo-hexameric OxDC.
- Docking experiments revealed that the cluster of three HIS residues in the *N* terminal domain of the tested enzyme formed the active site pocket for binding of Mn as well as the ligands.

Introduction

Urolithiasis or the kidney stones is a chronic disease which leads to loss of kidney function(s) and nephrectomy. Several serious diseases such as transitional cell carcinoma (TCC) or renal cell carcinoma (RCC) and kidney tumours have been related with chronic kidney stone disease, since they have been found to be more frequent among patients with kidney stones (Gupta & Kanwar, 2020). A number of factors such as age, fluid intake, infections of the urinary tract, climatic conditions, sex, genetic predisposition, ethnicity as well as diet are considered responsible for the rate and prevalence of kidney stones. In a few cases, surgery becomes imperative to remove or break the stones as they may cause extreme pain, blockage of urine flow, urinary tract infection, hydronephrosis and severe bleeding. Although a number of treatments for kidney stones such as extracorporeal shock wave lithotripsy (ESWL) and drug therapy are available but their use is limited due to the severe side effects caused by exposure to these shock waves such as acute renal injury, decreased renal function and increased stone recurrence as well as due to their expensive nature. During the removal of water from the urine, the supersaturation of calcium oxalate leads to enhanced deposition of high levels of calcium oxalate in the form of crystals inside the kidneys which leads to the formation of kidney stone or urolithiasis (Gupta & Kanwar, 2020). Various *in vivo* and *in vitro* studies along with clinical trials have proposed the use of phyto-molecules in the treatment and management of kidney stones, however, they have been unsuccessful in preventing the re-occurrence

CONTACT Shamsher Singh Kanwar kanwarss2000@yahoo.com Department of Biotechnology, Himachal Pradesh University, Summer Hill, Shimla 171005, India.

Dr. Shruti Gupta



99
Views
0
CrossRef citations to date
1
Altmetric

Research Article

Molecular characterization and *in silico* analysis of oxalate decarboxylase of *Pseudomonas* sp. OXDC12

Shruti Gupta & Shamsher Singh Kanwar

Received 23 May 2021, Accepted 18 Dec 2021, Published online: 10 Jan 2022

Download citation https://doi.org/10.1080/07391102.2021.2024882 Check for updates

Full Article Figures & data References Citations Metrics Reprints & Permissions Get access

Abstract

Oxalate decarboxylase (OxDC) is a Mn-dependent hexameric enzyme that is highly important in management of calcium oxalate mediated nephrolithiasis. The present study reported the production and purification of OxDC from *Pseudomonas* sp. OXDC12 up to 45.3-fold with an overall yield of 7%. The

About this journal

Electronic ISSN
2190-5738

Abstracted and indexed in

AGRICOLA
BIOSIS
Baidu
Biological Abstracts
CAB Abstracts
CLOCKSS
CNKI
CNPIEC
Dimensions
EBSCO Academic Search
EBSCO Discovery Service
EMBASE
EMBiology
Google Scholar
INIS Atomindex
Japanese Science and Technology Agency (JST)
Journal Citation Reports/Science Edition
Naver
Norwegian Register for Scientific Journals and Series
OCLC WorldCat Discovery Service
Portico
ProQuest-ExLibris Primo
ProQuest-ExLibris Summon
PubMedCentral
Reaxys
SCImago
SCOPUS
Science Citation Index Expanded (SCIE)
Semantic Scholar
TD Net Discovery Service
UGC-CARE List (India)
WTI AG
Wanfang

Dr. Shruti Gupta (SCOPUS and UGC- CARE List)

4. Dr. Kiran Thakur - Microbiology Deparment
Journal of Research: 3 Biotech
Year- 2021
ISSN 2190-572X
Link to website of the Journal- https://www.springer.com/journal/13205
Link to article/paper/abstract of the article-https://link.springer.com/article/10.1007/s13205-021-02953-y

3 Biotech (2021) 11:427
https://doi.org/10.1007/s13205-021-02953-y

REVIEW ARTICLE

Nanocarriers-based immobilization of enzymes for industrial application

Kiran Thakur[1] · Chandrika Attri[1] · Amit Seth[2]

Received: 6 May 2021 / Accepted: 28 July 2021

Abstract
Nanocarriers-based immobilization strategies are a novel concept in the enhancement of enzyme stability, shelf life and efficiency. A wide range of natural and artificial supports have been assessed for their efficacy in enzyme immobilization. Nanomaterials epitomize unique and fascinating matrices for enzyme immobilization. These structures include carbon nanotubes, superparamagnetic nanoparticles and nanofibers. These nano-based supports offer stable attachment of enzymes, thus ensuring their reusability in diverse industrial applications. This review attempts to encompass recent developments in the critical role played by nanotechnology towards the improvement of the practical applicability of microbial enzymes. Nanoparticles are increasingly being used in combination with various polymers to facilitate enzyme immobilization. These endeavors are proving to be conducive for enzyme-catalyzed industrial operations. In recent years the diversity of nanomaterials has grown tremendously, thus offering endless opportunities in the form of novel combinations for various biotransformation experimentations. These nanocarriers are advantageous for both free enzymes and whole-cell immobilization, thus demonstrating to be relatively effective in several fermentation procedures.

Keywords Enzyme immobilization · Nanocarriers · Nanoparticles · Carbon nanotubes · Nanofibers

Introduction

Enzymes are universal catalysts that promote the transformation of chemical species in living systems (Singh et al. 2020). Enzyme immobilization is a method used for increasing the efficiency of enzymes and the possibility of enzymes recovery (Mardani et al. 2018). Enzyme immobilization facilitates prolonged activity, improves stability, and ensures the enzyme's reusability (Tan et al. 2016). Immobilized enzymes are active over a wide pH and temperature range, have appreciable strength and simplified product down streaming (Bilal and Asgher 2015). The immobilization of enzymes is critically valuable for both industrial and biological processes. There have been numerous approaches to improving enzyme stability, substrate specificity or their successful utilization in industrial processes, such as immobilization, modification, protein designing and medium engineering (Ashok and Kumar 2017; Singh et al. 2020; Chauhan et al. 2020; Pratush et al. 2017). Industrial enzymes from microorganisms have been identified, characterized and applied for diverse industrial operations (Kumar et al. 2015; Pratush et al. 2013; Bhatia et al. 2018; Singh et al. 2019). Both free cells and immobilized cells have been utilized to manufacture commodity chemicals through biotransformation (Raj et al. 2007a, b; Pratush et al. 2010, 2011, 2012; Jyoti et al. 2017). These microbial enzymes are mesophilic and thermophilic (Kumari et al. 2016; Chauhan et al. 2015). Enzymes are expected to be used in a variety of industrial applications due to their catalytic properties. For example, β-amylase, lipase, β-galactosidase, penicillin G amidase, and other enzymes are used in the commercial production of maltose, biodiesel, lactosucrose semi-synthetic penicillin, and cephalosporin antibiotics, etc. Their objectives, however, are frequently hampered by operational consistency and reusability. Enzymes have been utilized in industrial manufacture for a long time once they were immobilized (Ashok and Kumar 2019). Enzyme immobilization addresses the attachment or consolidation of enzyme particles onto support structures. Two critical aspects of enzyme

Amit Seth
amitsethshimla@gmail.com; amitseth@manipuruniv.ac.in

1 Faculty of Applied Sciences and Biotechnology, Shoolini University, Bajhol, Solan, Himachal Pradesh, India
2 Department of Life Sciences (Botany), Manipur University, Imphal, India

Published online: 07 September 2021

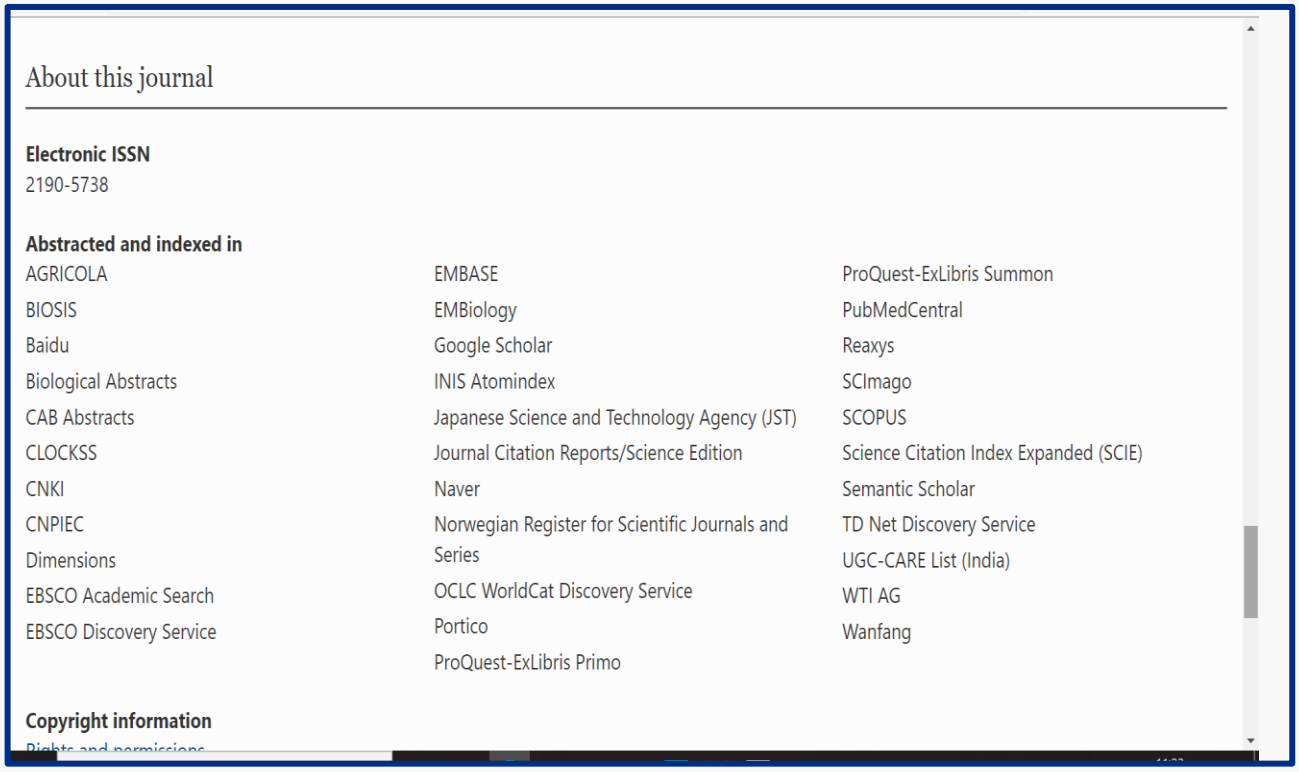
immobilization are using a desirable cross-linker and stable protein attachment for enzyme encapsulation (Dutta et al. 2013; Bilal and Asgher 2015) (Fig. 1). Besides, this carbodiimide coupling technique (Lasmi et al. 2018) and glutaraldehyde (GA) cross-linking method (Liu et al. 2018) are typical for immobilization of enzymes onto nanocarriers.

Various inorganic and organic materials made up of silica, carbon, gold and other metals have been used as support matrices for enzyme immobilization (Escuin et al. 2017; Hajar and Vahabzadeh 2016; Liu et al. 2016; Ulu et al. 2016; Shrestha et al. 2016).

into enzyme carriers is easier to maintain and ensure stable enzyme attachment. The choice of matrix materials depends upon many factors, including the required size of nanoparticles, surface characteristics, degree of biocompatibility, biodegradability, and toxicity (Jyoti et al. 2017).

Based on element order, nanocarriers are predominately grouped as carbonaceous and metallic nanocarriers discussed in detail in the subsequent sections.

Dr. Kiran Thakur



About this journal

Electronic ISSN
2190-5738

Abstracted and indexed in

AGRICOLA	EMBASE	ProQuest-ExLibris Summon
BIOSIS	EMBiology	PubMedCentral
Baidu	Google Scholar	Reaxys
Biological Abstracts	INIS Atomindex	SCImago
CAB Abstracts	Japanese Science and Technology Agency (JST)	SCOPUS
CLOCKSS	Journal Citation Reports/Science Edition	Science Citation Index Expanded (SCIE)
CNKI	Naver	Semantic Scholar
CNPIEC	Norwegian Register for Scientific Journals and Series	TD Net Discovery Service
Dimensions	OCLC WorldCat Discovery Service	UGC-CARE List (India)
EBSCO Academic Search	Portico	WTI AG
EBSCO Discovery Service	ProQuest-ExLibris Primo	Wanfang

Copyright information

Dr. Kiran Thakur (SCOPUS and UGC-CARE List)

SPRINGER LINK

Log in

Find a journal | Publish with us | Search | Cart

Home > 3 Biotech > Article

Review Article | Published: 07 September 2021

Nanocarriers-based immobilization of enzymes for industrial application

Kiran Thakur, Chandrika Attri & Amit Seth

3 Biotech **11**, Article number: 427 (2021) | Cite this article

1122 Accesses | **8** Citations | Metrics

Abstract

Nanocarriers-based immobilization strategies are a novel concept in the enhancement of enzyme stability, shelf life and efficiency. A wide range of natural and artificial supports have

Access via your institution →

Part of a collection:

Special Issue: Novel natural and engineered enzymes: Technology and Applications

Access options

Buy article PDF

39,95 €

Price includes VAT (India)

Dr. Kiran Thakur

5. Dr. Kiran Thakur - Microbiology Deparment
   Journal of Research: BioNanoscience
   Year-2021
   ISSN 2191-1649 (E); 2191-1630 (P)
   Link to website of the Journal- https://www.springer.com/journal/12668
   Link to article/paper/abstract of the article-
   https://link.springer.com/article/10.1007/s12668-022-00969-z

BioNanoScience
https://doi.org/10.1007/s12668-022-00969-z

Himalayan Fern *Cheilanthes bicolor* Mediated Fabrication and Characterization of Iron Nanoparticles with Antimicrobial Potential

Amit Seth[1] - Ena Devi[2] - Kiran Thakur[2] - Chandrika Attri[2] - Vijay Singh[3] - Ayesha Bhandari[3] - Mahavir Singh[3] - M. K. Seth[4]

Accepted: 18 March 2022

Abstract
The green synthesis of nano-powders assumes great significance because of its high applicability and synthesis under ambient conditions via an amalgamation of plant-derived extracts. The formulation of small-sized iron particles using relatively underexplored curative fern *Cheilanthes bicolor* extract was investigated. The derivation of fern components was worked out, and anti-microbial efficacy was determined. This fern is rich in numerous phytochemicals like phenol, tannins, and reducing sugars which contributed in the generation of nano-iron particles. The effects of several decisive factors led to the optimal synthesis of the desired particles. The size, magnetic behavior, and physical aspects were elucidated by methods like UV–VIS spectrophotometry, Fourier-transform infrared spectroscopy (FTIR), field emission scanning electron microscopy (FESEM), dynamic light scattering (DLS), X-ray diffraction (XRD), and vibrating sample magnetometer (VSM). The findings revealed that the nanoparticles were amorphous in shape with an average size of 40–60 nm. These particles were tested against microorganisms and ultimately revealed their potency against diverse microflora. These iron nanoparticles demonstrated anti-microbial efficacy and displayed a MIC value of 6.25 µg/ml and 3.125 µg/ml against clinal pathogens *Staphylococcus aureus* and *Escherichia coli*, respectively.

Keywords Green nanotechnology · Iron nanoparticles · Ferns · *Cheilanthes bicolor* · Antimicrobial

1 Introduction

In recent times, the synthesis and formulation of nanoparticles have opened up new vistas of scientific and technological advancements in nanotechnology and its related research. The green synthesis approach helps in avoiding the use of toxic matabolites in nanoparticle synthesis. In recent years, a variety of metallic nanoparticles have been generated by adopting a plant extract mediated strategy which include copper [1], zinc [2], gold [3], and silver [4]. Over the years, iron nanoparticles (Fe NPs) have attained tremendous scientific usage with broad applications in different sciences. The main goal of nanotechnology research is to fabricate novel materials or to introduce variations in existing materials. Iron oxide has been one of the extensively investigated transition metal oxides because of its significant variable oxidation states, crystalline properties, and magnetic character [5, 6].

Fe NPs are finding increasing application in magnetic targeting [7], cancer therapy [8], stem cell sorting and manipulation [9], gene therapy [10], food-related applications [11], bioprocess intensification [12], tissue repair engineering and bioseparation [13]. In addition, iron nanoparticles have been used for groundwater remediation of heavy metals and wastewater treatment of organic or inorganic contaminations due to the higher intrinsic reactivity of their surface sites [14–16]. Iron also plays a crucial role in activating and stimulating various microbial enzymes [17–19]. The large

Amit Seth
amitsethshimla@gmail.com

[1] Department of Life Sciences (Botany), Manipur University, Imphal, India
[2] Faculty of Applied Sciences and Biotechnology, Shoolini University, Bajhol, Solan, India
[3] Department of Physics, Himachal Pradesh University, Summer Hill, Shimla, India
[4] Department of Biosciences, Himachal Pradesh University, Summer Hill, Shimla, India

Published online: 26 March 2022

surface area to volume ratio of these minute particles makes them highly potent against clinically significant pathogenic microorganisms.

Many diverse biological systems, both prokaryotic and eukaryotic, have displayed the capacity to cause the reduction of metallic ions into nanoparticles. This technique of nanoparticle generation is now referred to as green synthesis [20]. Plant extract is more feasible among all biological systems due to the certain typical benefits like non-requirement of intricate and costly steps of microorganism culture and storage, benign and speedy synthesis and amenable scale-up of industrial production. Green synthesis of iron oxide nanoparticles is gaining much precedence [21–23].

Metal NPs can be synthesized by both conventional as well as unconventional methods. Different methods such as chemical reactions, photochemical reactions, thermal decomposition, electrochemical routes, and sonication are commonly used to synthesize a wide array of metallic NPs [24, 25]

Plants and microorganisms are increasingly being applied in the green synthesis of nanoparticles as a practical approach due to the critical role played by the biotic components in such practices. Plants, in particular, are enriched with diverse biological compounds possessing critical antioxidative and antimicrobial properties. Plant constituents possessing antioxidant potentials such as phenols, flavonoids, tannins, and vitamins have been used to synthesize NPs [26]. Even among plants, herbs and medicinal plants are attracting greater attention, whereas the lower members of the plant kingdom are being

etc., were of analytical grade and purchased from Himedia Lab Pvt. Ltd., India.

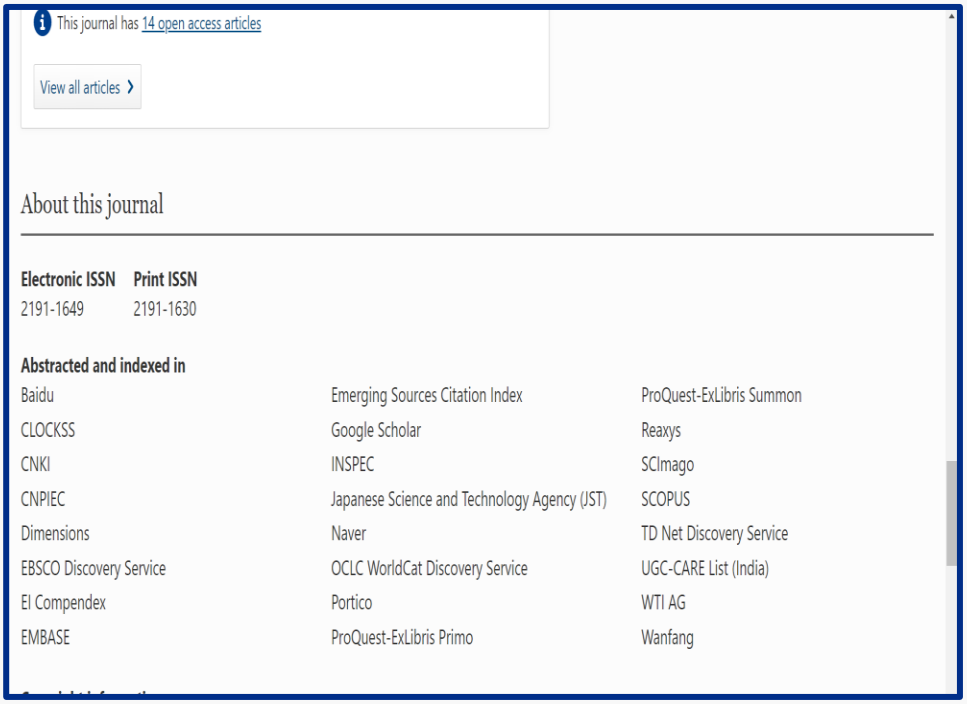
2.2 Collection of Samples

Cheilanthes genus comprises approximately 180 species. Most of them inhabit rocky surfaces. They have a wide ubiquitous distribution. The leaves are enclosed in trichomes. The terminal ends tend to bear the spore-containing structures called sporangia. The leaf margins twist to provide extra protection to these sporangia.

In February, leaves of medicinal fern (*Cheilanthes bicolor*) were collected from Bajhol forest Solan, Himachal Pradesh. The fern was identified and designated as *C. bicolor* by fern taxonomist Professor Mukesh Kumar Seth (Department of Biosciences, Himachal Pradesh University, Shimla).

2.3 Preparation of Fern Extracts

Ten grams of fresh leaves were thoroughly washed with distilled water and cut into small pieces, then heated at 40 °C in a 250-ml glass beaker along with 100 ml of triple distilled water for 15 min. The heat treatment caused a change of color of the aqueous solution from watery to dark green. Then, cooling was undertaken at room temperature. The aqueous extract of *Cheilanthes bicolor* was separated by filtration with Whatman No. 1 filter paper and stored at 4 °C for further experiments [32].



This journal has 14 open access articles

View all articles ›

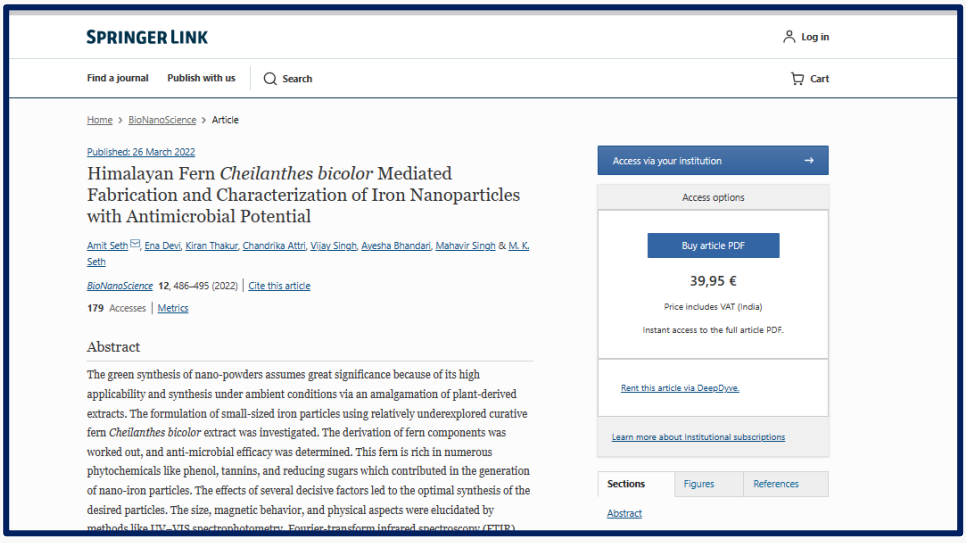
About this journal

Electronic ISSN 2191-1649 **Print ISSN** 2191-1630

Abstracted and indexed in

Baidu	Emerging Sources Citation Index	ProQuest-ExLibris Summon
CLOCKSS	Google Scholar	Reaxys
CNKI	INSPEC	SCImago
CNPIEC	Japanese Science and Technology Agency (JST)	SCOPUS
Dimensions	Naver	TD Net Discovery Service
EBSCO Discovery Service	OCLC WorldCat Discovery Service	UGC-CARE List (India)
EI Compendex	Portico	WTI AG
EMBASE	ProQuest-ExLibris Primo	Wanfang

Dr. Kiran Thakur (SCOPUS and UGC-CARE List)



SPRINGER LINK

Log in

Find a journal Publish with us Search Cart

Home › BioNanoScience › Article

Published: 26 March 2022

Himalayan Fern *Cheilanthes bicolor* Mediated Fabrication and Characterization of Iron Nanoparticles with Antimicrobial Potential

Amit Seth, Ena Devi, Kiran Thakur, Chandrika Attri, Vijay Singh, Ayesha Bhandari, Mahavir Singh & M. K. Seth

BioNanoScience 12, 486–495 (2022) | Cite this article

179 Accesses | Metrics

Abstract

The green synthesis of nano-powders assumes great significance because of its high applicability and synthesis under ambient conditions via an amalgamation of plant-derived extracts. The formulation of small-sized iron particles using relatively underexplored curative fern *Cheilanthes bicolor* extract was investigated. The derivation of fern components was worked out, and anti-microbial efficacy was determined. This fern is rich in numerous phytochemicals like phenol, tannins, and reducing sugars which contributed in the generation of nano-iron particles. The effects of several decisive factors led to the optimal synthesis of the desired particles. The size, magnetic behavior, and physical aspects were elucidated by methods like UV–VIS spectrophotometry, Fourier-transform infrared spectroscopy (FTIR)

Access via your institution →

Access options

Buy article PDF

39,95 €

Price includes VAT (India)

Instant access to the full article PDF.

Rent this article via DeepDyve.

Learn more about Institutional subscriptions

Sections Figures References

Abstract

Dr. Kiran Thakur

6. Mr. Nishant- Chemistry Deparment
   Journal of Research: Phytochemistry Reviews
   Year-2021
   ISSN 1568-7767 (P); ISSN: 1572-980X
   Link to website of the Journal- https://www.springer.com/journal/11101
   Link to article/paper/abstract of the article- A review on the genus Populus: a potential source of biologically active compounds | SpringerLink

Phytochem Rev
https://doi.org/10.1007/s11101-021-09772-2

A review on the genus *Populus*: a potential source of biologically active compounds

Ishita Guleria · Amita Kumari · Marie-Aleth Lacaille-Dubois · Nishant · Vikas Kumar · Adesh K. Saini · Jyoti Dhatwalia · Sohan Lal

Received: 22 December 2020 / Accepted: 27 July 2021

Abstract Genus *Populus* (Salicaceae family) consists of dioecious, deciduous, and commercially important forest tree species which are widely spread over the Northern Hemisphere. Traditionally, *Populus* species are used in the treatment of rheumatism, arthritis, lower back pains, urinary complaints, digestive, liver disorders, debility, anorexia, fevers, and also relieve the pain of menstrual cramps. This review compiles or discusses the general morphology, ethnomedicinal uses and phytochemistry of *Populus* species along with their pharmacological activities (antimicrobial, anti-cancer, anti-inflammatory, anti-obesity, anti-diarrhea, and anti-oxidants) covering the period of 1990–2020. The literature shows that the genus *Populus* is a rich source of phytocompounds especially phenolic compounds, flavonoids, and terpenoids, etc. A total of one hundred and fifty-nine constituents were isolated from different plant parts like leaves, bark, buds, and roots of *Populus* species. Only some of the phytocompounds were screened for their biological activities and the rest of them are unexplored. Through this review, the authors hope to attract the attention of natural product researchers throughout the world to focus on the unexplored species of *Populus* and their unique phytocompounds. This review underlines the potential of phytocompounds from *Populus* species that could lead to a new pathway in Pharma industries.

Keywords *Populus* · Ethno-medicinal uses · Phytochemistry · Pharmacological activities

I. Guleria · A. Kumari (✉) · J. Dhatwalia · S. Lal
School of Biological and Environmental Sciences, Faculty of Sciences, Shoolini University, Solan, Himachal Pradesh 173212, India
e-mail: amitabot@gmail.com

M.-A. Lacaille-Dubois (✉)
Department of Pharmacognosy, EA 4267, UFR of Health Sciences, University of Bourgogne Franche-Comté, 21079 Dijon Cedex, France
e-mail: Marie-Aleth.Lacaille-Dubois@u-bourgogne.fr

Nishant
Department of Chemistry, St. Beads College, Shimla, Himachal Pradesh, India

V. Kumar
Faculty of Biotechnology and Applied Sciences, Shoolini University, Solan, Himachal Pradesh 173212, India

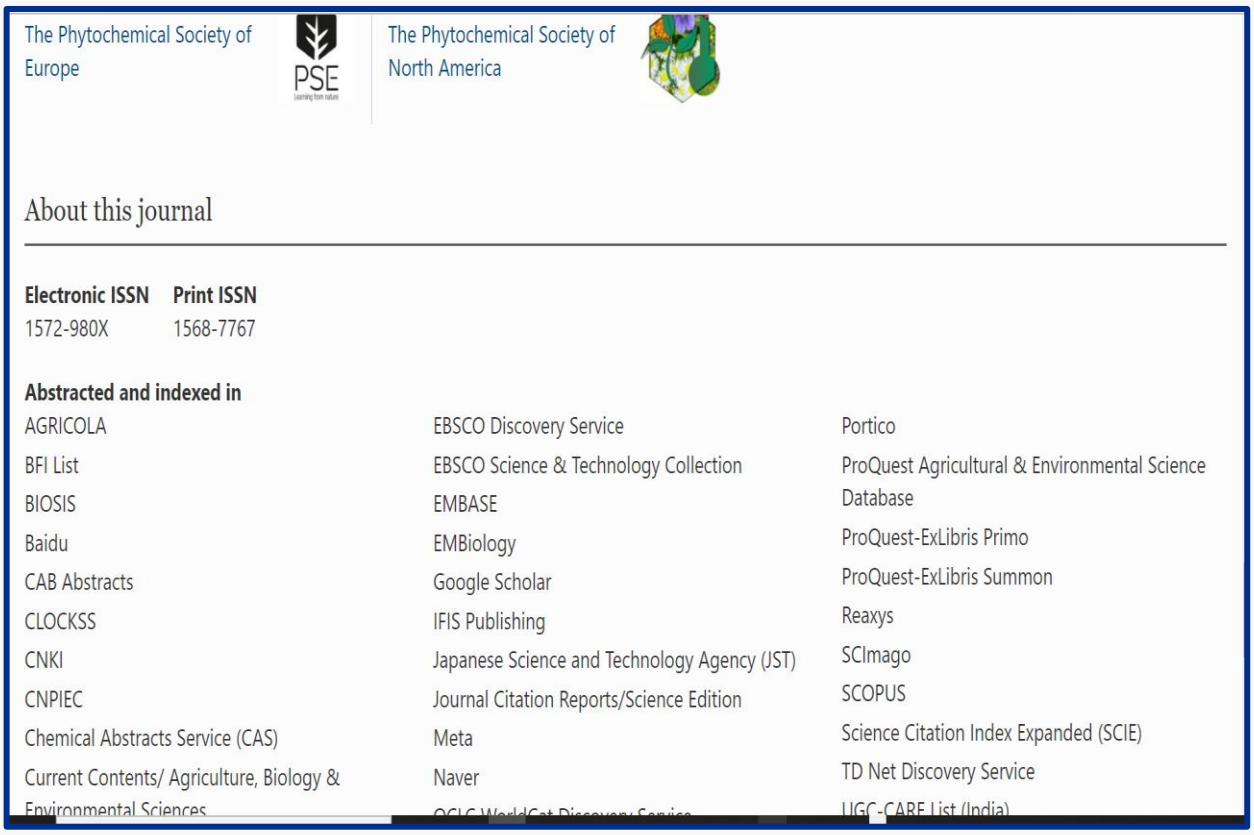
A. K. Saini
Department of Biotechnology MMEC, Central Research Laboratory MMIMSR, Maharishi Markandeshwar, Mullana, Haryana, India

Abbreviations

$AlCl_3$	Aluminum chloride
ABTS	2,2′-Azino-bis (3-ethylbenzothiazoline-6-sulfonic acid
NF-κB p65	Blunted LPS-triggered enhanced nuclear translocation
BDNF	Brain-derived neurotrophic factor

Published online: 12 September 2021

Mr. Nishant Kumar



The Phytochemical Society of Europe

The Phytochemical Society of North America

About this journal

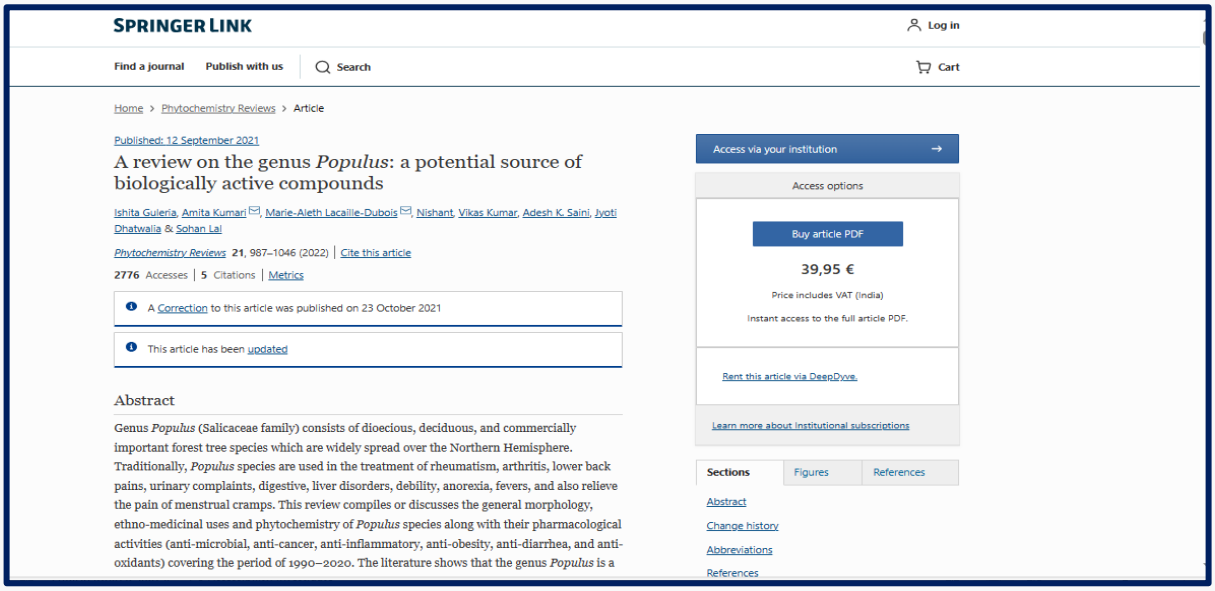
Electronic ISSN 1572-980X

Print ISSN 1568-7767

Abstracted and indexed in

AGRICOLA
BFI List
BIOSIS
Baidu
CAB Abstracts
CLOCKSS
CNKI
CNPIEC
Chemical Abstracts Service (CAS)
Current Contents/ Agriculture, Biology & Environmental Sciences
EBSCO Discovery Service
EBSCO Science & Technology Collection
EMBASE
EMBiology
Google Scholar
IFIS Publishing
Japanese Science and Technology Agency (JST)
Journal Citation Reports/Science Edition
Meta
Naver
Portico
ProQuest Agricultural & Environmental Science Database
ProQuest-ExLibris Primo
ProQuest-ExLibris Summon
Reaxys
SCImago
SCOPUS
Science Citation Index Expanded (SCIE)
TD Net Discovery Service
UGC-CARE List (India)

Mr. Nishant Kumar (SCOPUS and UGC-CARE List)



SPRINGER LINK

Log in

Find a journal | Publish with us | Search | Cart

Home > Phytochemistry Reviews > Article

Published: 12 September 2021

A review on the genus *Populus*: a potential source of biologically active compounds

Ishita Guleria, Amita Kumari, Marie-Aleth Lacaille-Dubois, Nishant, Vikas Kumar, Adesh K. Saini, Jyoti Dhatwalia & Sohan Lal

Phytochemistry Reviews **21**, 987–1046 (2022) | Cite this article

2776 Accesses | **5** Citations | Metrics

A Correction to this article was published on 23 October 2021

This article has been updated

Abstract

Genus *Populus* (Salicaceae family) consists of dioecious, deciduous, and commercially important forest tree species which are widely spread over the Northern Hemisphere. Traditionally, *Populus* species are used in the treatment of rheumatism, arthritis, lower back pains, urinary complaints, digestive, liver disorders, debility, anorexia, fevers, and also relieve the pain of menstrual cramps. This review compiles or discusses the general morphology, ethno-medicinal uses and phytochemistry of *Populus* species along with their pharmacological activities (anti-microbial, anti-cancer, anti-inflammatory, anti-obesity, anti-diarrhea, and anti-oxidants) covering the period of 1990–2020. The literature shows that the genus *Populus* is a

Access via your institution

Access options

Buy article PDF

39,95 €

Price includes VAT (India)

Instant access to the full article PDF.

Rent this article via DeepDyve.

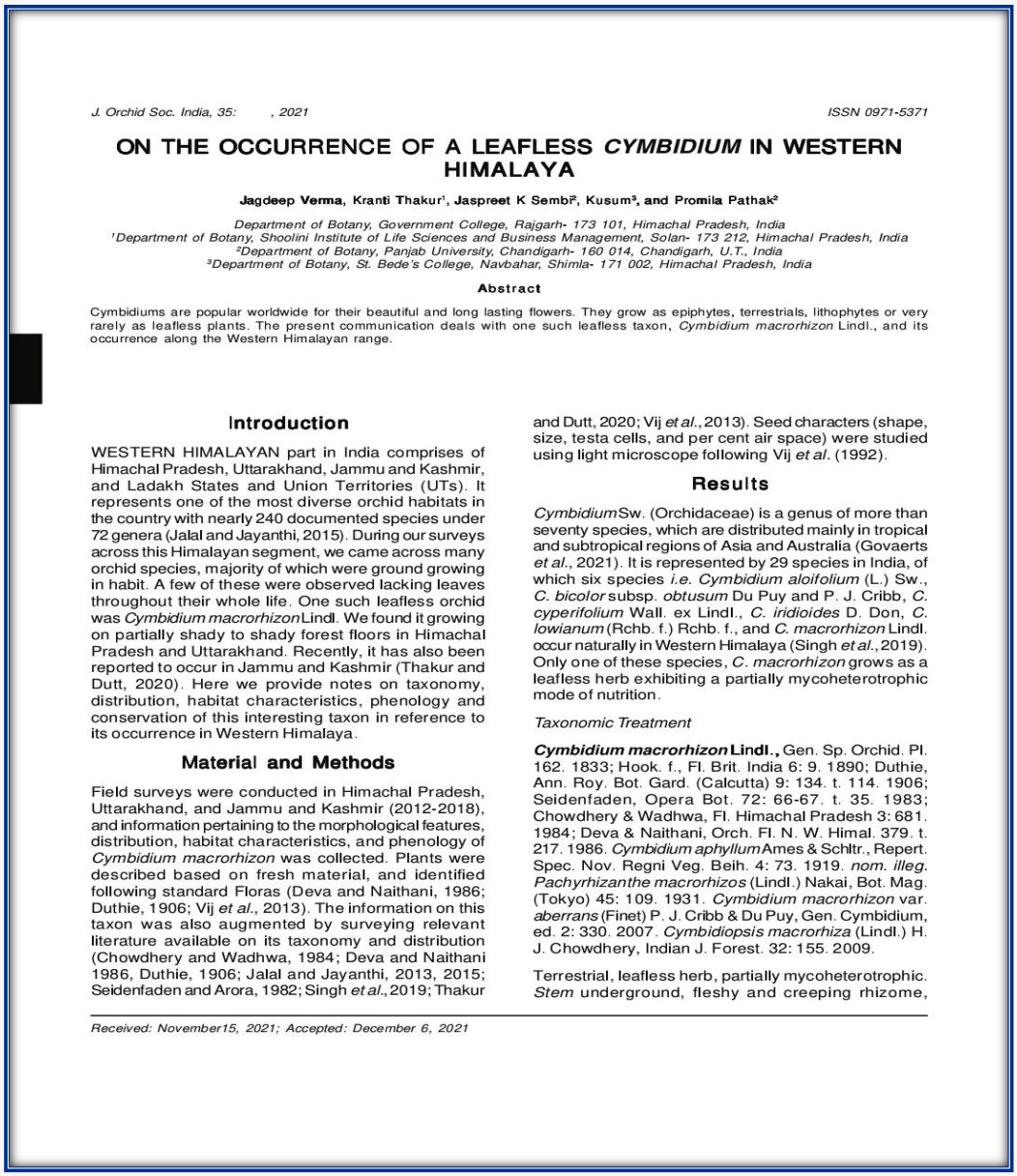
Learn more about institutional subscriptions

Sections | Figures | References

Abstract
Change history
Abbreviations
References

Mr. Nishant Kumar

7. Dr. Kusum- Botany Department
Journal of Research: J. Orchid Society of India
Year: 2021
ISSN: 0971-5371
Link to website of the Journal- https://www.orchidsocietyindia.org/journals
Link to article/paper/abstract of the article- https://www.orchidsocietyindia.org/wp-content/uploads/2022/05/Verma-etal_18_21-1.pdf
Journal ID - 101051054



J. Orchid Soc. India, 35: , 2021 *ISSN 0971-5371*

ON THE OCCURRENCE OF A LEAFLESS *CYMBIDIUM* IN WESTERN HIMALAYA

Jagdeep Verma, Kranti Thakur[1], Jaspreet K Sembi[2], Kusum[3], and Promila Pathak[2]

Department of Botany, Government College, Rajgarh- 173 101, Himachal Pradesh, India
[1]Department of Botany, Shoolini Institute of Life Sciences and Business Management, Solan- 173 212, Himachal Pradesh, India
[2]Department of Botany, Panjab University, Chandigarh- 160 014, Chandigarh, U.T., India
[3]Department of Botany, St. Bede's College, Navbahar, Shimla- 171 002, Himachal Pradesh, India

Abstract

Cymbidiums are popular worldwide for their beautiful and long lasting flowers. They grow as epiphytes, terrestrials, lithophytes or very rarely as leafless plants. The present communication deals with one such leafless taxon, *Cymbidium macrorhizon* Lindl., and its occurrence along the Western Himalayan range.

Introduction

WESTERN HIMALAYAN part in India comprises of Himachal Pradesh, Uttarakhand, Jammu and Kashmir, and Ladakh States and Union Territories (UTs). It represents one of the most diverse orchid habitats in the country with nearly 240 documented species under 72 genera (Jalal and Jayanthi, 2015). During our surveys across this Himalayan segment, we came across many orchid species, majority of which were ground growing in habit. A few of these were observed lacking leaves throughout their whole life. One such leafless orchid was *Cymbidium macrorhizon* Lindl. We found it growing on partially shady to shady forest floors in Himachal Pradesh and Uttarakhand. Recently, it has also been reported to occur in Jammu and Kashmir (Thakur and Dutt, 2020). Here we provide notes on taxonomy, distribution, habitat characteristics, phenology and conservation of this interesting taxon in reference to its occurrence in Western Himalaya.

Material and Methods

Field surveys were conducted in Himachal Pradesh, Uttarakhand, and Jammu and Kashmir (2012-2018), and information pertaining to the morphological features, distribution, habitat characteristics, and phenology of *Cymbidium macrorhizon* was collected. Plants were described based on fresh material, and identified following standard Floras (Deva and Naithani, 1986; Duthie, 1906; Vij *et al*., 2013). The information on this taxon was also augmented by surveying relevant literature available on its taxonomy and distribution (Chowdhery and Wadhwa, 1984; Deva and Naithani 1986, Duthie, 1906; Jalal and Jayanthi, 2013, 2015; Seidenfaden and Arora, 1982; Singh *et al*., 2019; Thakur and Dutt, 2020; Vij *et al*., 2013). Seed characters (shape, size, testa cells, and per cent air space) were studied using light microscope following Vij *et al*. (1992).

Results

Cymbidium Sw. (Orchidaceae) is a genus of more than seventy species, which are distributed mainly in tropical and subtropical regions of Asia and Australia (Govaerts *et al*., 2021). It is represented by 29 species in India, of which six species *i.e. Cymbidium aloifolium* (L.) Sw., *C. bicolor* subsp. *obtusum* Du Puy and P. J. Cribb, *C. cyperifolium* Wall. ex Lindl., *C. iridioides* D. Don, *C. lowianum* (Rchb. f.) Rchb. f., and *C. macrorhizon* Lindl. occur naturally in Western Himalaya (Singh *et al*., 2019). Only one of these species, *C. macrorhizon* grows as a leafless herb exhibiting a partially mycoheterotrophic mode of nutrition.

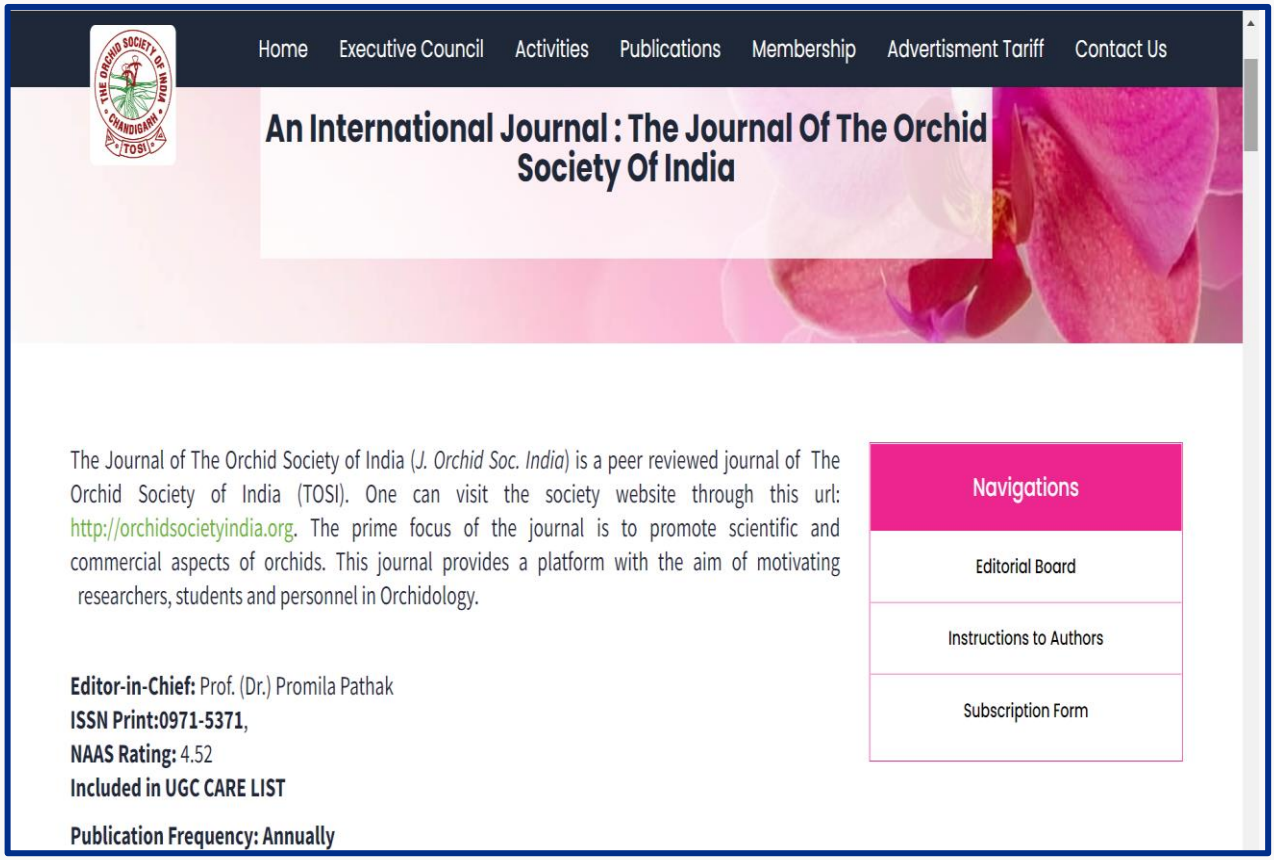
Taxonomic Treatment

***Cymbidium macrorhizon* Lindl.,** Gen. Sp. Orchid. Pl. 162. 1833; Hook. f., Fl. Brit. India 6: 9. 1890; Duthie, Ann. Roy. Bot. Gard. (Calcutta) 9: 134. t. 114. 1906; Seidenfaden, Opera Bot. 72: 66-67. t. 35. 1983; Chowdhery & Wadhwa, Fl. Himachal Pradesh 3: 681. 1984; Deva & Naithani, Orch. Fl. N. W. Himal. 379. t. 217. 1986. *Cymbidium aphyllum* Ames & Schltr., Repert. Spec. Nov. Regni Veg. Beih. 4: 73. 1919. *nom. illeg. Pachyrhizanthe macrorhizos* (Lindl.) Nakai, Bot. Mag. (Tokyo) 45: 109. 1931. *Cymbidium macrorhizon* var. *aberrans* (Finet) P. J. Cribb & Du Puy, Gen. Cymbidium, ed. 2: 330. 2007. *Cymbidiopsis macrorhiza* (Lindl.) H. J. Chowdhery, Indian J. Forest. 32: 155. 2009.

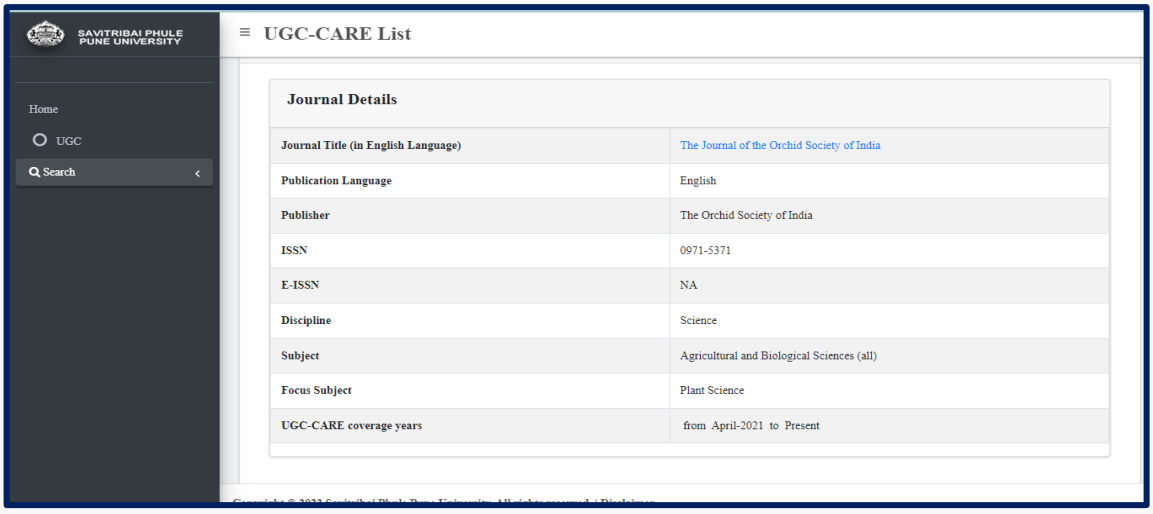
Terrestrial, leafless herb, partially mycoheterotrophic. *Stem* underground, fleshy and creeping rhizome,

Received: November15, 2021; Accepted: December 6, 2021

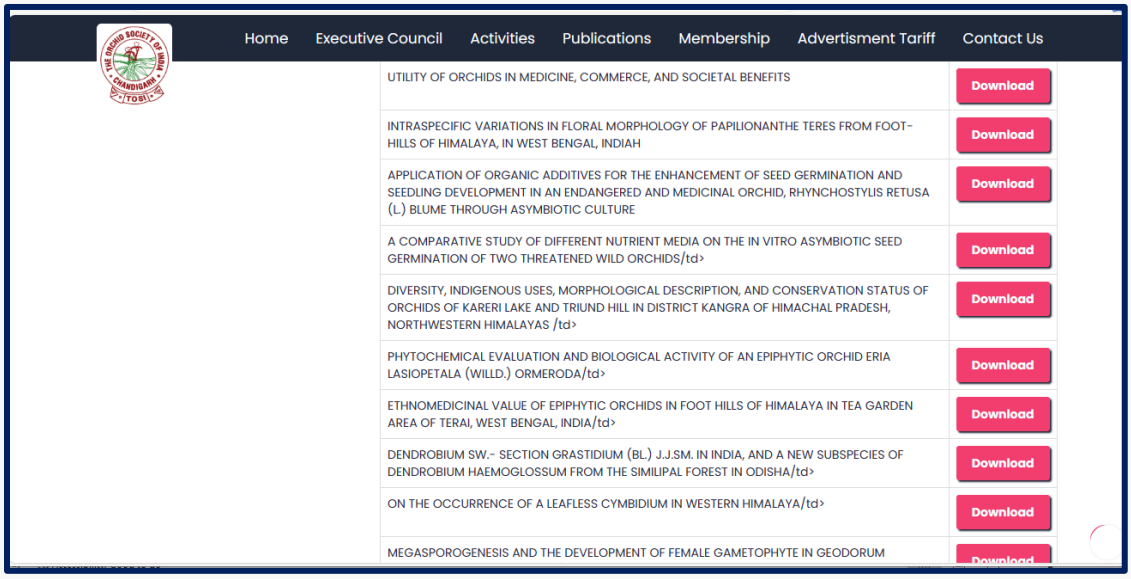
Dr. Kusum



Dr. Kusum (UGC-CARE List)



Dr. Kusum (UGC-CARE List)


Home
Executive Council
Activities
Publications
Membership
Advertisment Tariff
Contact Us
UTILITY OF ORCHIDS IN MEDICINE, COMMERCE, AND SOCIETAL BENEFITS
Download
INTRASPECIFIC VARIATIONS IN FLORAL MORPHOLOGY OF PAPILIONANTHE TERES FROM FOOT-HILLS OF HIMALAYA, IN WEST BENGAL, INDIAH
Download
APPLICATION OF ORGANIC ADDITIVES FOR THE ENHANCEMENT OF SEED GERMINATION AND SEEDLING DEVELOPMENT IN AN ENDANGERED AND MEDICINAL ORCHID, RHYNCHOSTYLIS RETUSA (L.) BLUME THROUGH ASYMBIOTIC CULTURE
Download
A COMPARATIVE STUDY OF DIFFERENT NUTRIENT MEDIA ON THE IN VITRO ASYMBIOTIC SEED GERMINATION OF TWO THREATENED WILD ORCHIDS/td>
Download
DIVERSITY, INDIGENOUS USES, MORPHOLOGICAL DESCRIPTION, AND CONSERVATION STATUS OF ORCHIDS OF KARERI LAKE AND TRIUND HILL IN DISTRICT KANGRA OF HIMACHAL PRADESH, NORTHWESTERN HIMALAYAS /td>
Download
PHYTOCHEMICAL EVALUATION AND BIOLOGICAL ACTIVITY OF AN EPIPHYTIC ORCHID ERIA LASIOPETALA (WILLD.) ORMERODA/td>
Download
ETHNOMEDICINAL VALUE OF EPIPHYTIC ORCHIDS IN FOOT HILLS OF HIMALAYA IN TEA GARDEN AREA OF TERAI, WEST BENGAL, INDIA/td>
Download
DENDROBIUM SW.- SECTION GRASTIDIUM (BL.) J.J.SM. IN INDIA, AND A NEW SUBSPECIES OF DENDROBIUM HAEMOGLOSSUM FROM THE SIMILIPAL FOREST IN ODISHA/td>
Download
ON THE OCCURRENCE OF A LEAFLESS CYMBIDIUM IN WESTERN HIMALAYA/td>
Download
MEGASPOROGENESIS AND THE DEVELOPMENT OF FEMALE GAMETOPHYTE IN GEODORUM
Download

Dr. Kusum

8. Dr. Ashwani Kumar- Physical Education Deparment
   Journal of Research: International Journal of Physical Education, Sports and Health
   Year- 2022
   ISSN: 2394-1685 (P); ISSN: 2394-1693 (E)
   Link to website of the Journal- www.kheljournal.com
   Link to article/paper/abstract of the article-
   https://www.kheljournal.com/archives/2022/vol9issue1/PartG/9-1-26-882.pdf

Dr. Ashwani Kumar

International Journal of Physical Education, Sports and Health 2022; 9(1): 407-411

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 5.38
IJPESH 2022; 9(1): 407-411

www.kheljournal.com
Received: 09-11-2021
Accepted: 12-12-2021

Dr. Ashwani Kumar
Principal, The Enlightened College of Physical Education, Jhunir, Mansa, Punjab, India

Mamta Singh Rathour
Assistant Professor, Department of Phy. Edu. RMVP, Gonda, Uttar Pradesh, India

Corresponding Author:
Dr. Ashwani Kumar
Principal, The Enlightened College of Physical Education, Jhunir, Mansa, Punjab, India

Attitude towards physical education and sports of higher secondary school students of Maharashtra state

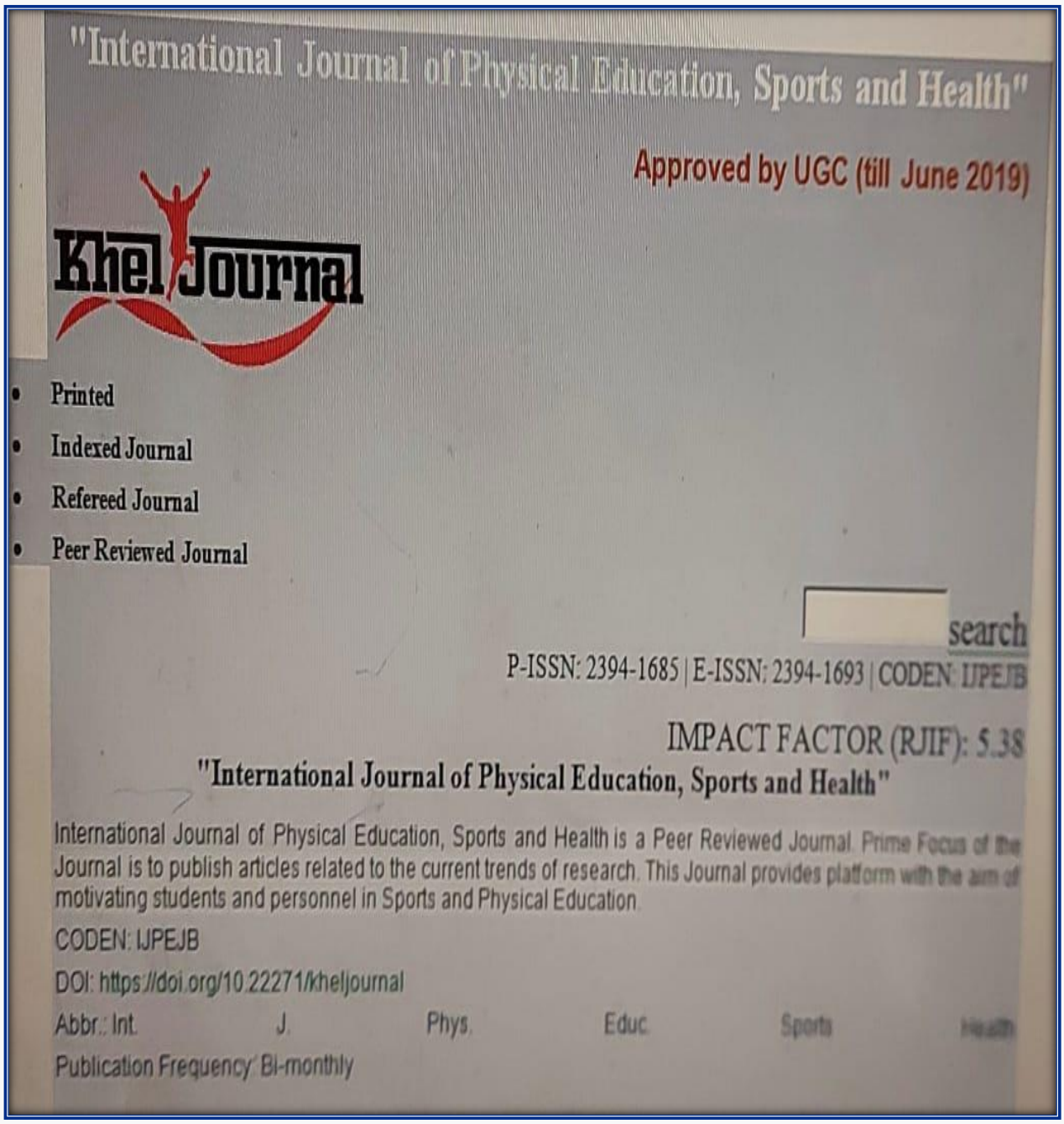
Dr. Ashwani Kumar and Mamta Singh Rathour

Abstract
The present study was confined to the Attitude towards Physical Education and Sports of Higher Secondary School Students of Maharashtra State. The Students ranging between 15-18 years were selected for the study. The Data was collected from the Higher Secondary Student's studying in the Higher Secondary Schools of Maharashtra. Age of the student's was considered as per age-record available in the school. The data of the present study was collected from 700 students selected at stratified random sampling basis from 70 higher secondary school's (10 students from each school) of 35 districts of Maharashtra, selecting two schools from each district at random basis. After analysis the study indicates that, the students belonging to good and poor categories do not differ significantly in their attitude towards physical education and sports. Though the difference in means of the two groups is in favor of students belonging to average category, yet it can be said that observed difference could have arisen due to chance errors. There is no difference in sample means.

Keywords: Attitude, physical education, sports & higher secondary students

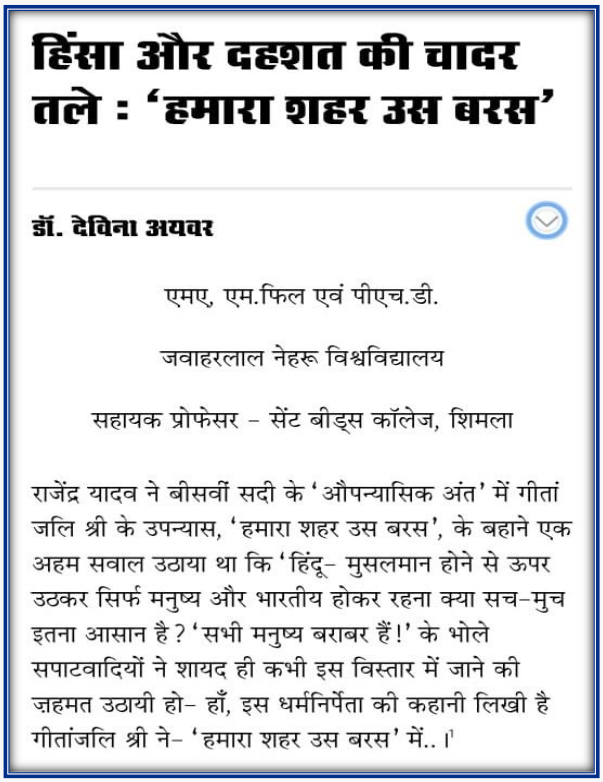
Introduction
Attitude- A settled mode of thinking. A 'mental set' held by an individual who affects the ways that, the person responds to events and organizes their cognitions. Attitudes are commonly held to have three essential components or dimensions: a cognitive dimension, involving the beliefs and rationalizations which explain the holding of the attitude: an affective dimension involving the emotional aspects of attitude, such as likes dislikes, feelings of distaste or affection, and a cognitive, or behavioral dimension which involves the extent to which the individual is prepared to act on the attitude that they hold. Attitude is an important psychological factor affecting behavior. According to Leuba (1961) attitudes are behavioral predispositions, which exert an enduring controlling influence over behavior. Luycock and Munro (1996) are of the viewpoints that are emotional, intellectual and motivational components of attitudes. Attitude may be considered as a state of readiness to activity (a kind of pre-motivation stage) and also as a manifested social relation showing itself in certain acts of behavior. It indicates an emotionally and cognitively structured relation towards things; beings; activities and other phenomena of reality. In the field of physical education and sports no athlete can win the condition of an environment. Right attitude and interests are as important to education as a steady steering car. It is important to know how children develop physically because physical development influences children's behavior directly by determining what they can do directly by influencing their attitude towards self and others. Attitudes are the dynamics of human action. Unless people have favorable attitudes and interests towards what they set out to learn, they couldn't drive full benefit out of which is being taught. The development of healthy, favorable attitudes is itself a phase of education. Premlata & Bhatia (2005) studied the attitude of parents towards Physical Education and Sports participation. The major objective of study is to find out the attitude of parents towards physical education and sports participation of their children. Attitude scale was used for the study. The data was collected through a questionnaire containing 50 questions to the parents of 60 girl's students of different colleges of Kurukshetra District of Haryana. The girl's were asked to bring the duly filled questionnaires from their parents. So the 60 responses were collected.

Dr. Ashwani Kumar



Dr. Ashwani Kumar (UGC-CARE List)

9. Dr. Devina Auchoybur : Hindi Department
Journal of research-Jyotirveda Prasthanam, 10(6),
Year- 2022
ISSN 2278-0327
Link to website of the Journal- http://sjifactor.com/passport.php?id=19940
Print Version Only



हिंसा और दहशत की चादर तले : 'हमारा शहर उस बरस'

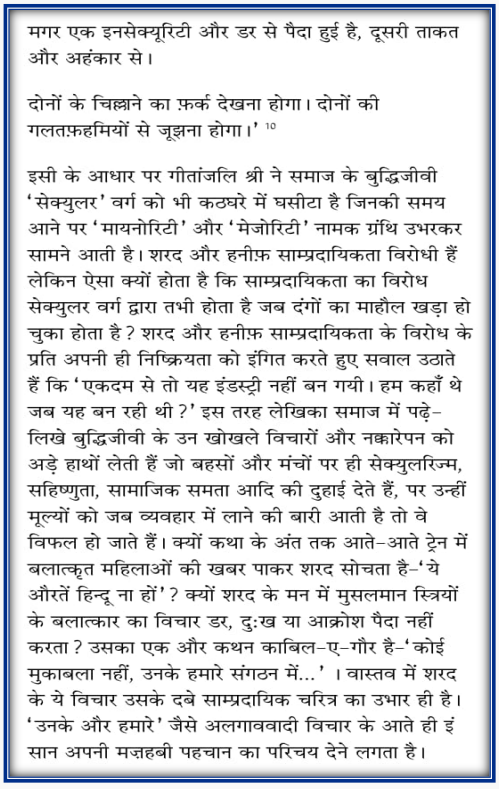
डॉ. देविना अयवर

एमए, एम.फिल एवं पीएच.डी.

जवाहरलाल नेहरू विश्वविद्यालय

सहायक प्रोफेसर – सेंट बीड्स कॉलेज, शिमला

राजेंद्र यादव ने बीसवीं सदी के 'औपन्यासिक अंत' में गीतांजलि श्री के उपन्यास, 'हमारा शहर उस बरस', के बहाने एक अहम सवाल उठाया था कि 'हिंदू- मुसलमान होने से ऊपर उठकर सिर्फ मनुष्य और भारतीय होकर रहना क्या सच-मुच इतना आसान है? 'सभी मनुष्य बराबर हैं!' के भोले सपाटवादियों ने शायद ही कभी इस विस्तार में जाने की ज़हमत उठायी हो- हाँ, इस धर्मनिर्पेता की कहानी लिखी है गीतांजलि श्री ने- 'हमारा शहर उस बरस' में..।[1]

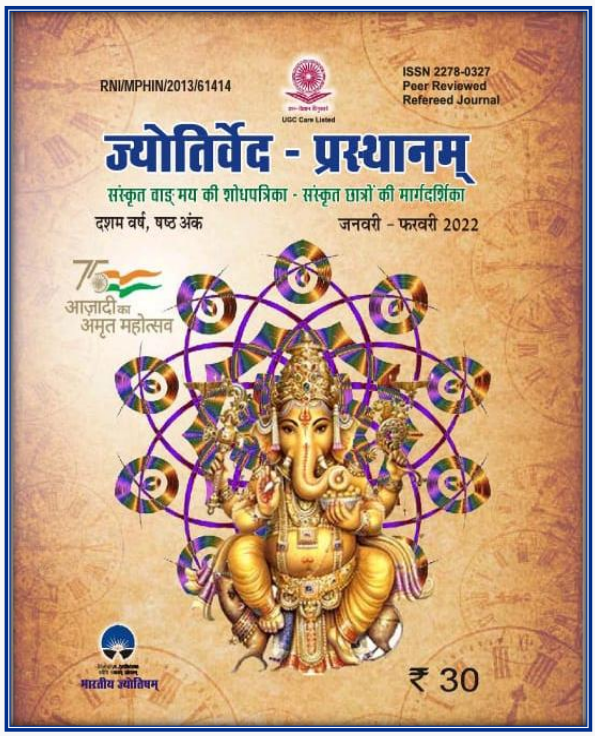


मगर एक इनसेक्यूरिटी और डर से पैदा हुई है, दूसरी ताकत और अहंकार से।

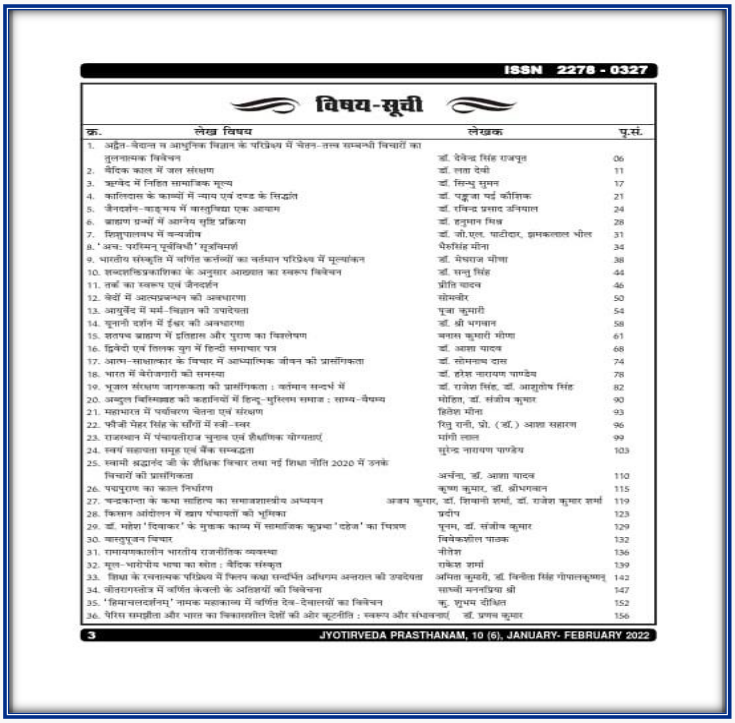
दोनों के चिल्लाने का फ़र्क देखना होगा। दोनों की गलतफ़हमियों से जूझना होगा।' [10]

इसी के आधार पर गीतांजलि श्री ने समाज के बुद्धिजीवी 'सेक्युलर' वर्ग को भी कठघरे में घसीटा है जिनकी समय आने पर 'मायनोरिटी' और 'मेजोरिटी' नामक ग्रंथि उभरकर सामने आती है। शरद और हनीफ़ साम्प्रदायिकता विरोधी हैं लेकिन ऐसा क्यों होता है कि साम्प्रदायिकता का विरोध सेक्युलर वर्ग द्वारा तभी होता है जब दंगों का माहौल खड़ा हो चुका होता है? शरद और हनीफ़ साम्प्रदायिकता के विरोध के प्रति अपनी ही निष्क्रियता को इंगित करते हुए सवाल उठाते हैं कि 'एकदम से तो यह इंडस्ट्री नहीं बन गयी। हम कहाँ थे जब यह बन रही थी?' इस तरह लेखिका समाज में पढ़े-लिखे बुद्धिजीवी के उन खोखले विचारों और नक़ारेपन को अड़े हाथों लेती हैं जो बहसों और मंचों पर ही सेक्युलरिज्म, सहिष्णुता, सामाजिक समता आदि की दुहाई देते हैं, पर उन्हीं मूल्यों को जब व्यवहार में लाने की बारी आती है तो वे विफल हो जाते हैं। क्यों कथा के अंत तक आते-आते ट्रेन में बलात्कृत महिलाओं की खबर पाकर शरद सोचता है-'ये औरतें हिन्दू ना हों'? क्यों शरद के मन में मुसलमान स्त्रियों के बलात्कार का विचार डर, दु:ख या आक्रोश पैदा नहीं करता? उसका एक और कथन काबिल-ए-गौर है-'कोई मुकाबला नहीं, उनके हमारे संगठन में...'। वास्तव में शरद के ये विचार उसके दबे साम्प्रदायिक चरित्र का उभार ही है। 'उनके और हमारे' जैसे अलगाववादी विचार के आते ही इंसान अपनी मज़हबी पहचान का परिचय देने लगता है।

Dr. Devina Auchoybur



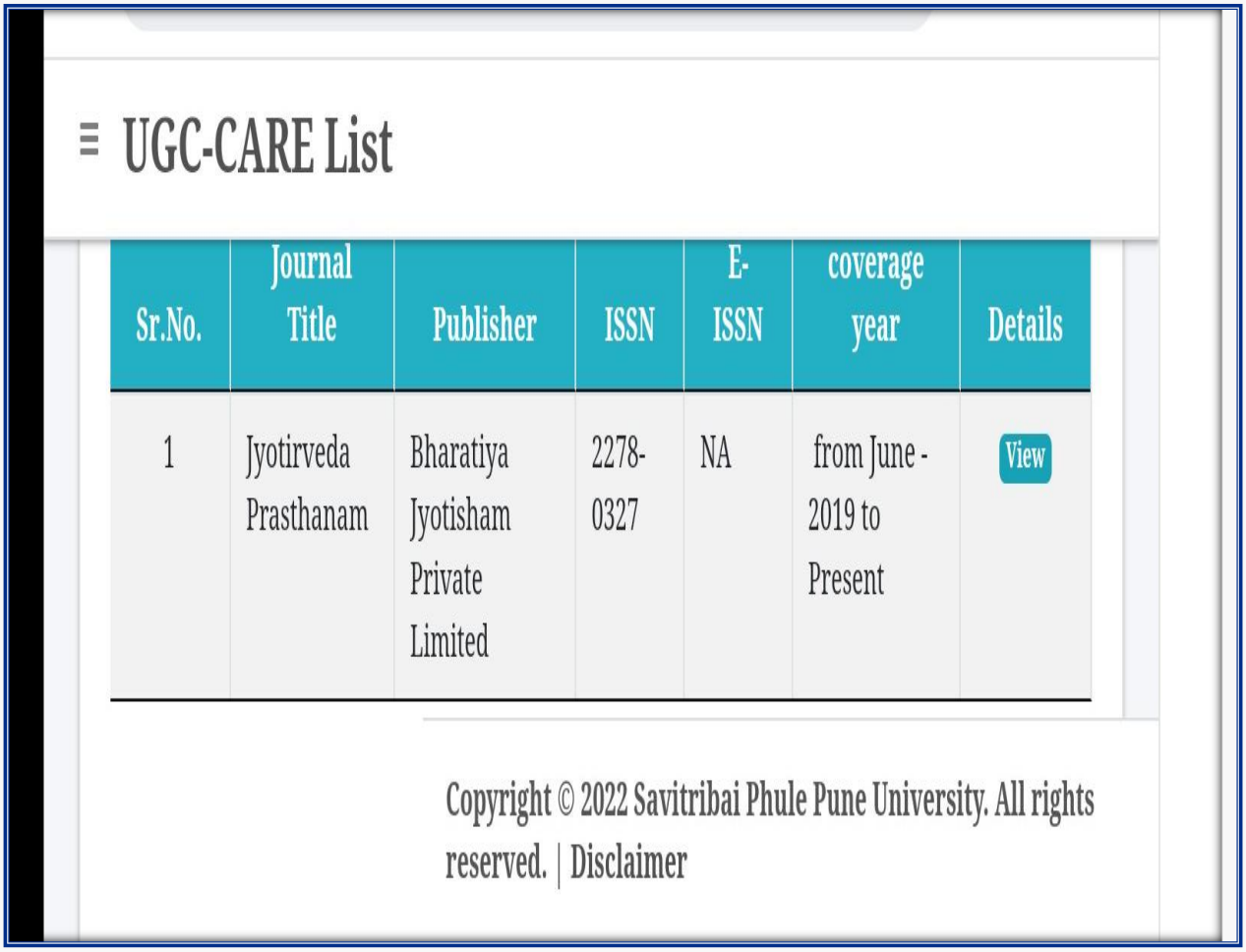
ISSN 2278 - 0327



ISSN 2278 - 0327

विषय-सूची

Dr. Devina Auchoybur



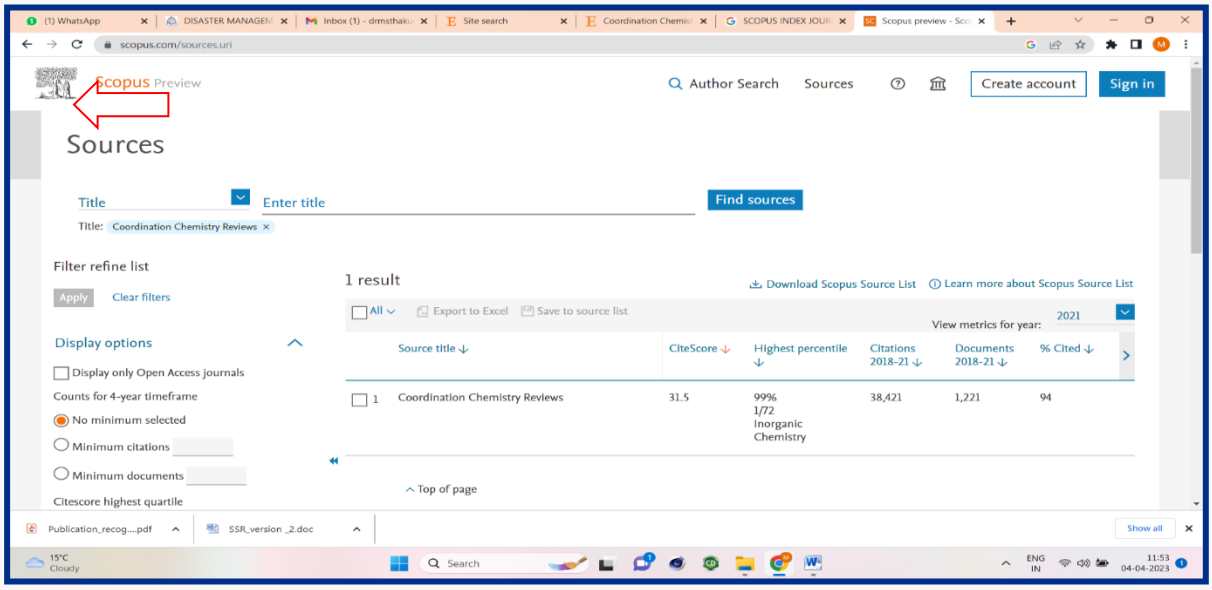
UGC-CARE List

Sr.No.	Journal Title	Publisher	ISSN	E-ISSN	coverage year	Details
1	Jyotirveda Prasthanam	Bharatiya Jyotisham Private Limited	2278-0327	NA	from June - 2019 to Present	View

Dr. Devina Auchoybur (UGC-CARE List)

2022-2023

1. Dr. Maheshwar Singh Thakur –Chemistry Department
Journal of Research: Coordination Chemistry Reviews
Year- 2022
ISSN: 1873-3840
Link to website of the Journal- https://www.sciencedirect.com/journal/coordination-chemistry-reviews
Link to article/paper/abstract of the article- https://www.sciencedirect.com/science/article/abs/pii/S0010854522003344



Dr. Maheshwar Singh Thakur (SCOPUS Listed)

2. Ms. Raman Matharu – Department of Commerce and Management
Journal of Research: Journal of Asiatic Society Mumbai
Year- 2022
ISSN: 0972-0766
Link to website of the Journal- https://asiaticsociety.org.in/
Journal Id=101001911

Journal of the Asiatic Society of Mumbai
ISSN : 0972-0766 UGC Care Group 1 Journal

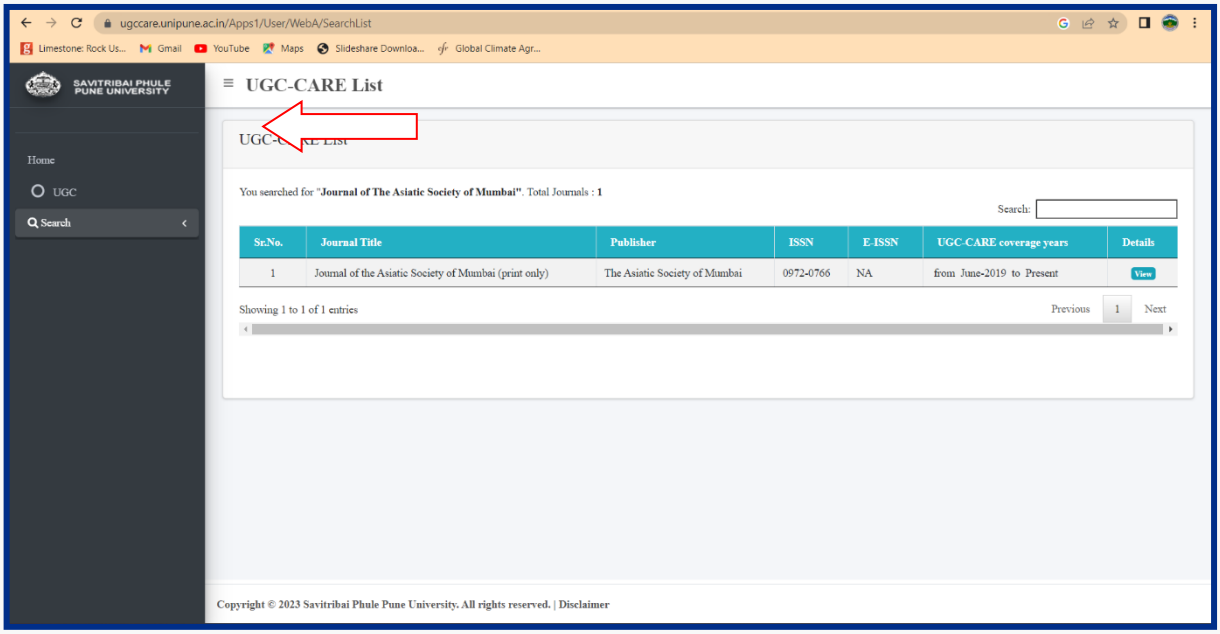
REASONS FOR NON-PERFORMING ASSETS IN HIMACHAL PRADESH STATE CO-OPERATIVE BANK: AN EMPIRICAL EVIDENCE

Raman Matharu[1], Parkash Chandel[2]
[1] Research Scholar, Department of Commerce, H.P University, Shimla, Himachal Pradesh, India
[2] Professor (Commerce) Director, Department of Interdisciplinary Studies-IIHS, H. P. University, Shimla, Himachal Pradesh, India

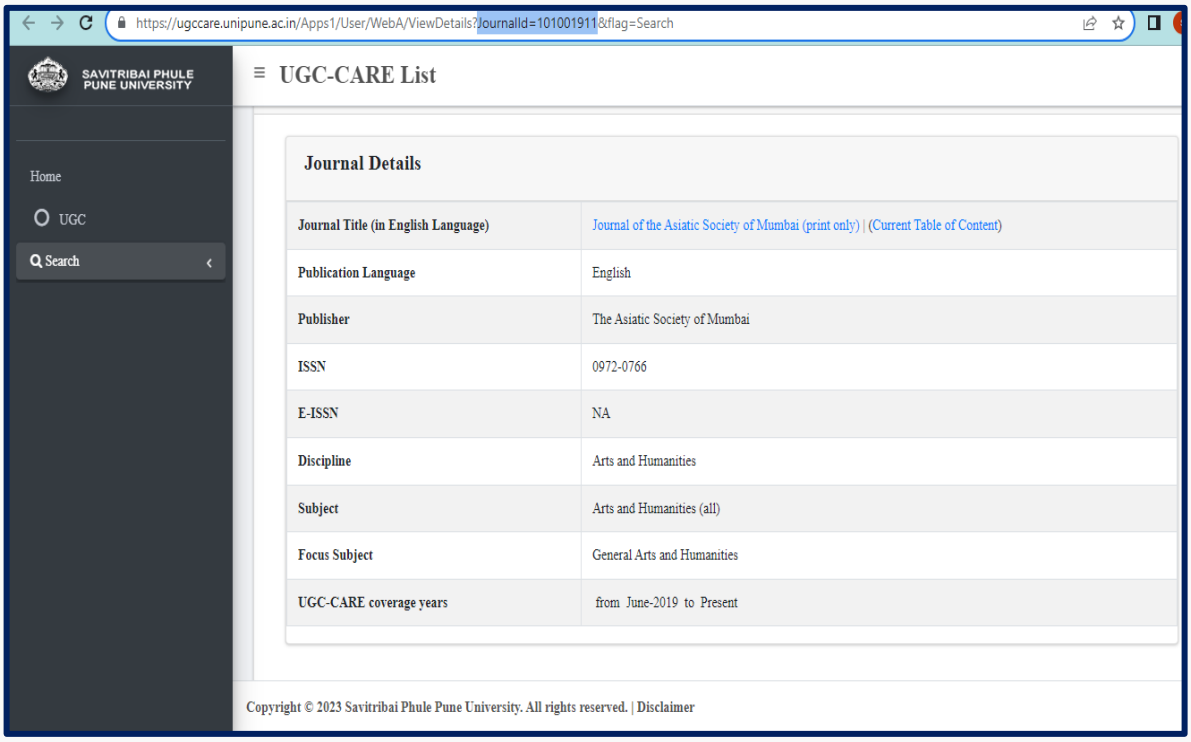
Abstract
The banking sector's increasing non-performing assets (NPAs) can harm the economy in a number of ways. A financial and economic catastrophe as well as an unfavourable investment environment may result from ineffective management of NPAs. In this paper, an effort has been made to pinpoint the causes of the sharp increase in NPA as well as proposed remedies. A number of businesses, including SSI, agriculture, priority industries, the public sector, and others are eligible for loans from the H.P. State Cooperative Bank. These loans must be controlled through pre-approval appraisal and distribution in order to curb the HPSCB's rising NPAs. NPAs need to be decreased in order for banks to become more profitable. A comprehensive framework for NPA management is required to recover NPAs. In order to create new policy measures and key performance indicators within the purview of the Reserve Bank of India's regulatory process and the management of non-performing assets, this study tracks the dynamics of NPAs in HPSCB.
Keywords: H. P. State Co-Operative Bank Ltd., Non-Performing Assets, Priority Sector, Non-Priority Sector

1. Introduction
Finance is the life blood of a modern economy. A financial system helps to mobilize the financial surpluses of an economy and transfer them to areas of financial deficit. The financial system promotes savings by providing a wide variety of financial assets to the general public. In the context of relatively under-developed capital market and with little internal resources, firms or economic entities depend largely on financial intermediaries for their fund requirements (Bhasin, 2007). The banks are the financial intermediary which accepts deposits of money from the public and lends them with a view to make profits. The banking system forms the core of financial sector of an economy (Bhasin, 2007). Banks are special as they not only accept and deploy large amounts of uncollateralized public funds in a fiduciary capacity, but also leverage such funds through credit creation (Akhtar & Azeez, 2015). Co-operative Banks are an important constituent of the Indian financial system, judging by the role assigned to them, the expectations they are supposed to fulfil, their number, and the number of offices they operate (Bhole & Mahakud, 2013). The co-operative banks in India and elsewhere provide banking facilities to the highly disorganized agriculture sector of country (Mathur, 1982).
Himachal Pradesh has the distinction of having first cooperative society registered in India. Cooperatives were primarily visualized as specialized agency for financing the credit requirement of rural people in the country particularly agriculture (Balokhra, 2015). Presently there are three co-operative banks functioning in Himachal Pradesh. These are Himachal Pradesh State Co-operative Bank, Kangra Co-operative Bank and Jogindra Central Co-Operative Bank. The Himachal Pradesh Co-operative Bank is serving the people of the State through a network of 190 branches and Extension Counter of which about 94% is in the rural areas of the State and one branch at New Subzi Mandi, Azadpur, New Delhi for the benefit horticulturists of the State (HPSCB, 2022). Therefore, HP State

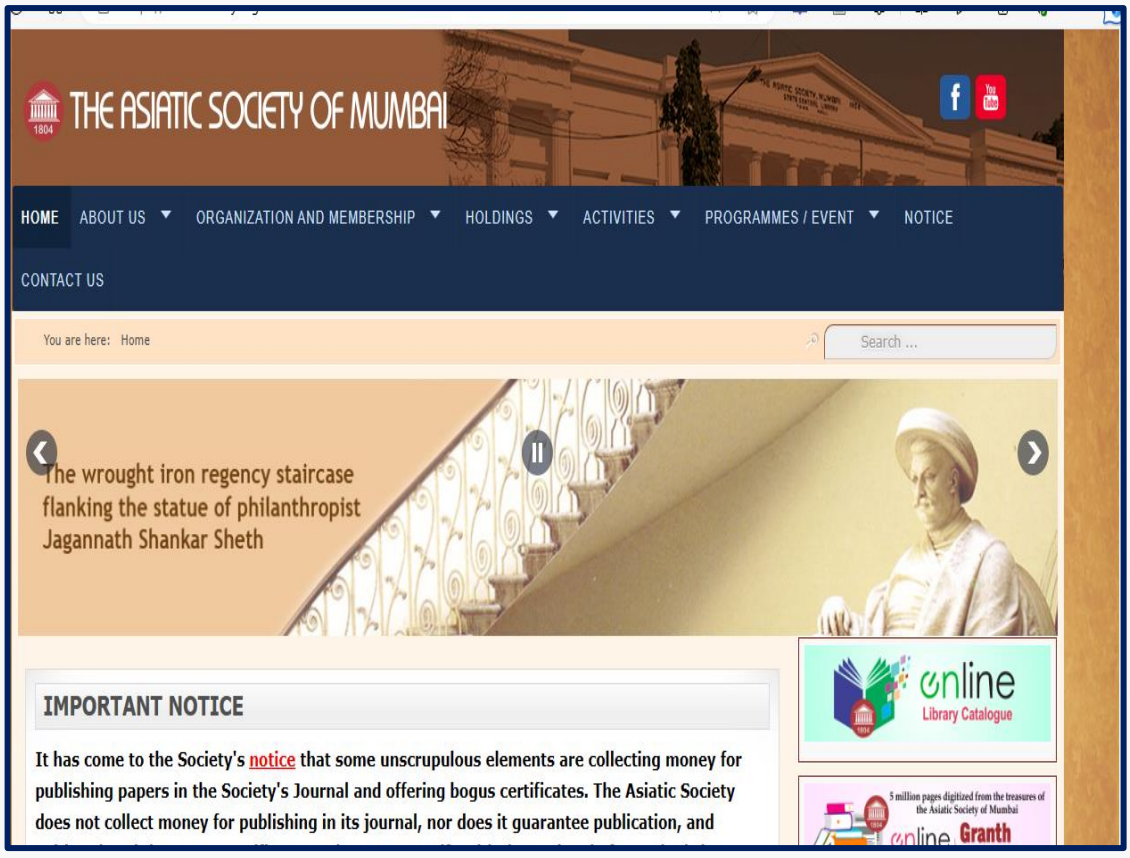
Ms. Raman Matharu



Ms. Raman Matharu (UGC Listed)



Ms. Raman Matharu (UGC CARE List)



Ms. Raman Matharu

St. Bede's College
Shimla-171002
(UGC-NAAC "A+" Grade Re-Accredited)
College with Potential for Excellence
Phone: 0177-2842304, Fax:- 0177-2842498
www.stbedescollege.in,**E-mail:-** bedescollege@gmail.com

DIRECT LINK LANDING TO THE RESEARCH PAPER FOR LAST FIVE YEARS ON HEI WEB SITE

3.3.1 Number of research papers published per teacher in the Journals notified on UGC care list during the last five years (2018-2023)

Sr. No.	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Calendar Year of publication	ISSN number	Direct Link landing to the research paper for last five years on HEI web site
1	A Study on Gender Violence: Issues and Interventions	Dr. Anjali Dewan	Home Science	Arts and Education International Research Journal	2018	2349-1353	Print version only
2	Gender Violence-Issues and Interventions	Dr. Anjali Dewan	Home science	Mahila Pratishtha	2018	2454-7891	Print version only
3	Traditional Fermented Indian Foods: A Treasure Hunt for Rare Lactic Acid Bacteria	Dr. Neha Gautam	Microbiology	Journal of Food Quality and Hazards Control	2019	2345-6825	https://jfqhc.ssu.ac.ir/article-1-541-en.pdf
4	Efficacy of purified bacteriocin of *Brevibacillus laterosporus* TK3 against *Listeria monocytogenes* and *Staphylococcus aureus* in Chicken	Dr. Neha Gautam	Microbiology	Asian Journal of Dairy and Food Research	2020	0976-0563	https://arccjournals.com/journal/asian-journal-of-dairy-and-food-research/DR-1524

5	The influence of dysbiosis on kidney stones that risk up renal cell carcinoma (RCC)	Dr. Shruti Gupta	Biotechnology	Seminars in Cancer Biology	2020	1044-579X	ps://www.sciencedirect.com/science/article/abs/pii/S1044579X20301474?via%3Dihub
6	Recent advances in nano-fenton catalytic degradation of emerging pharmaceutical contaminants	Ms. Anu Kumari	Chemistry	Journal of Molecular Liquids	2019	0167-7322	https://www.sciencedirect.com/science/article/abs/pii/S0167732219310153
7	Highly Selective and Rapid Naked-Eye Colorimetric Sensing and Fluorescent Studies of Cu+2 Ions Derived from Spherical Nanocellulose	Dr. Rohini Dharela	Chemistry	ACS Applied Polymer Materials	2020	5290–5299	https://doi.org/10.1021/acsapm.0c01025
8	Self-Efficacy and Risk-Taking among Adolescents	Mr. Mohit Kumar	Psychology	Indian Journal of Psychological Science	2021	0976 9218	Print version only
9	Developing Intercultural	Dr. Gitanjali Mahendra	English	The Bede Athenaeum	2021	0976-1748	https://www.indianjournals.com/ijor.aspx?target=ijor:bajrp&vol

	Communicative Competence through World Literature						ume=12&issue=1&article=008
10	Changing trends of non-performing assets in HP State Cooperative Bank Ltd.	Raman Matharu	Commerce & Management	International Journal of Advanced Research and Development	2021	2455-4030	Archives | International Journal of Advanced Research and Development (multidisciplinaryjournal.net)
11	Plant Protein Inhibitors and their antiviral activities-Potent therapeutics for SARS CoV-2	Shruti Gupta	Biotechnology	Journal of Medical Discovery	2021	2476-129X	(PDF) Plant protease inhibitors and their antiviral activities - Potent therapeutics for SARS CoV-2 (researchgate.net)
12	Wild Edible fruits and Vegetables of Himachal Pradesh	Dr.Kusum	Botany	The Bede Athenaeum	2021	0976-1748	https://www.indianjournals.com/ijor.aspx?target=ijor:bajrp&volume=12&issue=1&type=toc
13	Bioactivity of an Ionic Liquid against Two Major Coleopteran Stored Grain Insect Pests	Dr. Shweta Thakur	Zoology	International Journal of Pharmaceutical & Biological Archive	2021	2582-6050	http://www.ijpba.info/index.php/ijpba/article/view/1963
14	Bioactivity of an Ionic Liquid against Two Major Coleoptera	Dr Jyotika Brari	Zoology	International Journal of Pharmaceutical & Biological Archive	2021	2582-6050	http://www.ijpba.info/index.php/ijpba/article/view/1963

	n Stored Grain Insect Pests						
15	Molecular characterization and in silico analysis of oxalate decarboxylase of *Pseudomonas sp*. OXDC12	Dr. Shruti Gupta	Biotechnology	Journal Bimolecular Structure and Dynamics	2022	(P) ISSN: 0739-1102; (O) ISSN: 1538-0254	https://www.tandfonline.com/doi/abs/10.1080/07391102.2021.2024882?tab=permissions&scroll=top
16	Nanocarriers – based immobilization of enzymes for industrial application	Dr. Kiran Thakur	Microbiology	3 Biotech	2021	2190-5738	https://link.springer.com/article/10.1007/s13205-021-02953-y
17	Himalayan fern cheilanthes bicolor mediated fabrication and characterization of iron nanoparticles with antimicrobial potential	Dr. Kiran Thakur	Microbiology	BioNanoscience	2021	2191-1649	https://link.springer.com/article/10.1007/s12668-022-00969-z
18	A review on the genus populus: a potential source of biologically active compounds	Mr. Nishant	Chemistry	Phytochemistry Reviews	2021	ISSN: 1568-7767 (P); 1572-980X (E)	https://link.springer.com/article/10.1007/s11101-021-09772-2

19	On occurrence of a leafless Cymbidium in Western Himalaya	Dr. Kusum	Botany	J. Orchid Society of India	2021	0971-5371	https://www.orchidsocietyindia.org/wp-content/uploads/2022/05/Verma-etal_18_21-1.pdf
20	Attitude towards physical education and sports of higher secondary school students of Maharashtra State	Dr. Ashwani Kumar	Physical Education	International Journal of Physical Education, Sports and Health	2022	P-ISSN: 2394-1685 E-ISSN: 2394-1693	https://www.kheljournal.com/archives/2022/vol9issue1/PartG/9-1-26-882.pdf
21	Hinsa aur Dehshat ki Chadar Tale: Humara Shaher Us Baras	Dr. Devina	Hindi	Jyotirveda Prasthanam	2022	2278-0327	Print Version only
22	Metal coordinated macrocyclic complexes in different chemical transformations	Dr. Maheshwar Singh Thakur	Chemistry	Coordination Chemistry Reviews	2022	1873-3840	https://www.sciencedirect.com/science/article/abs/pii/S0010854522003344
23	Reasons For Non-Performing Assets In Himachal Pradesh State Co-Operative Bank: An Empirical Evidence	Ms. Raman Matharu	Commerce and Management	Journal of Asiatic Society Mumbai	2022	0972-0766	Print version only