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INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY RESEARCH & PRACTICE

For Sustainable Development & Innovation



ICMRP-2023

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डॉ. भीमराव आंबेडकर विश्वविद्यालय
(पूर्ववर्ती आगरा विश्वविद्यालय)
आगरा - 282 004 (उ.प्र.)
Dr. BHIMRAO AMBEDKAR UNIVERSITY
(Formerly : Agra University)
AGRA - 282 004 (U.P.) India



MESSAGE

I am delight to know that 'Department of History & Culture, Dr. Bhimrao Ambedkar University, Agra' in association with 'Koshambi Foundation, India' is organizing a *3 Days International Conference* on "Multidisciplinary Research and Practice" from December 16th to 18th, 2023.

The importance of multidisciplinary research and practice in driving innovation and progress cannot be overstated, and I am thrilled to see so many dedicated and forward-thinking individuals coming together to share their expertise and insights.

It is my belief that the contributions and interactions that will take place over the course of this event are poised to shape the future of research and practice across multiple domains and through events like this that we reaffirm our dedication to pushing the boundaries of traditional silos and embracing the synergy that arises from diverse perspectives converging towards a common goal.

I encourage all of you to seize this opportunity to not only expand your own horizons but to also forge connections that have the potential to spark innovative projects and initiatives. The power of collaboration knows no bounds, and I am confident that the discussions and partnerships formed here will have a lasting impact on the landscape of multidisciplinary research and practice.

I extend my best wishes to the organizers, sponsors, and all those who have worked tirelessly to make this conference a reality. Your efforts have laid the foundation for an enriching and enlightening experience for all involved.


(Ashu Rani)

Dr. K. S. Rana

Ph.D.(Agra),D.Sc.(Germany), LL.D.(U.K.), D.Litt. (New York)

Vice Chancellor

Advisor / Chairman

Expert Appraisal Authority

Ministry of Environment & Forest

Govt. of India, New Delhi

Indira Paryavaran Bhawan, Jor Bagh Road,
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सत्यमेव जयते



Resi : (i) 13 Lajpat Nagar,4, South Delhi - 110024

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(iii) Maharana Mahal, Ring Road, Agra-282006

Date :- 29-11-2023

Message

I am pleased to note that three Days International Conference on **“Multidisciplinary Research & Practice” (ICMRP-2023)** at Agra on **16th December, 2023**, is organized by **KOSHAMBI FOUNDATION, INDIA & Department of History & Culture, Dr. Bhimrao Ambedkar University, Agra.**

This International Conference on “Multidisciplinary Research & Practice would focus on promoting Sustainable Innovation & Development, collaboration of diversified fields in the context of Research & Development, Medical, Science, Agriculture, Engineering, Management, Law, Commerce, History, Arts & Humanities including Information, Communication & Technology for Generating New Start ups & Research for Global Development.

It is earnest need of hours such a huge gathering will discuss on such problems to extract new outcome, I hope so .

With my warmest Congratulations.

Sincerely,

Prof. K. S. Rana
Vice Chancellor

To

Lakshya Chodhary

Secretary

Koshambi Foundation / Dr. Bhimrao Ambedkar University,

Agra-282003



MATA BASANTI DEVI **SCHOOL OF BIOSCIENCES & BIOTECHNOLOGY**

Affiliated to Dr. B. R. Ambedkar University, Agra

Dr. Satish Kumar
Principal



MESSAGE

The sharing of knowledge via any means has always been a remarkable contribution in the growth and prosperity of the human civilization. Seminars, symposia, workshops, conferences, all have been are very useful and productive all the time. Keeping the purpose in the mind, Koshambi Foundation and Dr. B. R. Ambedkar University, Agra are jointly organising International Conference on Multidisciplinary Research & Practice-ICMRP-2023, during 16-18 December 2023. It has been a great pleasure to me to be a part of this conference. I hope that the deliberations and lectures which are scheduled to be delivered during the various sessions of the conference will certainly be fruitful and useful to the researchers and the young professionals. The central theme of the conference is itself multidisciplinary, canvassing almost all the areas of research and development with an impact on socio-economic uplift of the weaker section of the society. I am confident that the conference shall be a great success and will come to the useful conclusions.

I wish the grand success of the conference.

(Dr. Satish Kumar)

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Approved by AICTE New Delhi & Affiliated to AKTU & BTE, Lucknow

Mr. Rohit Uppal
Vice-Chairman
Neelam Group of Institutions, Agra



MESSAGE FROM VICE CHAIRMAN, NEELAM GROUP OF INSTITUTIONS, AGRA

It is my great pleasure to extend a warm welcome to all of you at the UGC-approved International Conference on Multidisciplinary Research & Practices (ICMRP - 2023).

This conference aims to bring together scientists, engineers, and practitioners across diverse disciplines to engage in discussions concerning various computation techniques and innovative practices spanning Medical, Science, Agriculture, Engineering, Management, Law, Commerce, History, Arts, and Humanities. The event has garnered widespread participation from both national and international contributors, and I am confident that this three-day intellectual fest will serve as a platform for Researcher Scholars from academia and industries alike to showcase their innovative endeavours in their respective fields.

Anticipating insightful perspectives on the theme of computation and innovation from our distinguished speakers, I am privileged to assert that this conference holds the potential to offer viable solutions to global issues. My heartfelt appreciation goes to the organizing committee for their unwavering dedication to bringing this conference to fruition. I trust that all participants will find the experience fruitful and beneficial.

Wishing the conference an outstanding success.

Date:09-12-2023

Er. Rohit Uppal
Vice-Chairman,
Neelam Group of Institutions, Agra

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Approved by AICTE New Delhi & Affiliated to AKTU & BTE, Lucknow

Mr. Rohan Uppal
Trustee
Neelam Group of Institutions, Agra



MESSAGE FROM TRUSTEE, NEELAM GROUP OF INSTITUTIONS, AGRA

It is with immense pleasure that I extend a warm welcome to all participants of the International Conference on Multidisciplinary Research & Practice (ICMRP-2023) and express my hopes for fruitful knowledge-sharing sessions.

Recognizing that the progress of our nation hinges on the endeavours of scientists and technocrats who channel their knowledge into pioneering realms of research and development, this conference serves as a unifying platform for emerging researchers, esteemed guests, speakers, and delegates to exchange insights and present their research findings. Anticipating that the conference proceedings will become a valuable reservoir for professionals, researchers, and academicians, I am optimistic about the impact it will have.

I take great pride in envisioning that this international conference will elevate and propagate research to new heights. My heartfelt congratulations go to the Koshambi Foundation, India, the Department of History & Culture at Dr. B.R. Ambedkar University, Agra, the staff of Neelam Group of Institutions, and all the dedicated coordinators and volunteers whose tireless efforts have brought this day to fruition.

Date: 09-12-2023



Mr. Rohan Uppal
Trustee
Neelam Group of Institutions, Agra

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SGT UNIVERSITY

SGT UNIVERSITY



Message

I feel delighted to write that Koshambi Foundation, India and Dr. Bhimrao Ambedkar University, Agra with SGT University, Gurugram, Genome Biotech, Society of Human Resource and Innovation and Neelam Group of Institutions, Agra in association with Rapture Biotech, Shonika rising medical and health institute, Koshambi Research organization and Akshvedam are jointly organizing 03 days International Conference on **“Multidisciplinary Research and Practice for Sustainable Development and Innovation”** on Dec. 16- 18, 2023 at Sanskriti Bhawan, Dr. Bhimrao Ambedkar University, Agra U.P.

The collaboration between these esteemed organizations is commendable, and the focus of the conference on various fields such as Science and Technology, Agriculture Science, Social Science, Home Science, History, Arts, Humanities, Medical Science, Management, Law and Commerce, Information and Communication Technology, as well as Engineering and Technology, reflects the diverse and comprehensive nature of the event.

The emphasis on addressing issues like malnutrition, hunger, and fostering innovations in a multidisciplinary manner is crucial for sustainable development. It is anticipated that the outcomes of this conference will not only be meaningful but also immensely beneficial for scientists, extension workers, youths, and farmers.

Agra, being a world heritage city, provides a rich and culturally significant backdrop for such a gathering. I extend my best wishes for a successful and fruitful conference, and I hope all the delegates have a rewarding and enjoyable stay in Agra.

Prof.(Dr.) Vinod Kumar
Pro Vice Chancellor
SGT University,
Gurugram, Haryana



OFFICE OF THE LOKPAL
DR. BHIMRAO AMBEDKAR UNIVERSITY, AGRA



MESSAGE

I am happy to know that the Department of History and Culture in collaboration with Koshambi Foundation and others is organizing a three day international conference on Multi - disciplinary Research and Practice for sustainable development and innovation (ICMRP 2023).

The conference covers a broad and diverse range of subjects and topics with multi-disciplinary and inter-disciplinary approach. The multiple sessions, presentations and panel discussions will definitely contribute to professional development and enhance the knowledge and skills of those attending it.

I am sure it will inspire creativity, innovation and new ideas through exposure to diverse perspectives and expertise among professionals, industry experts, researchers and attendees. Opportunities for networking, collaborations, exchange of ideas, sharing of knowledge and showcasing latest researches will benefit one and all.

I wish all success to the conference.

(Prof. Sugam Anand)
Lokpal

कोशांबी फाउंडेशन

(गैर सरकारी और गैर लाभकारी संगठन)

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Lakshya Chaudhary
National President
(Founder & Chairman)
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MESSAGE

We are delighted to announce that the Koshambi Foundation, India & Department of History & Culture at Dr. Bhimrao Ambedkar University, Agra is Jointly Organizing 3 Days International Conference on "Multidisciplinary Research & Practice" (ICMRP-2023) with SGT University, Genome Biotech, Society of Human Resource & Development & Neelam Group of Institution. The conference is scheduled to take place at the Conference Hall, Sanskriti Bhawan, Dr. Bhimrao Ambedkar University, Bagh Farzana, Agra from 16-18 December 2023.

This international gathering provides a unique opportunity to bring together researchers, professors, biotechnologists, scientists, physicians, doctors, delegates, students, graduates, and young researchers from diverse fields. The conference aims to facilitate knowledge exchange, discussions on the latest research, and presentations covering a broad spectrum of topics, including the newest developments in various fields, research conduct, ethics, quality, and the regulation of practical applications in different contexts.

This conference is not only timely but also essential, showcasing the forward-thinking approach of India's scholarly community. The interdisciplinary nature of the conference aptly justifies the term 'Sangam,' bringing together all branches of Multidisciplinary Sectors, including Science & Technology, Medical & Health, Management & Commerce, Arts, History & Culture, Sports, and more.

Attending the conference will not only expand your knowledge but also offer a platform to engage with eminent speakers and researchers, fostering the exchange of ideas and innovations. We believe that the insights shared during the deliberations will contribute significantly to the restructuring process for Multidisciplinary Areas.

We extend a warm invitation to all valued and respected delegates to take full advantage of this exceptional opportunity. Your presence will undoubtedly enrich the conference, and we look forward to your active participation in shaping the future of multidisciplinary research and practice.

Thank you, and we anticipate your presence at ICMRP-2023.

Lakshya Chaudhary
Organizing Secretary
ICMRP-2023

Head Office - Koshambi Complex , Plot No-11,175 Ft. Road, Shastripuram Ind, Area, Nh2-Nh11 Bypass, Sikandra, Agra-282007

मुख्य कार्यालय - कोशांबी कॉम्प्लेक्स, प्लॉट नंबर -11,175 फीट रोड, शास्त्रीपुरम इंडस्ट्रीज़, एरिया, एनएच2-एनएच11 बाइपास, सिकंदरा, अग्रा-282007



DEPARTMENT OF HISTORY & CULTURE
DR. BHIMRAO AMBEDKAR UNIVERSITY, AGRA
(FORMERLY AGRA UNIVERSITY, AGRA)
Value added course of Numismatics



Message

Dear Esteemed Participant,

It is my distinct pleasure as a member of the Organizing Committee to extend a warm honor and welcome to you at the upcoming International Conference on Multidisciplinary Research & Practice (ICMRP-2023). The conference is set to take place from 16th to 18th December 2023 at the Conference Hall, Sanskriti Bhawan, Dr. Bhimrao Ambedkar University, Bagh Farzana, Agra.

In my role as the Convener of ICMRP-2023, I am keenly aware that the success of this conference hinges on the collaborative efforts of many individuals who have dedicated their time and expertise to planning and organizing both the technical program and supporting social arrangements.

I express my heartfelt gratitude to the Program Chairs for their wise advice and brilliant suggestions in shaping the technical program. Special acknowledgment is extended to the Program Committee for their thorough and timely review of the submitted papers. Recognition is also due to the Local Organizing Committee members who have demonstrated exceptional dedication in meticulously planning the details of crucial aspects of the conference programs and social activities.

I am confident that delegates will find immense value in the research presentations that will be shared and disseminated during this significant occasion. Beyond the academic exchange, the conference provides a unique opportunity for networking with global experts.

I would like to take this moment to commend the aspirations and efforts of the organizers of ICMRP-2023 for the successful completion of this tremendous task.

As you participate in the conference, I wish you every success and hope that you carry with you the sweet memories of ICMRP-2023. May this event contribute significantly to your professional growth and foster meaningful connections within the global academic community.

Best Regards,
(Dr. B.D Shukla)
Convener
ICMRP-2023



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MATHURA
A Unit of Genome Biotech

MESSAGE



On behalf of the Koshambi Foundation, India, I extend heartfelt congratulations and best wishes to all those attending the 3 Days International Conference on "Multidisciplinary Research & Practice (ICMRP-2023)."

It is truly an honor to convey this message for the souvenir of the International Conference, which stands as a testament to our commitment to fostering a balanced and holistic approach in educating the young and budding researchers across various streams of Multidisciplinary Sectors.

I express my deepest gratitude to my esteemed colleagues for their unwavering support and enthusiasm, which has been instrumental in making this event possible. The talks delivered by distinguished scientists and the oral presentations sharing vast experiences are certain to enhance the knowledge of our young researchers.

Looking ahead, I am eager to collaborate with partners in India to further scientific knowledge and applications in these diverse areas. The success of this conference depends on the active participation and engagement of each attendee, and I am confident that it will pave the way for meaningful collaborations and advancements.

To all the participants, I extend my best wishes for a successful and enriching conference experience. May this gathering contribute significantly to the collective pursuit of knowledge in Multidisciplinary Research & Practice.

Best Regards,
(Dr. Nitin Wahi)
Joint Organizing Secretary
ICMRP-2023

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Dr. S. P. Singh
Head of Section
(Extension, Education)
JNKVV, College of Agriculture,
Tikamgarh-472001 M.P.



Message

I feel delighted to write that Dr. B.R.A. University Agra and Koshambi Foundation, India in Collaboration with SGT University, Gurugram, Genome Biotech, Society of human resource and innovation, Agra and Neelam Group of Institutions Agra, association with Rapture Biotech, Shonika rising medical and health institute, Koshambi research organization and Akshvedam are jointly organizing 03 days International Conference on “Multidisciplinary Research and Practice for Sustainable Development and Innovation on Dec. 16- 18, 2023 at Dr. BRAU, Agra, U.P. Supporting with Department of History and Culture, Dr. BRAU, Agra

I am sure that in this three days conference, various aspects related to Agriculture Science, Science and Technology, Social Science, Home Science, History, Arts, Humanities, Medical Science, Management, Law and Commerce including information, Communication and technology, Engineering and Technology will help to wipe out malnutrition, hunger and reinvigorating the innovations. The outcome of this conference would be very meaningful and of immense use for scientists, extension workers, youths and farmers. I welcome all the delegates at world heritage city Agra and wish for a fruitful stay.

(S. P. Singh)
Organizing Chairperson
ICMRP- 2023

INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY & RESEARCH PRACTICE

Keynote Lecture

**ICMRP
2023**

Basic Biosafety Principles & Biomedical Waste Management

Raghavendra Prasad Mishra¹, Udit Jain², Barkha Sharma³

Presenting author: Dr. Raghavendra Prasad Mishra; email- rmishra523@rediffmail.com

1. Department of Veterinary Public Health & Epidemiology, M.B. veterinary college, Dungarpur, Rajasthan (RAJUVAS); 2. College of Veterinary Sciences and Animal Husbandry, Department of Veterinary Public Health (DUVASU) Mathura, Uttar Pradesh, India; 2. Department of Veterinary Epidemiology and Preventive Medicine, College of Veterinary Sciences and Animal Husbandry, (DUVASU) Mathura, Uttar Pradesh, India.

Introduction

Biosafety is the prevention of large-scale loss of biological integrity, focusing both on ecology and human health, These prevention mechanisms include conduction of regular reviews of the biosafety in laboratory settings, as well as strict guidelines to follow. Biosafety is used to protect from harmful incidents. Many laboratories handling biohazards employ an ongoing risk management assessment and enforcement process for biosafety. Failures to follow such protocols can lead to increased risk of exposure to biohazards or pathogens. (citation) Human error and poor technique contribute to unnecessary exposure and compromise the best safeguards set into place for protection.e.g. Smallpox, Influenza. Anthrax etc.(UNEP,2003)

What is biohazard

It refer to biological substances that pose a threat to the health of living organisms, primarily that of humans. e.g. Samples of a microorganism, virus or toxin (from a biological source), Medical waste Substances harmful to other animals (WHO,2004). Biohazard symbol was given by Dow Chemical Company in 1966

Biosafety is related to several fields: ecology, agriculture, medicine,chemical industry research universities:

Biohazards materials:

- Viruses e.g. Influenza, Pox, Ebola hemorrhagic fever
- Bacteria e.g. Anthrax, Brucellosis
- Fungi e.g. Histoplasmosis, Aspergillosis
- Chlamydia/Rickettsiae e.g. Q fever
- Prions e.g. BSE, CZD
- Toxins e.g. Botulinum , Mycotoxins
- Human and Primate Cells, Tissues and Body Fluids

- Brain Tissue from Demented Patients
- Viral Vectors

Guidelines for working safely in research & medical laboratory facilities

- Practices and Procedures
 - Standard Practices
 - Special Practices & Considerations
 - Safety Equipment : PPE
- Facility Design and Construction
- Increasing levels of protection

(1) Standard Microbiological Practices

- Most important concept / Strict adherence, Aware of potential hazard, trained & proficient in techniques.

(2) Safety Equipment

Biological Safety Cabinets (BSC's)

- Kinds of BSC's classes and types
- Class I
- Class II
 1. Type A1, A2
 2. Type B 1,B2
- Class III

Class III type biosafety cabinet

(3) Facility Design and Construction

- Secondary Barrier/ Engineering controls
- Contributes to worker protection
- Protects outside the laboratory
 - Environment & Neighborhood
 - Ex. Building & Lab design, Ventilation, Autoclaves, Cage wash facilities, etc.

Principle of biosafety:

Biosafety Levels 1-4 (BSL)

- Increasing levels of employee and environmental protection
- Guidelines for working safely in research & medical laboratory facilities

Animal Biosafety Levels 1-4 (ABSL)

- Laboratory animal facilities
- Animal models that support research
- Guidelines for working safely in animal research facilities

Biosafety Level-1

- Well characterized agents, Agents not known to cause disease, Prophylactic treatment available
- Animals in open cage system or open environment (outdoors)
Examples . *E.coli* , *Bacillus subtilus*, Plasmids, Fungi, Yeast

BSL-I practices

- Bench-top work allowed, Daily Decontamination, Manual pipetting, Required Handwashing
- Red bag waste, Bio cabinet not required (unless creating aerosols)
- Precautions takes as 2° containment

Biosafety Level-2

- Agents associated with human disease, Treatment for disease available, Agent poses moderate hazard to personnel and environment, Direct contact or exposure,
- Percutaneous exposure, Mucus membrane exposure such as Eyes, Mouth, open cut
Example: *Corynebacteria diphtheria*, *Neisseria meningitides*, *Stapylococcus aureus*, Ringworm.

BSL-II practices

- Limited access to lab when work in progress, Daily decontamination, PPE required, Red bag & sharps containers required, Biohazard Sign posted at entrance to lab, Documented training

Biosafety Level-3

- Dangerous/exotic agents, Life threatening disease, Aerosol transmission, Agents of unknown risk of transmission or health affects, Treatment available
Example: Human Immunodeficiency Virus, *Mycobacterium tuberculosis*, *Coxiella burnetii*

BSL-III practices

- Public access NOT permitted, daily decontamination after spill and upon completion of experiment, Autoclave required and waste is disposed at the end of day, required foot activated handwashing sink and controls, Biohaz. Signs and labels posted, air flow from low hazard to high hazard “Pressure Mapping”.

Biosafety Level-4

- Dangerous/exotic agents, Life threatening disease, Aerosol transmission
- Agents of unknown risk of transmission or health affecta and No known treatment.

Example: Lassa Fever Virus, Ebola Hemorrhagic Fever Virus, Marburg Virus, Herpes B Virus

BSL-IV Practices





- Builds on BSL-3/ ABSL-3 practices, maximum containment facilities
- Pressurized Containment Suite, BSL-3 + Class III Biosafety Cabinet
- Chemical decontamination showers, Liquid effluent collection / decontamination

Biomedical waste

Defined as “Any waste which is generated during: Diagnosis, Treatment and Prevention of disease (immunization) and from Associated research”. The amount of hospital waste generated ranges from 1.5 - 2 kg/bed/day Bio-medical waste is approx. 15% of the total waste in a Hospital, of which 10% is hazardous & infective and 5% is hazardous but not infective.

What is infectious waste :Waste which comes in touch with the body fluids like blood, serum, urine, feces, vomits, pus etc. Cotton, Dressings, POP Cast, Paper plaster, Bandage, Sanitary napkins.

TYPES OF BIOMEDICAL WASTE RULE – 2016

Cat.	Type of Bag/ Container used	TYPE OF WASTE	Treatment /Disposal options
Yellow 	non-chlorinated plastic bags Separate collection system leading to effluent treatment system ←	a) Human Anatomical Waste b) Animal Anatomical Waste c) Soiled Waste d) Expired or Discarded Medicines e) Chemical Waste f) Micro, Bio-t and other clinical lab waste g) Chemical Liquid Waste	Incineration or Plasma Pyrolysis or deep burial*
Red 	non-chlorinated plastic bags or containers	Contaminated Waste (Recyclable) tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes (without needles) and gloves.	Auto/ Micro/Hydro and then sent for recycling. not be sent to landfill
White 	(Translucent) Puncture, Leak, tamper proof containers	Waste sharps including Metals	Auto or Dry Heat Sterilization followed by shredding or mutilation or encapsulation
Blue 	Cardboard boxes with blue colored marking	Glassware	Disinfection or auto/ Micro/hydro and then sent for recycling.

CONCLUSION

- Several microorganisms are highly pathogenic and infectious in nature they cause sever disease to human and animal even death, so while handling such types of microorganism proper self protection should be practiced.
- In BMW several pathogenic organisms are present which spread to human and animal directly through contact are by spreading in environment and causes severe infection to both animal and humans, so proper disposal of BMW should be done.
- These practices helpful for health protection as well as environment protection.

INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY & RESEARCH PRACTICE

Invited Lecture

**ICMRP
2023**

"BEYOND THE SURFACE: CONSTRUCTING AN INTERPRETATIVE CULTURAL THEORY WITH THICK DESCRIPTIONS".

"Thick Description" is a term used by the cultural anthropologist Clifford Geertz. He described the practice of thick description as a way of providing cultural context and meaning to human actions and behaviour, as opposed to "thin description" which is a factual account without any interpretation.

A thin description lacks context. It describes something without explaining its cultural significance. A thick description describes not only the action, but its significance.

Thick description includes voices, feelings, actions and meanings (Ponterotto, 2006). The example most commonly used to explain 'Thick description' comes from Ryle. He argued that if someone winks at us without a context, we don't know what it means. We can report on the wink (thin description).

What is thick and thin description?

A thin description lacks context. It describes something without explaining its cultural significance. A thick description describes not only the action, but its significance.

What is the difference between thick description and thin description?

Thick descriptions provide enough context so that a person outside the culture can make meaning of the behaviour. Thin description by contrast, is stating facts without such meaning or significance.

What does Geertz thick description offer an anthropologist?

One of the key terms in Clifford Geertz's anthropological theory is that of "Thick Description". ... According to Geertz an ethnographer must present a thick description which is composed not only of facts but also of commentary, interpretation and interpretations of those comments and interpretations.

CLIFFORD GEERTZ'S "THICK DESCRIPTION"

One of the key terms in Clifford Geertz's anthropological theory is that of "Thick Description". Following Ryle, Geertz holds that anthropology's task is that of explaining cultures through thick description which specifies many details, conceptual structures and meanings, and which is opposed to "thin description" which is a factual account without any interpretation. Thin description for Geertz is not only an insufficient account of an aspect of a culture; it is also a misleading one. According to Geertz an ethnographer must present a thick description which is composed not only of facts but also of commentary, interpretation and interpretations of those comments and interpretations. His task is to extract meaning structures that make up a culture, and for this Geertz believes that a factual account will not suffice for these meaning structures are complexly layered one on top and into each other so that each fact might be subjected to inter crossing interpretations which ethnography should study.

In "Thick Description: Toward an Interpretive Theory of Culture" Geertz outlines four parameters for an adequate "thick description" and a study of culture:

1. Interpretative study: since anthropology is a semiotic endeavour, cultural analysis should be an interpretative practice which traces the manner in which meaning is ascribed. The raw observational material collected by an ethnographer is not sufficient if we are to achieve a thick description of a culture.
2. The subject of interpretation is the flow of social discourse. Interpretative ethnography according to Geertz should produce the codes required for decoding social events.
3. Interpretation deals with extrovert expressions. Data collection and interpretation are limited to what local informants can tell us. Therefore the thickest of descriptions can only be based on extrovert expressions of culture.
4. Ethnographic description is microscopic. According to Geertz ethnographic findings describe local behaviours and truths as serve as an ethnographical miniature. We always view specific and contextualized happenings, and these make up the thick description.

Clifford Geertz, the cultural anthropologist who influenced the practice of symbolic anthropology, wrote "analysis, then, is sorting out the structures of signification...and

determining their social ground and import.” (Geertz, 1973, p. 9) Geertz was concerned that anthropological research was more interpretive than anthropologists admitted. To paraphrase, they were explicating other’s explications of explications. What Geertz was saying is that anthropological writing is fiction in the sense that they are made and fashioned but they are not false.

Geertz described the practice of *thick description* as a way of providing cultural context and meaning that people place on actions, words, things, etc. Thick descriptions provide enough context so that a person outside the culture can make meaning of the behaviour. *Thin description* by contrast, is stating facts without such meaning or significance. Surveys provide thin descriptions at best. We are suggesting that thick descriptions can be useful to people within an organization in order to better understand themselves and the complexity of organizational life. They can then see their own culture in the subtle ways that cannot be exposed by surveys and sound bites alone.

Like Geertz, we see our role as exposing the social ground and import of social structures yet we tend to do it in a different way than was available to Geertz. Rather than the researcher being the only one who sniffs out the trail of signification, we engage the people themselves in making sense of their own sense making by indicating the significance of the stories they tell. But this second layer of data (signifiers) alone does not create a thick enough description. It is through sorting the stories by what they mean and seeing groups, patterns and even holes in groups (the things we can do with Sense Maker) that we are able to provide another layer of interpretation and thicken the description of what a culture is doing. We help turn participants in the system to self-anthropologists, sorting out their own signification, social ground, and import.

We are exploring ways in which we can make the description even thicker. One idea my colleague Joan Goppelt came up with is to create stories from the stories. We are beginning to write semi-fictional accounts of actions and interactions that describe the patterns emerging from the data. The stories are “fictional” because no exact series of events described in these stories would have actually happened. But they are “semi-“because they are in a sense true. They mirror cultural patterns and should be seen as plausible and probable events to those in the culture. These stories will be more than

merely changing the names to protect the innocent but less than pure creative fantasy. Fiction writers (those that write for our entertainment) create plausible and often improbable stories. They are out of the ordinary, which makes them interesting. We're looking at recreating the "ordinary drama" of everyday existence in an organization – not to entertain but to explain, expose, and enrich.

There are examples of fictional accounts that describe organizational patterns such as Lencioni's *Five Dysfunctions of a Team*, but these are accounts abstracted from multiple teams, organizations and cultures. Lencioni wants a story that is applicable to many (and to create a best-seller). We want to create something that only makes sense in a certain cultural context and so shows not just the typical but also the unusual. By starting and ending with the stories told within a cultural setting, we are attempting to, as Geertz put it, expose "their normalness without reducing their particularity" (p. 14). Has anyone else tried this approach in organizations and if so, what was your experience?

Geertz, C. (1973). *The interpretation of cultures: Selected essays*. New York: Basic Books.

INTRODUCTION TO "THICK DESCRIPTION"

As an anthropologist, Geertz was first and foremost interested in ethnography. However, he was frustrated by what he saw as the many surface-level readings of culture that some anthropologists were producing (Geertz 1973/2013). Why was this an issue? Simply put, Geertz recognized that culture is a knotty and often mysterious thing, made up of layers upon layers of intertwined symbols and signs. ("[It's] turtles all the way down," he once noted, quoting ancient Hindu belief; 1973, p. 29). This means that culture is not an easy thing to define, and it is even harder to describe. To aid anthropologists in the task of defining their cultural object of study, Geertz introduced the concept of thick description into the parlance of the discipline; this term can be described as "the detailed account of field experiences in which the researcher makes explicit the patterns of cultural and social relationships and puts them in context" (Holloway apud RWJF, n.d., para. 3).

To make better sense of what thick description entails, Geertz explained it with a simple example:

Consider ... two boys rapidly contracting the eyelids of their right eyes. In one, this is an involuntary twitch; in the other, a conspiratorial signal to a friend. The two movements are, as movements, identical; from an I-am-a-camera, “phenomenalistic” observation of them alone, one could not tell which was twitch and which was wink, or indeed whether both or either was twitch or wink. Yet the difference, however unphotographable, between a twitch and a wink is vast; as anyone unfortunate enough to have had the first taken for the second knows. The winker is communicating, and indeed communicating in a quite precise and special way ... Contracting your eyelids on purpose when there exists a public code in which so doing counts as a conspiratorial signal is winking. That’s all there is to it: a speck of behaviour, a fleck of culture, and—voilà!—a gesture.

That, however, is just the beginning. Suppose, he continues, there is a third boy, who, “to give malicious amusement to his cronies”, parodies the first boy’s wink, as amateurish, clumsy, obvious, and so on. He, of course, does this in the same way the second boy winked and the first twitched: by contracting his right eyelids. Only this boy is neither winking nor twitching, he is parodying someone else’s, as he takes it, laughable, attempt at winking. Here, too, a socially established code exists ... The point is that between what Ryle calls the “thin description” of what the rehearse (parodist, winker, twitcher . . .) is doing (“rapidly contracting his right eyelids”) and the “thick description” of what he is doing (“practicing a burlesque of a friend faking a wink to deceive an innocent into thinking a conspiracy is in motion”) lies the object of ethnography: a stratified hierarchy of meaningful structures in terms of which twitches, winks, fake-winks, parodies, rehearsals of parodies are produced, perceived, and interpreted, and without which they would not (not even the zero-form twitches, which, as a cultural category, are as much non-winks as winks are non-twitches) in fact exist, no matter what anyone did or didn’t do with his eyelids. (1973, pp. 6-7)

In this short but impactful passage, Geertz provides us with a perfect example of a behaviour that can only be explicated by thick description. The three boys—the winker,

the twitcher, and the parodist—are all doing the same physical action (as Geertz's says "rapidly contracting [their] right eyelids"), but given the socio-cultural context that each boy finds himself in, the exact same behaviour can mean vastly different things. Geertz argues that it is this detailed context—this *je ne sais quoi*—that the ethnographer must dig into and discover if one wants to adequately explain behaviour and by extension culture. In summation, Geertz is quoted as saying "culture is context" (Geertz quoted in Shankman et al., 1984, p. 262), and this utterance helps understand what exactly he was getting at when he discusses thick description.

THICK DESCRIPTION: TOWARD AN INTERPRETATIVE THEORY OF CULTURE:

In "Thick Description: Toward an Interpretative Theory of Culture", Geertz has addressed the theme of culture and has refuted the previously developed anthropological perspectives seeing culture as the synthesis of traditions, values, and techniques. The author has focused on the concept of 'thick description' arguing that the semiotic nature of culture has its implications to political and anthropologic studies. The following paper will critically summarize the class reading under consideration. The key ideas expressed by the author draw the readers' attention to the nature of human culture. Geertz supports Weber's point of view that a human being can be seen as an animal dangled in the entanglement of meaning and significance invented on one's own. He states that these webs are cultures created by the man. Therefore, he argues that cultural studies should involve an interpretative search of meaning rather than experimental research (Geertz 3). The concept of "thick description" that Geertz often uses in the given reading can be described as a methodological imperative that is being shaped under the influence of semiotic developments in culture. Geertz has distinguished the notions of "thick description" from the notion of "thin description" by stating that it relates to the work of ethnographer who interprets the factual account of a culture that has occurred. "Thin description" is thus the exact cultural phenomenon that has taken place. Reasoning with the help of "thick description" and "thin description" concepts, Geertz has come up with the conclusion that the very task of ethnography is producing "thick description" or providing translation to the actual

cultural events. For Geertz, culture is the phenomenon that becomes revealed in the actions of a particular person. Culture, according to Geertz, is specific and public. These characteristics mean that culture belongs to particular groups of people and it is the collective property of all individuals in this group. It is also an assembly of socially established concepts of meaning that people are using in their communication. Geertz argues that culture can also be seen in the collection of texts. Written manuscripts are thus the physical demonstration of culture. Therefore, an ethnographer may study culture in the same way that a researcher is working with a case study. One thus needs to incorporate the knowledge of the localization of the studied group and the exact details of the event that took place. Culture is a complex phenomenon that occurs in the process of communication with contextual meaning. Culture exists in the network of present social relations. Consequently, social structure and culture are the two dimensions of the same phenomena.

EXPANDING ON THE AUTHOR'S ESSENTIAL POINTS:

The author's contribution to ethnographic studies can be hardly underestimated. Geertz addressed this area of scholarly studies from a fresh perspective and identified the wide scope of questions that need to be answered to improve the validity of findings made by ethnographers. His vision of culture and the work that an ethnographer is doing can be compared with the tasks done by a literary critique that reads, evaluates, and analyses a text. For such specialists, many aspects need to come to attention in order to make sure that the results of their work are solid. These aspects include being fluent in the language of studies, having a background in studies, being methodological, and avoid bias. In parallel with a critique, an ethnographer should be fluent in the local language, have a background with the studied culture, be methodological and avoid bias. The points that Geertz made in this chapter has addressed the very nature and fundament of anthropological studies. He originated a new debate on the topics related to the nature of culture, the difference between culture and social structure, how culture should be perceived, and how the relations between the observed and observer can be regulated. Geertz has made an important contribution into understanding the post-modern world.

He has helped anthropologists change their traditional approach to conducting studies in the natural environment of the studied society. Instead, today's cultures began to be addressed from the perspective of other cultures. For instance, U.S. or European anthropologists can study a representative of a certain culture invited to their terrain rather than immersing themselves into the cultural environment of the native country of this individual. This approach has improved the understanding of the notion of globalization through the process of international culture assimilation because the technological progress has left almost no individual or culture that has not experienced influence from other cultures and societies.

THE AUTHOR'S ARGUMENT'S STRONG AND WEAK POINTS

Speaking about the strong points of Geertz's argument, it should be noted that the author is using a strong theoretic background to build on and prove the appropriateness of the conclusions made. He does not stop there and makes helpful illustrations to help the audience understand the difference between the notions of "thick description" and "thin description" in practice. For instance, he is using the example of the parodist, whose professional activity can be seen as "thick description", whereas the phenomenon that one trying to demonstrate is "thin description" according to Geertz. Another strong illustration that the author is providing to the readers to help them ponder into the complexity of the world of ethnography is comparing the work of an ethnographer with the work of a translator whose task is to interpret a manuscript written in a foreign language and with multiple incoherencies, ellipses, and transient examples. As for the weak points in the argument, Geertz keeps on focusing on the idea that the cultural knowledge is intrinsically of an interpretive character, which seems ambiguous because it is not clear how one can make sure that interpretation is done in a valid way. Next, if it is a highly interpretive matter and multiple different interpretations exist by different persons, then how one can know which interpretation is trustworthy, and which one is unjustified or even completely mistaken. Besides, how can one avoid the dangers of being biased or prejudice? These are the questions that appear to have no distinct answer in the reading under consideration.

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LSOCIO-ECONOMIC IMPACT OF BARSANA TEMPLES IN UTTAR PRADESH: A HISTORICAL STUDY

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INTRODUCTION

Barsana is a town in Uttar Pradesh, India, that is famous for its temples dedicated to Radha Rani, the consort of Lord Krishna. The temples have a historical significance as they are associated with the legends and stories of the divine couple. Some of the temples and their historical significance are:

- **Shriji Temple:** This is the main temple of Barsana, where Radha Rani is worshipped as the supreme goddess of love and devotion. The temple is believed to have been established by Radha Rani's grandson, Vajranabha, and renovated by a Vaishnavite scholar, Narayan Bhatt, during the reign of Akbar. The temple has a beautiful red stone architecture with intricate carvings and paintings depicting the life of Radha and Krishna.
- **Radha Kushalbihari Temple:** This temple was built by a Rajput king, who was a great devotee of Radha and Krishna. The temple has a graceful sandstone structure with elegant sculptures and engravings. The temple houses a beautiful idol of Radha Rani, which was originally meant for the Shriji Temple, but was revealed to the king in a dream by Radha Rani herself. The temple also has idols of Krishna, Radha, and their friends in various poses.
- **Dan Bihari Temple:** This temple has a famous story related to donations. The name Dan Bihari means the one who gives and Bihari means Krishna. The temple commemorates the incident when Krishna gave gold equivalent to the weight of Radha to a poor Brahmin, who was unable to arrange for his daughter's marriage. The temple also has a large scale of balance, where devotees offer donations to Krishna.
- **Maan Mandir:** This temple is situated on the highest peak of the hill, where Radha Rani used to go into a mood of sulking or maan when she was annoyed with Krishna. The temple has a small chamber, where Krishna used to plead with Radha to please her and pacify her anger. The temple also has a beautiful view of the surrounding landscape.

These are some of the temples in Barsana and their historical significance. The temples are not only places of worship, but also places of culture, art, and festivals, that reflect the divine love between Radha and Krishna. The temples attract thousands of devotees and tourists, especially during the festivals of Lathmar Holi and Radha Ashtami, which celebrate the birth and union of the divine couple.

The socioeconomic impact of religious sites is an important topic to study, as it can reveal how religion influences various aspects of human life, such as culture, identity, economy, and politics. Religious sites are not only places of worship, but also places of heritage, tourism, and social service, that can have positive or negative effects on the development of the regions and communities where they are located. Studying the socioeconomic impact of religious sites can help us understand the role of religion in history and society, and how it can contribute to human wellbeing and progress. Some of the benefits of studying the socioeconomic impact of religious sites are:

- It can generate information about a neglected area of "nonmarket" behavior, such as religious beliefs, norms, and values, and how they affect economic attitudes and activities of individuals, groups, and societies.
- It can show how economic models can be modified to address questions about religion, such as how religion can influence economic growth, human capital, social capital, political participation, and mental health.
- It can explore how religion can play a significant role in favoring human rights, such as socioeconomic rights, that are essential for human flourishing, especially in the context of developing countries and pluralistic societies.

HISTORICAL BACKGROUND

The Barsana temples are historical and religious sites that are dedicated to Radha Rani, the consort of Lord Krishna, who is believed to have been born and raised in Barsana. The temples have evolved over time, reflecting the changes in the history, culture, and architecture of the region. Some of the historical context and evolution of the Barsana temples are:

- The Radha Rani Temple, also known as the Shriji Temple or the Ladli Mahal, is the main temple of Barsana, situated on the top of the Bhanugarh hill. The temple is said to have been originally established by King Vajranabh, the great-grandson of Krishna, around 5000 years ago. However, the temple was in ruins until it was rediscovered by Narayan Bhatt, a disciple of Chaitanya Mahaprabhu, in the 16th century. The temple was then rebuilt by Raja Bir Singh Deo, a Rajput king, in 1675 AD, with the help of Narayan Bhatt and Raja Todarmal, one of the governors in Akbar's court. The temple

has a red sandstone architecture with arches, pillars, carvings, and paintings depicting the life of Radha and Krishna. The temple houses the beautiful idols of Radha and Krishna, who are worshipped together as Shri Laadli Lal, meaning the beloved daughter and son of the town.

- The Radha Kushal Bihari Temple, also known as the Chaturbhuj Temple, is another temple of Barsana, located on the Brahmanchal hill. The temple was built by another Rajput king, who was a great devotee of Radha and Krishna. The temple has a sandstone structure with elegant sculptures and engravings. The temple has a unique idol of Radha Rani, which was originally meant for the Shriji Temple, but was revealed to the king in a dream by Radha Rani herself. The temple also has idols of Krishna, Radha, and their friends in various poses.
- The Dan Bihari Temple, also known as the Prem Sarovar Temple, is a temple of Barsana, situated near the Bhanusarovar pond. The temple commemorates the incident when Krishna gave gold equivalent to the weight of Radha to a poor Brahmin, who was unable to arrange for his daughter's marriage. The temple also has a large scale of balance, where devotees offer donations to Krishna.
- The Maan Mandir, also known as the Mor Kutir Temple, is a temple of Barsana, situated on the highest peak of the hill. The temple is associated with the mood of sulking or maan that Radha used to go into when she was annoyed with Krishna. The temple has a small chamber, where Krishna used to plead with Radha to please her and pacify her anger.
 - The most famous practice is the Lathmar Holi, which is celebrated a few days before the main Holi festival. Lathmar Holi is a unique tradition where the women of Barsana beat the men of Nandgaon, the neighboring village where Krishna grew up, with sticks as they try to smear them with colors. This is done to recreate the playful teasing and pranks that Radha and Krishna used to indulge in during their childhood. The festival attracts thousands of tourists and pilgrims every year, who join in the fun and festivities.
 - Another important practice is the Radhashtami, which is the birthday of Radha Rani. On this day, the devotees worship Radha Rani as the supreme goddess of love and devotion, and offer her various delicacies and flowers. The main temple of Radha Rani, also known as the Shriji Temple or the Ladli Mahal, is decorated with lights and colors, and a grand procession is taken out in the town. The devotees also sing and dance in praise of Radha Rani and her divine love for Krishna.

TOURISM AND PILGRIMAGE

Barsana is a historical town and a popular pilgrimage and tourist destination in Uttar Pradesh, India. The town is famous for its temples dedicated to Radha Rani, the consort of Lord Krishna, who is believed to have been born and raised in Barsana. The town attracts a large number of pilgrims and tourists throughout the year, especially during the festivals of Lathmar Holi and Radha Ashtami, which celebrate the birth and union of the divine couple.

The influx of pilgrims and tourists to Barsana has both positive and negative impacts on the town and its people. Some of the impacts are:

- Positive impacts:
 - The influx of pilgrims and tourists boosts the economy and livelihood of the town, as they spend money on accommodation, food, transportation, and souvenirs, which generate income and employment for the local people. The town also receives funds from the government and private agencies for the preservation and development of the heritage and infrastructure of the town.
 - The influx of pilgrims and tourists enhances the cultural and religious awareness and identity of the town, as they witness and participate in the various rituals, prayers, and offerings that are performed at the temples and other holy places. The town also showcases and shares its rich and vibrant culture, art, and music with the visitors and the world.
- Negative impacts:
 - The influx of pilgrims and tourists causes environmental and social problems, such as pollution, congestion, noise, waste, and overcrowding, which affect the quality of life and health of the town and its people. The town also faces challenges in managing the resources and facilities to cater to the large number of visitors.
 - The influx of pilgrims and tourists poses a threat to the security and safety of the town and its people, as it increases the risk of accidents, crimes, conflicts, and violence. The town also has to deal with the issues of vandalism, theft, and encroachment of the temples and other holy places.

Thus, the influx of pilgrims and tourists to Barsana has both positive and negative impacts on the town and its people, which require careful planning and management to balance the benefits and costs of the tourism and pilgrimage activities. Tourism is one of the major economic activities in Barsana, as the town attracts a large number of pilgrims and tourists throughout the year, especially during the festivals of Lathmar Holi and Radha Ashtami. Barsana offers various types of accommodation facilities for the visitors, such as hotels, guest houses, ashrams, and dharamshalas. Barsana is well connected by road and rail to the nearby cities of Mathura and Vrindavan, which are the

main hubs for tourism in the region. The town has a bus stand and a railway station, which offer regular services to and from Mathura and Vrindavan. The tourists can also hire taxis, auto-rickshaws, or cycle-rickshaws to travel within and around the town.

ECONOMIC CONTRIBUTIONS

The economic contribution of the Barsana temples to the local economy can be estimated by looking at some quantitative data, such as the number of visitors, the expenditure per visitor, the income and employment generated by the tourism and pilgrimage activities, and the funds received for the preservation and development of the heritage and infrastructure of the town. Some of the data are:

- **Number of visitors:** According to a report by the Uttar Pradesh Tourism Department, Barsana received about 15 lakh visitors in 2022, of which 10 lakh were domestic and 5 lakh were foreign. The peak season was during the months of February and March, when the Lathmar Holi festival was celebrated, and during the month of September, when the Radha Ashtami festival was celebrated. The average duration of stay was 2 days for domestic visitors and 4 days for foreign visitors.
- **Expenditure per visitor:** According to a survey by the Indian Institute of Tourism and Travel Management, the average expenditure per visitor in Barsana was Rs. 2000 for domestic visitors and Rs. 5000 for foreign visitors. The expenditure included accommodation, food, transportation, souvenirs, and donations. The survey also found that the visitors spent more on food and donations than on accommodation and souvenirs.
- **Income and employment:** According to a study by the Indian Council for Research on International Economic Relations, the income and employment generated by the tourism and pilgrimage activities in Barsana was Rs. 300 crore and 30,000 jobs in 2022. The income and employment were distributed among various sectors, such as hotels, restaurants, shops, taxis, rickshaws, guides, priests, artisans, and craftsmen. The study also found that the tourism and pilgrimage activities had a multiplier effect on the local economy, as they stimulated the demand for other goods and services, such as agriculture, dairy, and banking.
- **Funds for preservation and development:** According to a report by the Ministry of Culture, the funds received for the preservation and development of the heritage and infrastructure of Barsana was Rs. 50 crore in 2022. The funds were used for various purposes, such as restoration and renovation of the temples, construction and maintenance of roads, bridges, and parking facilities, installation and improvement of water, electricity, and sanitation systems, and

promotion and marketing of the town as a tourist destination. The funds were sourced from various agencies, such as the central and state governments, the Archaeological Survey of India, the World Heritage Fund, and the private sector.

the Barsana temples have a significant economic contribution to the local economy, as they generate income and employment, stimulate demand and supply, and attract funds for The local population provides accommodation transeport facilities for the visitors, such as hotels, guest houses, ashrams, and dharamshalas. The accommodation options range from budget to luxury, depending on the preferences and needs of the tourists. The local population earns income from the rent, service, and maintenance charges of the accommodation facilities.

The local population of Barsana, a town in Uttar Pradesh, India, generates income from various sources, mainly related to the tourism and pilgrimage activities that take place in the town. The town is famous for its temples dedicated to Radha Rani, the consort of Lord Krishna, who is believed to have been born and raised in Barsana. The town attracts a large number of pilgrims and tourists throughout the year, especially during the festivals of Lathmar Holi and Radha Ashtami, which celebrate the birth and union of the divine couple.

COMMUNITY DEVELOPMENT

The presence of the temples has influenced community development in Barsana in various ways, such as:

- The temples have fostered a sense of spiritual and religious guidance for the people of Barsana, who follow the teachings and traditions of Radha and Krishna. The temples also provide opportunities for social service and charity, as they offer food, shelter, and education to the needy and the pilgrims.
- The temples have enhanced the cultural and artistic awareness and identity of the town, as they showcase and share the rich and vibrant culture, art, and music of Barsana with the visitors and the world. The temples also inspire the people to engage in various forms of art and culture, such as poetry, dance, drama, and music, which reflect the love and devotion of Radha and Krishna.
- The temples have boosted the economy and livelihood of the town, as they attract a large number of pilgrims and tourists throughout the year, especially during the festivals of Lathmar Holi and Radha Ashtami. The tourists and pilgrims spend money on accommodation, food, transportation, and souvenirs, which generate income and employment for the local people. The town also receives funds from the government and private agencies for the preservation and development of the heritage and infrastructure of the town. the presence of the temples has influenced community development in Barsana in various ways,

which have improved the quality of life and well-being of the town and its people.

CHALLENGES AND CONCERNS

Some of the challenges or issues arising from the socio-economic impact of the Barsana temples are:

- Environmental and social problems: The influx of pilgrims and tourists causes environmental and social problems, such as pollution, congestion, noise, waste, and overcrowding, which affect the quality of life and health of the town and its people. The town also faces challenges in managing the resources and facilities to cater to the large number of visitors.
- Security and safety issues: The influx of pilgrims and tourists poses a threat to the security and safety of the town and its people, as it increases the risk of accidents, crimes, conflicts, and violence. The town also has to deal with the issues of vandalism, theft, and encroachment of the temples and other holy places.
- Cultural and religious authenticity and diversity: The influx of pilgrims and tourists creates a pressure on the cultural and religious authenticity and diversity of the town, as it may lead to the commodification, commercialization, and homogenization of the traditions and values of the town. The town also has to cope with the influence and interference of the external forces and interests that may affect the identity and autonomy of the town.

POLICY IMPLICATIONS

Sustainable development practices are the actions and measures that aim to achieve economic, social, and environmental goals without compromising the needs of future generations. Sustainable development practices are important for religious tourism, as they can help to preserve the heritage, culture, and values of the religious sites, as well as to enhance the well-being and quality of life of the local communities and the visitors.

Some sustainable development works are being done for religious tourism which are as follows:

- Construction work of refreshment plant for the travelers on the land of Horticulture department near Radha Rani Temple Barsana. The approval of which was taken by MATHURA VRANDAVAN DEVELOPMENT AUTHORITY, MATHURA in December 2018. The amount sanctioned for this scheme was Rs 137.38 lakh.
- Second work of development is construction work of passenger convenience center and resting place adjacent to Govardhan Den in Barsana. Electrical and

other miscellaneous works under the above work. The approval of which was taken by MATHURA VRANDAVAN DEVELOPMENT AUTHORITY, MATHURA in October 2018. The amount sanctioned for this scheme was Rs 416.19 lakh.

- Another scheme of development is Lighting work on the approach road of Radha Rani Temple in Barsana. The approval of which was taken by MATHURA VRANDAVAN DEVELOPMENT AUTHORITY, MATHURA in December 2018. The amount sanctioned for this scheme was Rs 26.22 lakh.

Some of the sustainable development practices that can be considered for religious tourism are:

- Implementing waste management and recycling systems, such as installing bins, composting units, and biogas plants, to reduce pollution and generate energy.
- Promoting green and sustainable practices, such as using renewable energy sources, encouraging public transportation and cycling, and planting trees and gardens, to conserve natural resources and enhance the aesthetic appeal of the religious sites.
- Regulating the number and timing of visitors, such as introducing quotas, tickets, and reservations, to avoid congestion and overcrowding.
- Enhancing the capacity and quality of the facilities and services, such as improving the roads, bridges, parking, water, electricity, and sanitation systems.
- Respecting and promoting the traditions and values of the religious sites, such as ensuring that the religious rituals and activities are performed according to the customs and beliefs of the local communities, and that the religious festivals and events are conducted in a respectful and dignified manner.

CONCLUSION

Here is a possible summarization of the key findings:

- The Barsana temples are historical and religious sites that are dedicated to Radha Rani, the consort of Lord Krishna, who is believed to have been born and raised in Barsana. The temples are not only places of worship, but also places of culture, art, and festivals, that reflect the divine love between Radha and Krishna.
- The Barsana temples have a significant socio-economic impact on the town and its people, as they influence their faith, culture, identity, and economy. The temples attract a large number of pilgrims and tourists throughout the year, especially during the festivals of Lathmar Holi and Radha Ashtami, which celebrate the birth and union of the divine couple. The tourists and pilgrims

spend money on accommodation, food, transportation, and souvenirs, which generate income and employment for the local people. The town also receives funds from the government and private agencies for the preservation and development of the heritage and infrastructure of the town.

- The Barsana temples also face some challenges and issues arising from the socio-economic impact, such as environmental and social problems, security and safety issues, and cultural and religious authenticity and diversity. These challenges and issues require careful planning and management to balance the benefits and costs of the tourism and pilgrimage activities.
- The Barsana temples also support some social initiatives and projects, such as offering food, shelter, and education to the needy and the pilgrims, promoting the preservation and development of the heritage and infrastructure of the town, and fostering the cultural and artistic awareness and identity of the town. These initiatives and projects contribute to the community development and well-being of the town and its people.
- The Barsana temples also adopt some sustainable development practices, such as implementing waste management and recycling systems, promoting green and sustainable practices, regulating the number and timing of visitors, enhancing the capacity and quality of the facilities and services, respecting and promoting the traditions and values of the town, and encouraging and supporting the participation and involvement of the local people. These practices help to preserve the heritage, culture, and values of the religious sites, as well as to enhance the well-being and quality of life of the local communities and the visitors.
- The Barsana temples have some unique features and common patterns that distinguish them from other religious sites or pilgrimage destinations in Uttar Pradesh, such as being dedicated to Radha Rani, the consort of Lord Krishna, being the symbols of the divine love between Radha and Krishna, and being situated on the hills that are associated with the legends and stories of the divine couple.

These are some of the key findings about the Barsana temples and their impact on the town and its people. The temples are the pride and joy of Barsana, which is known as the home of Radha Rani.

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Comprehensive Examination of the Educational Situation of Women in Uttar Pradesh, with a Special Emphasis on Women's Empowerment and Progress.

Abstract

Education for women ensures that human progress will be improved and that future generations will be taught properly. Education is a key component of women's empowerment since it empowers them to respond to challenges, challenge expectations of how they should look, and fundamentally change their way of life. Indian women's education has been a notable diversion for the government as well as the general public, which was educated that women can play a crucial role in the advancement of the country. Education is a key component of women's empowerment since it gives them the ability to respond to challenges, defy expectations, and transform their lives. India is prepared to become a superpower by launching a new education policy in order to ensure that we can't ignore the importance of education and development in relation to women's empowerment. In rural areas, the advancement of women's education is moderate. This indicates illiterate, helpless, mistreated, and in large numbers, the women of our State. The best tool for improving a woman's position in the public eye is education from the perspective of training and development. This study examines the problem of women's educational access in Uttar Pradesh. Drawing from earlier writing and a variety of perspectives on women's education in Uttar Pradesh, the paper gives a map of the state of education for women and highlights some of the issues and hurdles to women's education.

Keywords: Women, Education, Empowerment, Development, Economic Development.

I. Introduction

According to census 2011, Uttar Pradesh's literacy rate was 68.64 % out of which the female literacy stood at 59.61 % only. In India, women's education plays a crucial role in the nation's overall progress. Not only does it aid in the improvement of half of the human resources, but also helps people feel happier both inside and outside of the home. Not only do educated women prefer to accelerate the education of their young female children, but they are also better able to guide all of their children. Additionally, educated women can contribute to population growth and a decrease in the infant mortality rate. First and first, we must strengthen our states if we want to boost the progress of our nation. For the state's development and progress, Uttar Pradesh must increase its female literacy rate, which is currently not very high.

II. Historical paradigm of women Education in India and Uttar Pradesh

Up until the establishment of British rule, Hindu-Buddhist-Muslim education was centred on Sanskrit and included knowledge from the Vedic to Gupta periods as well as later Pali corpus of knowledge and a great bank of ancient to mediaeval learning in Persian/Arabic languages. However, the system deteriorated as a result of missing the developments that occurred in Europe during and after the Renaissance, leaving significant educational gaps. The British government took steps to make liberal, universal education accessible in this region through a network of schools through university system based on the European model.

But it was the efforts of educationalists like Sir Syed Ahmad Khan and Pandit Madan Mohan Malviya, who supported British initiatives to promote study, that led to a true turning point.

Additionally offering technological knowledge in schools is skill shop technology.

Post Independence:

After its independence, the state of Uttar Pradesh continued to invest over time in all areas of education and has made tremendous progress in eradicating general educational illiteracy and backwardness. The growth in the general literacy rate is the result of consistent, multifaceted efforts made by the state government to enrol and keep children in school, especially those from underprivileged groups; to successfully implement adult education programmes; and to create higher education centres. As a result, the U.P. is one of the first few States to successfully execute the policy of education for all. The following demonstrates the progressive development:

The literacy rate in the U.P. increased from 28% in 1981 to 42% in 1991. Adult literacy rates (the percentage of people who are literate and above the age of 15) increased by 11% over a seven-year period, from 38% in 1991 to 49% in 1998. However, the gap between male and female literacy remained wide: although male literacy was 56% and female literacy 25% in 1991, survey estimates for 1999 show that male literacy was 73% and female literacy 43%. (NFHS II).

Only 50% of literate males and 40% of literate girls were able to finish the eight-year school cycle in 1992–1993. (the primary and middle stages). Bihar may be the only state in India with a lower educational level than Uttar Pradesh.

According to census 2011, **Uttar Pradesh's** literacy rate was 68.64 % out of which the female literacy stood at 59.61 % only.

III. Significance of Women Education in Uttar Pradesh

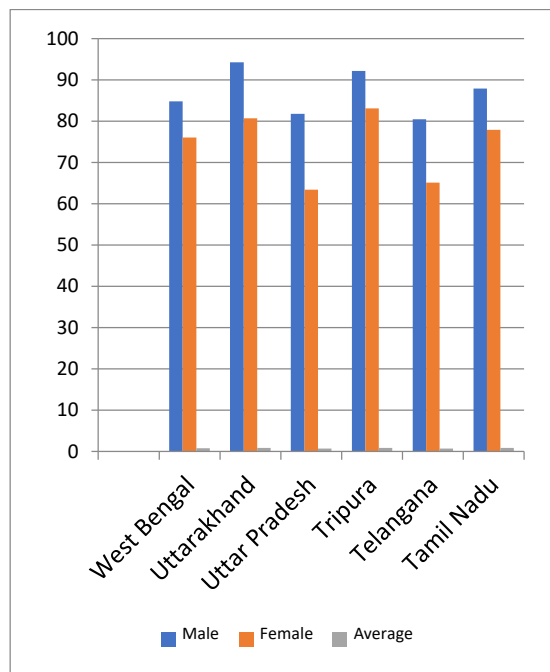
Enhancing the extra-terrestrial, political, social, academic, sexual orientation, or financial prowess of particular women or groups is referred to as "women empowerment." In U.P, women's empowerment is heavily influenced by a wide range of variables, including age, educational background, social class, and topographical region (urban vs. rural). At the federal, state, and local (Panchayat) levels, there are strategies for empowering women in a variety of areas, such as health, education, financial opportunity, sexual orientation-based violence, and political interest. Nevertheless, there is a sizable gap at the group level between strategy advancements and actual practise

Uttar Pradesh Working Population - Census 2011

In Uttar Pradesh out of total population, 65,814,715 were engaged in work activities. 67.8% of workers describe their work as Main Work (Employment or Earning more than 6 Months) while 32.2% were involved in Marginal activity providing livelihood for less than 6 months. Of 65,814,715 workers engaged in Main Work, 15,576,415 were cultivators (owner or co-owner) while 9,749,915 were Agricultural labourers.

Type	Total	Male	Female
Main Workers	44,635,492	37,420,299	7,215,193
Cultivators	15,576,415	13,727,429	1,848,986
Agriculture Labourer	9,749,915	7,777,577	1,972,338
Household Industries	2,409,436	1,669,471	739,965
Other Workers	16,899,726	14,245,822	2,653,904
Marginal Workers	21,179,223	12,426,463	8,752,760
Non Working	133,997,626	54,633,748	79,363,878

Source- Uttar Pradesh Census 2011



IV. Status of women empowerment

Women's empowerment and gender development are now recognised as being essential to inclusive growth strategies and the general economic health of a state or nation. Unsettling trends, however, show that Uttar Pradesh lags significantly behind other Indian states in terms of female development. In order to attain the desired goal of gender development, it is imperative to rigidly implement women-specific acts, programmes, and schemes in a comprehensive manner. To do this, a gender budgeting approach must be used.

V. Obstacles to Women's Empowerment

The main issues that women in the past and, to some extent, in the present confronted were:

1. Gender inequality
2. Education Deficit
3. Infanticide by women
4. Budgetary Limitations
5. Duty to one's family
6. Low Movement
7. Limited Risk Tolerance
8. Low need for success
9. Lack of desire to achieve the goal
10. Social standing

11. Dowry Child marriage is still practiced, as is marriage within the same caste.
12. Violence Against Women (nearly every day rapes, kicks, killings, subduing, and humiliations).

VI. Objectives of the Study

- To investigate the current state and future prospects of women's education and empowerment in Uttar Pradesh.
- To investigate the importance of empowering and educating women in Uttar Pradesh.
- To investigate the factors impacting women's economic empowerment.
- To identify the barriers to women's empowerment, with a special focus on education.

VII. Literature Review

Bruke, F. (1983) has made an effort to determine how literate the scheduled castes are geographically in Uttar Pradesh. She had seen differences in literacy between the district's rural and urban populations as well as between men and women. Eventually, she came to the conclusion that backwardness and literacy are highly associated, and literacy and socioeconomic progress go hand in hand.

Mathur, B.B. (1988) In his study of the "spatial structure of literacy in Uttar Pradesh," he discovered a substantial gap in the amount of rural literacy. He discovered that north hilly area, Ganga-Yamuna doab and some section of While the majority of the eastern plain and the southern plateaus exhibit low literacy rates, the eastern plain exhibits high rates of rural literacy.

Singh, U. K. and Singh, A. K. (2005) have examined the degree of literacy among the Tharus in the studied block, Mihinpurwa, in the Bahraich district of Uttar Pradesh (India), and came to the conclusion that they have very little literacy. Only the primary step of reading was being done at the time. The study also shows that the literacy rate is higher in the village near the town of Mihinpurwa than in the hamlet in the outlying areas. Poverty is the biggest contributor to low literacy.

Tripathi, R. S. (1993) has performed a study on "Effect of urbanization on literacy and concentration of nonagricultural employees in rural regions of Bundelkhand (Uttar Pradesh)" and studied the literacy and concentration of nonagricultural workers in rural areas of Bundelkhand with special reference to urbanization. He came to the conclusion that higher levels of urbanization result in higher levels of literacy in rural regions, and vice versa.

Mayoux (2001) has suggested a new an approach named "Gender Mainstreaming for Empowerment" This strategy is mostly recommended for federal agencies or funders. The major goal of this strategy is to give both men and women equitable access to all

microfinance services. Microfinance should be used to empower women in an appropriate and equitable manner.

VIII. Analysis and Interpretation of Data

The percentage score that depicts the rates of female literacy in various districts was converted from the raw score of literate females. A categorization of total female literacy was made on the basis of these findings by creating five categories of very high, high, average (medium), low, and very low female literacy rates. During data tabulation, two districts with female literacy rates of 90.23% and 37.07%, respectively, were identified. The range of female literacy rates has been classified as follows for ease of analysis. Extremely high (65.51–81.42%) High (60.51–65.50%) Average (55.51–60.50%) Low (50.51–55.50%) Extremely low (37.07–50.50%).

IX. Data Source and Methodology

The research used secondary data. The government's National Sample Survey Organization's census reports are the primary source of the data (NSSO). Registrar of India, etc.

On the basis of many metrics, including female literacy, the position of women in Uttar Pradesh is compared to that of the rest of India. Female workforce participation rate (FWPR). Female Infant Mortality, Age at Marriage, Indicators of women's empowerment include the gross enrollment ratio, dropout rates, sex ratio, age at marriage, and women's participation in decision-making. Most frequently, status is assessed using a technique that ranks states according to several variables. From best to worst performing states, rankings are given. Nonetheless, rankings are given from the poorest to the best performing states when it comes to the negative metrics, such as dropout rates, infant mortality, etc.

X. Results and Discussions

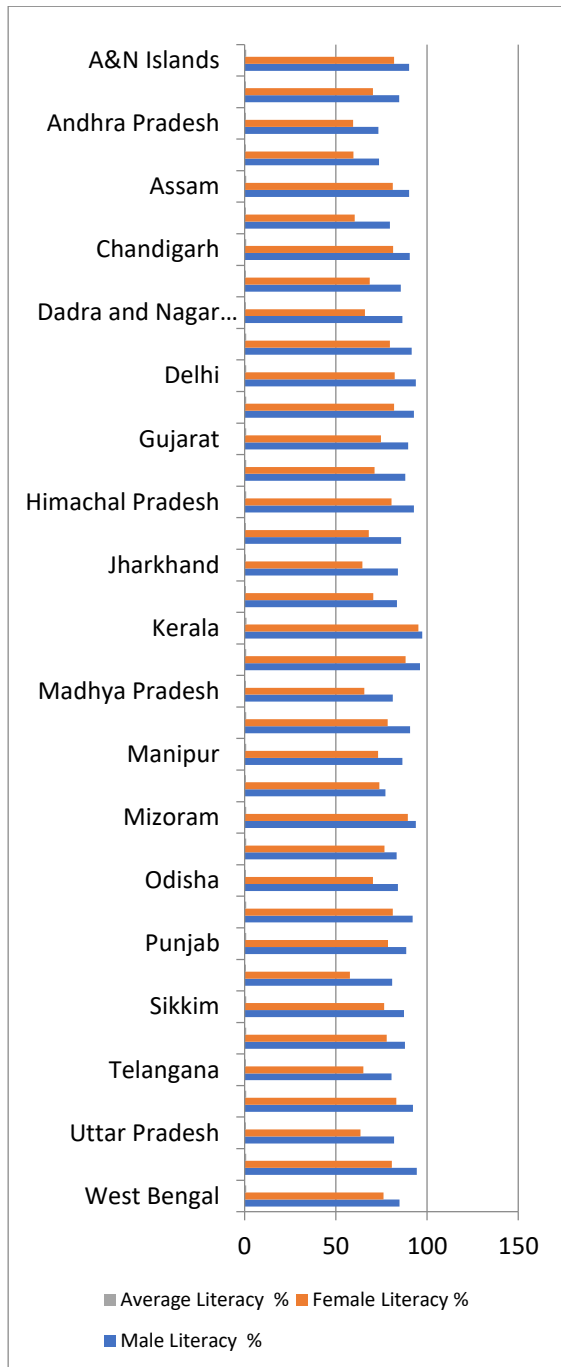
The status of Women in UTTAR PRADESH is examined on the basis of the following indicators.

Female Literacy and Gender Gap

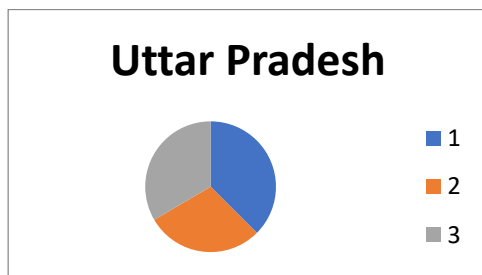
Table 1 displays the gender disparity and female literacy rates in UTTAR PRADESH compared to other states in the country. The ranking of states depicted in the table highlights that UTTAR PRADESH's female literacy rates are relatively lower, currently holding the 20th position. Although the gender literacy gap is smaller in comparison to the overall literacy rate, it still ranks 18th. The literature explores various non-economic factors that contribute to the continuation of this gender gap in literacy rates.

States & UT	Male Literacy Rate %	Female Literacy Rate %	Average Literacy Rate %
A&N Islands	90.12	81.83	85.98%
Andhra Pradesh	73.3	59.4	66.35%
Arunachal	73.70	59.56	66.63%
Assam	90.2	81.1	85.65%
Bihar	79.6	60.4	70.00%
Chhattisgarh	85.5	68.6	77.05%
Chandigarh	90.55	81.37	85.96%
Dadra and	86.47	65.94	76.21%
Daman & Diu	91.49	79.58	85.54%
Delhi	93.8	82.3	88.05%
Maharashtra	90.7	78.4	84.55%
Manipur	86.49	73.17	79.83%
Meghalaya	77.17	73.78	75.48%
Mizoram	93.72	89.4	91.56%
Nagaland	83.29	76.69	79.99%
Odisha	84	70.3	77.15%
Puducherry	92.12	81.22	86.67%
Punjab	88.5	78.5	83.50%
Goa	92.82	81.83	87.33%
Gujarat	89.6	74.7	82.15%
Haryana	88	71.2	79.60%
Himachal	92.8	80.4	86.40%
Jammu &	85.8	68	76.90%
Jharkhand	84	64.6	74.30%
Karnataka	83.4	70.5	76.95%
Kerala	97.4	95.2	96.30%
Lakshadweep	96.11	88.25	92.18%
Madhya Pradesh	81.2	65.5	73.35%
Rajasthan	80.8	57.6	69.20%
Sikkim	87.29	76.43	81.86%
Tamil Nadu	87.9	77.9	82.90%
Telangana	80.5	65.1	72.80%
Tripura	92.18	83.15	87.66%
Uttarakhand	94.3	80.7	87.50%
Uttar Pradesh	81.8	63.4	72.60%
West Bengal	84.8	76.1	80.45%
All-India	84.7	70.3	77.50%

Source: Survey by National Statistical Office (NSO). *UTs & NE States based on 2011 Census



We can see here difference between male and female literacy rate in different states in India. Survey by National Statistical Office (NSO). *UTs & NE States based on 2011 Census.



Situation of Uttar Pradesh in literacy of females.

States and Union Territories ranked according to the female work participation rate 2001 and 2011:

Sr. No.	State/ Union Territories	Female Work Participation Rate		Rank in	
		2001	2011	2001	2011
1	2	3	4	5	6
1	Himachal	43.	44.	2	1
2	Nagaland	38.	44.	7	2
3	Chhattisgarh	40	39.	3	3
4	Sikkim	38.	39.	6	4
5	Manipur	39	38.	4	5
6	Mizoram	47.	36.	1	6
7	Andhra	35.	36.	10	7
8	Arunachal	36.	35.	8	8
9	Rajasthan	33.	35.	11	9
10	Meghalaya	35.	32.	9	10
11	Madhya	33.	32.	12	11
12	Karnataka	32	31.	13	12
13	Tamil nadu	31.	31.	14	13
14	Maharashtra	30.	31.	15	14
15	Jharkhand	26.	29.	19	15
16	Orissa	24.	27.	20	16
17	Uttarakhand	27.	26.	17	17
18	D. & N.	38.	25.	5	18
19	Tripura	21.	23.	23	19
20	Gujarat	27.	23.	16	20
21	Assam	20.	22.	24	21
22	Goa	22.	21.	22	22

X (Male)	Y (Female)	Rank of X (R ₁)	Rank of Y (R ₂)	d = R ₁ - R ₂	d ²
23	Jammu &	22.	19.	21	23
24	Bihar	22.	19.	26	24
25	Kerala	15.	18.	32	25
26	West Bengal	18.	18.	28	26
27	Haryana	27.	17.	18	27
28	Andaman &	16.	17.	30	28
29	Puducherry	17.	17.	29	29
30	Uttar	16.	16.	31	30
31	Chandigarh	14.	16	33	31
32	Daman & diu	18.	14.	27	32
33	Punjab	19.	13.	25	33
34	Lakshadwee	7.3	11	35	34
35	Delhi	9.4	10.	34	35

Source: Office of the Registrar General, India

Calculation for coefficient of correlation:

The coefficient of correlation, often denoted as "r," measures the strength and direction of a linear relationship between two variables. It quantifies how well the data points approximate a straight line on a scatter plot. The coefficient of correlation ranges from -1 to +1, where:

- r = +1 indicates a perfect positive linear relationship (all data points lie on a straight line with a positive slope).
- r = -1 indicates a perfect negative linear relationship (all data points lie on a straight line with a negative slope).
- r = 0 indicates no linear relationship between the variables.

$$\text{Coefficient of correlation } r = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}$$

$$r = 1 - \frac{6 \cdot 16}{7(49 - 1)}$$

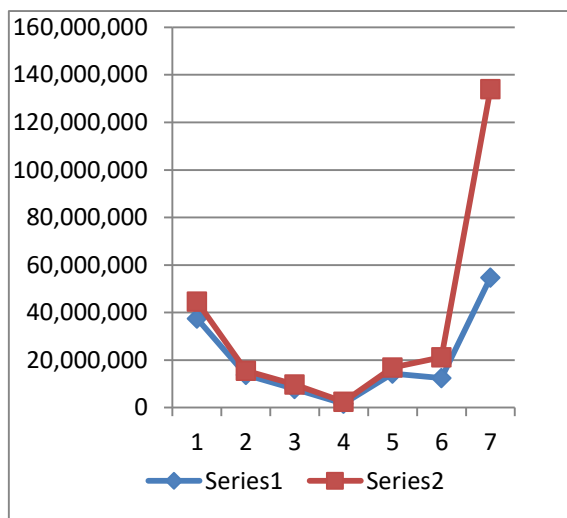
$$r = 1 - \frac{96}{336}$$

$$r = 1 - 0.2857$$

$$r = 0.71 \text{ (+ve)}$$

So, we can say that there is significant correlation between male and female education. Hence, women education is increasing in correspondence to male education.

3,74,20,299	72,15,193	2	3	-1	1
1,37,27,429	18,48,986	4	6	-2	4
77,77,577	19,72,338	6	5	1	1
16,69,471	7,39,965	7	7	0	0
1,42,45,822	26,53,904	3	4	-1	1
1,24,26,463	87,52,760	5	2	3	9
5,46,33,748	7,93,63,878	1	1	0	0
					$\sum d^2 = 16$



Gross Enrolment Ratio (GER) calculates the proportion of eligible students between the ages of 18 and who are enrolled in higher education.

Overall, from 24.1 percent in 2016–17 to 27.3 percent in 2020–21, the GER for higher education has grown. This encouraging trend shows that more students are enrolling in higher education. The data also reveals a sizable difference in GER between men and women, with women consistently having lower GER than men throughout all years.

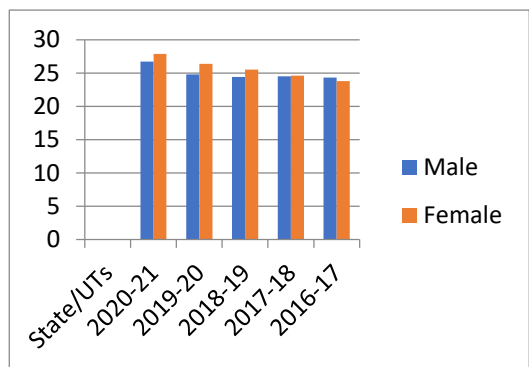
The general trend of rising GER is encouraging, but the continued socioeconomic and gender inequalities in access to higher education raises some serious questions. To guarantee that all students, regardless of gender or social background, have equal opportunity to pursue higher education, policymakers must address the underlying causes of these discrepancies and adopt the necessary policies.

Table -2 Gross enrollment ratio in India 21-22

States / UTs	Gross Enrolment Ratio at Higher Education level (18 to 23 years) 2016-17 to 2020-21								
	All			Scheduled Castes			Scheduled Tribes		
	M	F	Both	M	F	Both	M	F	Both
2020-21	26.7	27.9	27.3	22.4	23.9	23.1	18.8	19.1	18.9

2019-20	24.8	26.4	25.6	21.5	23.2	22.3	17.0	17.0
2018-19	24.4	25.5	24.9	21.4	22.8	22.0	16.7	16.4
2017-18	24.5	24.6	24.6	21.0	21.0	21.0	16.0	15.3
2016-17	24.3	23.8	24.1	20.8	19.9	20.3	15.8	14.8

Source: AIHES Ministry of Education(Different years).



Here we can see the women’s growth of Higher Education in India.

Additionally, the GER for SCs and STs is lower than the overall national average. However, from 2016–17 to 2020–21, the GER for SC and ST girls significantly improved. In contrast to the national average of 27.3 percent, the GER for SCs and STs in 2020–21 was 23.1 and 18.9 percent, respectively. On the other hand, the GER for SC girls was 13.9 percent in 2016–17, but it rose to 19.1 percent by 2020–21. Despite progress, GER shows that students from underrepresented groups still encounter obstacles while trying to enrol in higher education.

The general trend of rising GER is encouraging, but the continued socioeconomic and gender inequalities in access to higher education raises some serious questions. To guarantee that all students, regardless of gender or social background, have equal opportunity to pursue higher education, policymakers must address the underlying causes of these discrepancies and adopt the necessary policies.

Rate of Female Employment (FWPR)

In compared to the rest of India, the state of Uttar Pradesh's female workforce participation percentage is appalling. Facts show that Uttar Pradesh has one of the lowest female work participation rates (FWPR), not even ranking among the top 23 states. Therefore, Uttar Pradesh has the biggest gender discrepancies in terms of employment. FWPR in Uttar Pradesh is the lowest. The community doesn't accept or favour women employees since they have lower levels of literacy and less influence over decisions.

The sex ratio

The declining sex ratio can be attributed to factors such as son preference and gender bias against females in the allocation of resources for food and health care. According to census 2011 statistics, the 22nd worst condition is revealed by the low percentage of girls in the states of Uttar Pradesh, Rajasthan, Punjab, and Haryana.

XI. Conclusion

It is evident that, compared to the rest of India, the position of women in the states of Uttar Pradesh is not as excellent. However, there are perplexing conflicts within each stage. The lower sex ratio in Uttar Pradesh is just one factor that contributes to the underrepresentation of women in the workforce. There is no need for water, healthcare, or employment—only gender. Power, control, and protection from domestic abuse are also requirements for gender. Equal, a living wage, and bodily autonomy. The choice of what to prepare for their own healthcare.

Numerous data points show that in Uttar Pradesh, women have extremely little freedom of movement, self-control, and power to influence change. The advancement of the economy does not ensure gender parity. Only a shift in people's attitudes and gender-conscious policies from the policy makers would be helpful in this area. Even at the district level, a thorough analysis of women's status is required to have the correct data for efficient planning and policy implementation.

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INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY & RESEARCH PRACTICE

Abstracts

ICMRP 2023

**A STUDY ON THE EFFECT OF CHLORPYRIFOS ON
THE FISH *Oreochromis mossambicus*.**

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ABSTRACT

Oreochromis mossambicus (Tilapia) an exotic fish introduced in India, is highly tolerant to variable water quality. In a detailed survey of fish along the whole stretch of the river Yamuna, *Oreochromis mossambicus* is reported as the fish abundantly available in the river Yamuna in Agra and it tolerates high pollution levels. Chlorpyrifos the pesticide used in agriculture to kill pests that damage crop is reported in water resources and it harms the aquatic non-target organisms like fish. In this study, Static bioassays were performed to determine toxicity of chlorpyrifos on *Oreochromis mossambicus* at various concentrations at various time intervals. Lc50 value and Safe concentration of chlorpyrifos for *Oreochromis mossambicus* calculated and its impact on liver of the fish studied by standard paraffin technique and presented.

Determination of Total Phenolic and Flavonoid Contents of *Aristolochia bracteolata* Lam seeds

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Abstract:

Aristolochia bracteolata Lam, also known as 'worm killer' is an important Indian traditional medicinal plant belonging to the family: Aristolochiaceae, genus: Aristolochia – one of the large plant genera. The preliminary phytochemical screening was performed with the help of prescribed standard methods, which reflected the occurrence of secondary plant metabolites such as alkaloids, tannins, flavonoids, saponins, and terpenoids mostly in the ethanolic extracts. In this study, the determination of total phenolic and flavonoid contents of three samples, Ethanolic (EOE), Chloroform (CHE), and Ethyl acetate (EAE) extracts of *Aristolochia bracteolata* Lam seeds were used. Determination of total phenolic content (TPC) was found as 96.645, 89.195, and 80,130 µg /mg (calculated as Gallic acid equivalents GAE/g). The total flavonoid content (TFC) was found as 53.893, 57.680, and 49,893 µg /gram respectively (calculated as Quercetin equivalents GE/g). The above results showed that the TPC and TFC higher quantity was found in the methanolic extract at 96.645 µg /gram and in chloroform extract at 57.680 µg /gram respectively. The seeds of the *Aristolochia bracteolata* Lam have a good source of phenolic and flavonoid content, however, further isolation of bioactive compounds and chemical characterization is required to be explored.

KEYWORDS: Aristalochia Species, Flavonoids, Phenols, Gallic acid, Quercetin

Phytoplankton and Zooplankton Diversity and Water Quality Assessment of Thakurani Ghat in Mathura

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Abstract :

The present study focuses on the Phytoplankton and Zooplankton Diversity and Water quality assessment of thakurani ghat in mathura the physiochemical and biological parameters, with due consideration to the Planktonic species. The various freshwater ecosystem include, rivers, ponds, etc. Now a day, the significant increase in population as a result of the amount of disposal has created a major problem for its disposal. Phytoplankton is a type of microscopic plankton capable of photosynthesis that found an essential element of the aquatic ecosystem, seas, and freshwater, and pond water ecosystem. Phytoplankton can be range in size and shape, and they are photosynthesizing the autotrophic organism, they live in the open water of sunlight. Although each organism can be seen as a microscopic, adequate number, Phytoplankton can be seen as colored patches of water, or two streams meet, due to the presence of chlorophyll. The Plankton assessment (qualitative) was associated with the physicochemical parameters like pH, TDS, EC, Calcium, Chlorides, Dissolved Oxygen, Phosphates, Nitrates, Bromides and Nitrites. Proper biological and chemical treatments of domestic sewage need to be done before discharge to the ponds for long run sustainable resources. The various freshwater ecosystems include, rivers, ponds, etc. Now a days, the significant increase in population as a result of the amount of disposal has created a major problem for its disposal.

Keywords - Phytoplankton, Zooplankton, Physicochemical parameters.

An Ethno Botanical Evaluation of Medicinal Plant with Anti-cancerous Properties Dayalbagh region, Agra

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Abstract

Medicinal plants are used for treatment of ailments throughout rural and urban areas of the world. Such use of plants varies from one region to another and is measured using quantitative techniques. The traditional knowledge of medicinal plants approaches explores various folk and traditional medicinal plants. Ethno botanical use of plant as potent too for cure more over several diseases problem such as cancer, tumours, diabetes, leprosy, skin disease, malaria, paralysis etc. All in these cancers may effect at all age, even foetus. Cancer cause about 13% of all human deaths. Natural products have traditionally accepted as remedies for many disease in the plant products, the combination of secondary metabolites and other biological active compound are potential anticancer drugs that cause either direct cytotoxic on cancer cells.

Keywords: Ailments, Anti-cancerous, Ethno-botany, Secondary metabolite, Medicinal plant.

Medicinal Plants' Biological Activity and Phytochemistry in the Healing of Wounds: A Summary of Recent Research.

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Abstract

The accurate care of wounds is a significant problem, and wound healing is a complex process. Because of the adverse effects of modern medicine and the decreased cost of herbal products, natural herbal therapies have become essential for the management of skin problems and infections. An overview of recent *in vitro*, *in vivo*, and clinical research on popular herbal remedies, their phytochemical components, and novel formulations for wound care is the goal of this study. Studies indicate that several herbal remedies exhibit significant efficacy in wound care, with the component flavonoids, alkaloids, saponins, and phenolic chemicals being responsible for this therapeutic effect. These phytochemicals have a variety of mechanisms via which they can function at different stages of the process, such as angiogenic, collagen synthesis-stimulating, anti-inflammatory, and antioxidant actions. The use of nanotechnology systems to apply natural substances has the potential to significantly increase the effectiveness of wound treatments.

Keywords- Phytochemical, Wound healing, Therapeutic, Herbal.

Isolation of key genes involved in the middle and downstream pathway of aroma biosynthesis in Vetiver Grass

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Abstract

Vetiver (*Chrysopogon zizanioides*), is a densely tufted, perennial, scented, eco-friendly grass of the family Poaceae, growing in tropical and subtropical countries and is described to be native to India and cultivated in more than 70 countries. The roots of vetiver grass are large and fibrous, forming a tufted and very strong root system that extends 2-3 meters below the surface. Root tissues contain oil-producing cells, responsible for their characteristic aroma. Terpenoids are economically and ecologically important compounds, and they are aroma compounds in vetiver essential oil. The essential oil of vetiver is viscous, with colors ranging from amber to olive and having typical long-lasting sweet woody odors like grapefruit, green, and rhubarb undertones. Sesquiterpenoid molecules, the most common class of terpenoids in vetiver oil, are utilized as raw material in perfumery. The middle and downstream pathways of volatile terpene biosynthesis in vetiver roots involve the Terpene synthases (TPSs), Trans-prenyltransferases (TPTs), and NUDX1. In the transcriptome of Vetiver, we identified some full-length CzTPSs, CzNUDX, and CzTPTs.

Keywords: Terpenoids, Oil-producing cells, Aroma, and Trans-prenyltransferases.

Euphorbia Species: A potential source of antidiabetic drug discovery

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ABSTRACT

The Euphorbia Species, is a large and diverse group of plants that includes herbs, shrubs, trees, and succulents. It is observed that the plants in this family have been used in traditionally in the management of diabetes mellitus, an oldest chronic metabolic disorder characterized by high blood glucose levels. The aim of this study was to carry out meta-analysis the database for compiling antidiabetic potential of some commonly available Euphorbia Species plants found in our territory, such as *Euphorbia hirta*, *Euphorbia neriifolia*, *Euphorbia millii*, *Euphorbia pulcherrima*, *Euphorbia fithymaloides* and *Euphorbia marginata*.

The pharmacological activities of the selected plants were compiled based on their phytochemical constituents, such as alkaloids, flavonoids, terpenoids, phenolic compounds, steroids, and saponins. The correlation between phytochemical constituents and their effects on carbohydrate metabolism, insulin secretion, glucose uptake, and pancreatic β -cell protection, were also executed.

KEY WORDS: Euphorbia, Diabetes mellitus, Insulin

Mitigation of Environmental Pollutants through Bioremediation

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Abstract

Today's fast and demanding life has brought industrialization and urbanisation to a boom. Though it has brought immense development but its also curse for environment as the effluents from industries accumulate and contaminates the environment. Though there are many physical means to clean the environment but bioremediation is the natural process of Mother Nature to clean itself. It is widely accepted as it is environment and eco-friendly, cost effective, have higher applicability and does not leave behind any excavates in nature. Bioremediation means the use of living system like microbes-fungi(mycoremediation) and plants(phytoremediation) to clean the environment. Bioremediation can help to reduce and remove the pollutants we produce, to provide cleaner environment in the form of water, air and healthy soils for future generations. Bioremediation uses microorganisms to degrade organic contaminants in soil, waste water, sludge, and solids. The microorganisms break down contaminants by using them as an energy source. To stimulate and enhance remediation Biostimulation, Bioaugmentation and Bioventing techniques are applied. This benefits individual human health, as well as overall environmental systems. Phytoremediation involves the use of plants to extract and remove pollutants or lower their toxicity in environment. Plants have the abilities to absorb toxic compounds from the soil even at low concentrations through their root system, establish rhizosphere ecosystem to detoxify heavy metals and other pollutants thereby reclaiming the polluted soil and stabilizing soil fertility. Phytoremediation involves phytodegradation, phytoextraction, rhizofiltration, phytovolatilization and phytostabilization to degrade, remove, or immobilize the pollutants. Diverse plants remediate different pollutants at different rates through one or multiple mechanisms. Microbial enhanced phytoremediation enhances remediation manifold times. Mycorrhiza, PGPR (Plant Growth Promoting Rhizobacteria) and PGPE (Plant Growth Promoting Endophytic bacteria) has the potential to increase phytoremediation efficiency by increasing plant growth and biomass and improving plant resistance to pathogens.

Keywords: Bioremediation, Phytoremediation, Mycoremediation, Biostimulation, Bioaugmentation, Phytoextraction

Physical and chemical properties as well as the lake's level of pollution: The function of macrophytes and phytoplankton in biomonitoring and phytoremediation of heavy metals in Jaipur, Rajasthan, India.

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Abstract

For most locals and even tourists, Jaipur's lakes are the only supply of water. Such a study, which focuses on toxic metal contamination and the lake's current nutritional quality and its multiplication by algae and macrophytes, is crucial given the history of the lake's utility and significance on a national scale. According to studies, the abundance of nutrients in lake water promotes the establishment of numerous aquatic macrophytes and algal blooms. In addition, metals including Cr, Cu, Fe, Mn, Ni, Pb, and Zn are found in contaminated water.

Some of them, like Fe, Pb, and Ni, had concentrations over the suggested upper limit of what was considered tolerable. These metals were also identified in high concentration in the sediments found in lakes. The concentration of metals in the lake's distinct components fluctuated significantly depending on the season. Significant amounts of metals were gathered by the plants and algae that grew there, and their water roots were more effective. These plants' high capacity to remove metals may be important for biomonitoring research, and they may also be a helpful phytoremediation technique for improving the quality of the water by eliminating floating and submerged biomass that lives in the lake's littoral zone. The majority of the contamination in the dried-up land surrounding these lakes appears to come from anthropogenic sources and farming.

Keywords: Lakes, Pollution, Heavy metals, biomonitoring, phytoremediation.

**THE PHYSICO-CHEMICAL PROPERTIES, SEASONAL VARIATION, AND WATER QUALITY
ASSESSMENT OF TISGAON DAM, DISTRICT AURANGABAD, INDIA.**

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Abstract:

Water is an essential natural resource for all living organisms, ecosystems, human health, food production, and economic development. Water quality has investigated water use's chemical, physical, and biological properties for human consumption, agriculture, fish farming, domestic service, and industrial use. The present study deals with the Physico-Chemical properties, seasonal variation, correlation coefficient, cluster analysis, and water quality assessment of Tisgaon dam, Aurangabad [M.S] India analyzed from January - December 2011. The results indicated that the condition of dam in different seasons showed fluctuations in Physico-chemical parameters; with the help of this understanding, the water quality of dam and the correlation coefficient shows a highly significant positive and negative relationship ($p < 0.01$) and also a significant positive and negative relationship ($p < 0.05$) these parameters are correlated with the different seasons. Correlation coefficients are used to measure the strength of the association between parameters. Cluster analysis is used to classify variables based on their similarity level.

Keywords: Physico-chemical properties, seasonal variations, water quality, correlation coefficient, Hierarchical cluster analysis, and Tisgaon dam.

Diversity of Terpenoid Compounds in Various Parts of *Cyperus scariosus*

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Abstract

The *Cyperus scariosus* plant, also known as Nagarmotha, is a member of the Cyperaceae family. The plant is commonly found in India, particularly in the wet regions of West Bengal, Uttar Pradesh, and the eastern and southern regions. Rhizome has a folkloric medicinal value as cordial, desiccant, diaphoretic, diuretic, emmenagogue, tonic, diarrhea, epilepsy, gonorrhoea, syphilis and liver damage. The qualitative phytochemical study of this plant extract indicates the presence of organic and inorganic substances such as sodium, calcium, potassium and tannin, steroids, terpenoids, phenolics and resin respectively. *Cyperus scariosus* has several major and minor chemical constituents, many of which may show pharmacological activities, but the main active components appear to be the sesquiterpenes. These are aromatic, spicy tasting molecules among the main terpenes identified in *Cyperus* rhizomes. The results of comparing the various major compounds found in the four parts (Root, Rhizome, Leaf, Stem) of *Cyperus scariosus*. GC-MS Analysis of the four different portions of the *Cyperus scariosus* reveals that the rhizome has a diversified number of volatile compounds. In contrast, the root, stem and leaf have very few volatile compounds. Terpenes like Copaene, Cyperene, β Maaliene, Rotindene, and Caryophyllene were found to be common but Cyperene is the most important compound with a higher concentration.

Keywords: Cyperene, *Cyperus scariosus*, Rhizome, Nagarmotha, Terpenes

Irradiated Sodium alginate is a potent elicitor and reliever of growth and physiological performance, production of essential oil, and active constituents of *Cymbopogon flexuosus* (Steud.), under high temperature induced stress.

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¹Department of Botany, Faculty of Life Sciences, Aligarh Muslim University, Aligarh, India ²Botany Section, Women's College, Aligarh Muslim University, Aligarh, India

Abstract

Aim: This study aimed to investigate how radiation-processed natural polysaccharide Sodium alginate (ISA) affects the growth, physiological performance, essential oil production, and active constituents of *Cymbopogon flexuosus* (Steud.) when subjected to stress induced by high temperatures.

Methods: A pot experiment was conducted in order to investigate the influence of foliar-spray treatments of γ -irradiated sodium alginate on the growth and physiological performance, production of essential oil, and active constituents of *Cymbopogon flexuosus* (Steud.), grown under different (control, 40°C, and 45°C) temperature regimes.

Results: Temperature stress at 40°C and 45°C, regardless of the growth phases, had a negative effect on the majority of the examined features. Foliar spray of ISA significantly enhanced the geraniol dehydrogenase (GeDH) activity by 15.50% and 31% and the essential oil (EO) content by 30.33% and 22.46% at 40°C and 45°C temperatures, respectively.

Conclusion: The obtained outcomes strengthen the effectiveness of ISA-induced protection in *Cymbopogon flexuosus* when exposed to heat stress. As a result, this method could be proposed as an innovative solution to alleviate high temperature stress in lemongrass varieties and might have applications in other agricultural crops as well.

Significance and Impact: The use of ISA application is expected to offer an alternative method for boosting the EO content and GeDH activity in lemongrass when experiencing high temperature stress. This approach may potentially decrease the reliance on fertilizers.

Keywords: *Cymbopogon flexuosus* (Steud.), Natural polysaccharides, Irradiated sodium alginate, Essential oil, Geraniol dehydrogenase.

Detrimental Indoor Air Pollution : Its Sources, Influence on Health and Extenuation Progressions

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ABSTRACT

Most of the research around the world has been pursued on outdoor air pollution, but in India we have a more severe problem of Indoor Air Pollution (IAP) which means the degradation of indoor air quality by harmful chemicals and other materials; it can be up to 10x worse than outdoor air pollution. This is because contained areas enable potential pollutants to build up more than open spaces. Statistics suggest that in developing countries, health impacts of indoor air pollution far outweigh those of outdoor air pollution. The foremost factor cited for is burning of fossil fuels for cooking. Among the 70% of the country's rural population, about 80% households rely on biomass fuel making India to top the list of countries with largest population lacking access to cleaner fuel for cooking. 4 million deaths and 5% disability-adjusted life-years is an upshot of exposure to IAP from unhealthy cooking making it globally the most critical environmental risk factor. India alone bears the highest burden (28% needless deaths) among developing countries. Moreover, about ¼ of ambient PM_{2.5} in the country comes from household cook fuels. As there are no specific norms for IAP in India, urgent need has arisen for implementing the strategies to create public awareness. Moreover improvement in ventilation and modification in the pattern of fuel will also contribute to eradicate this national health issue. These considerations have prompted the discussion of the present knowledge on the disastrous health effects of pollutants emitted by biomass combustion in India. Additionally, Particulate Matter as an indoor air pollutant is highlighted with main focus on its spatial temporal variation and some recent Indian studies are further explored.

Keywords: IAQ, IAP, Biomass fuel, Particulate matter, Cook stove initiatives, Exposure determinants

TO DETERMINE THE SUITABILITY OF TWO COMMONLY USED SUPERPLASTICIZERS FOR USE IN READY MIX CONCRETE IN INDIA BASED ON THEIR SETTING TIMES

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PANDEY⁴

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ABSTRACT

The study's objective is to create standards for the mix of superplasticizers and regional type of cement paste in RMC. Studies on chemical superplasticizers such as Rheobuild LD 80 and Sika Viscocrete 10 have been conducted. PPC is also widely used in India due to its low cost and the reduced heat of hydration it produces in concrete. When applied Rheobuild LD 80 in RMC, a retarder must be added to offset the superplasticizer's quick-setting characteristics. It was established that using Sika Viscocrete 10 will make up for any setting duration time lost due to traffic jam when delivering RMC. When 1.0% of cement weight of the admixture is supplied to the cement paste's, Sika Viscocrete 10 has a considerable high retarding effect and can extend the first settling of cement by 128% (for a max. up to 2 to 3 hours). Master Rheobuild RMC 80 may be utilised for pre-cast concrete that needs to have high strengths since it has a stronger water-reducing impact. While Sika Viscocrete 10 can produce 16 percent water, the superplasticizer can reduce it by up to 25 percent. When combined with the three kinds of different cement pastes, (RMC)80 Master Rheobuild exhibits erratic behaviour. With Prism cement, the superplasticizer has a retarding effect of +20%, whereas it has a less significant effect with Ultratech PPC and Wonder PPC. Therefore, trial studies are required to confirm the superplasticizer's behaviour with pozzolanic cements. Both Sika Viscocrete 10 and RMC Rheobuild LD 80 must be administered at the proper dosage, which is crucial. Due to its significant retarding impact, Sika Viscocrete 10 has the potential to produce an irregular slump retentivity when applied excessively. In contrast, (RMC)80 Master Rheobuild has the potential to produce a sudden slump loss due to its quick setting properties. It is also concluded that at a shot of 0.25 percent of cement weight, Rheobuild LD 80 generates a retarding impact and is quite capable of lengthening the initial setting moment in times of cement by 56 percent; however, this impact is reversed when the dosage of the additive is higher.

Keyword : Ready mix concrete

Phyto-Niosomes: An Innovative Approach On Novel Drug Delivery System

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ABSTRACT

Herbal remedies have long been a cornerstone of medicinal formulation and advancement. Traditional plant-based medicine systems continue to be a vital part of healthcare, with approximately 80% of the global population primarily depending on traditional medicines for their healthcare needs. Contemporary pharmacopeia still includes at least 25% of drugs derived from plants, along with numerous synthetic analogues that are based on compounds isolated from plants. Herbal medicines that contain water-soluble phytoconstituents are less absorbed due to their large molecular size and lower lipid solubility. To address these issues, herbal components are being integrated into innovative drug delivery systems to enhance their bioavailability and stability. One such innovative drug delivery system is Niosomes, which are vesicles formed by the aqueous dispersion of non-ionic surfactant films. When herbal drugs are encapsulated in this non-ionic vesicular system, they are termed as phytoniosomes. By integrating herbal medications into the delivery method, phytoniosomes are created to enhance their protection against toxicity, stability, sustained delivery, pharmacological action, tissue macrophage distributions, and resilience to chemical and physical deterioration. This system confines a drug's activity to its intended target cells, thereby reducing its toxicity and increasing its therapeutic index. This technology has successfully encapsulated herbal extracts and isolated phytoconstituents, which are fabricated for different routes of administration such as oral, parenteral, transdermal, and intranasal. Phytoniosomes, as carriers, are used to treat various diseases such as cancer, leishmaniasis, and psoriasis. However, more research is needed to assess the effectiveness of phytoniosomes using a variety of herbs.

Keywords- traditional medicines, novel drug delivery system, niosomes, phytoniosomes, phytoconstituents.

Significance of *Ananas comosus* peel as an antimicrobial substance against selected food borne pathogens

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Abstract

Phytochemical substances found in medicinal plants have the potential to be beneficial and might replace synthetic medications and antibiotics, which can have severe side effects. Researchers have utilized plants for food preservation and medication since prehistoric times. The peels of *Ananas comosus* (Pineapple) have long been employed in Indian traditional medicine as a primitive remedy for gut dysbiosis patients, with additional benefits including anti-inflammatory, antidiabetic, antihelminthic, and anticancer properties. The present work used methanol, acetone and aqueous as solvents to prepare the peel extract which is a major waste product from the pineapple fruit processing industries. Agar-well diffusion method for zone of inhibition and broth dilution method was used for calculating MIC and LD50 values against six Gram negative bacteria namely *Pseudomonas aeruginosa* ATCC 27853, *Pseudomonas fluorescens* ATCC 13525, *Escherichia coli* ATCC 8739, *Enterobacter* ATCC13048, *Shigella* ATCC12022, and *Salmonella enterica* ATCC35664, and two Gram positive bacteria *Staphylococcus aureus* ATCC 29213 and *Bacillus megaterium* ATCC 14581 along with three fungal strains namely *Tilletia indica*, *Fusarium*, and *Alternaria*. The findings showed that, among all microorganisms, methanol extract had the highest antibacterial and antifungal activity, with acetone and water extract following closely after. These results are well suited for finding the antimicrobial efficacy of *Ananas comosus* peel and further utilizing it in pharmaceutical and nutraceutical industries.

Key words: *Ananas comosus*, antimicrobial, gut dysbiosis, bacteria, phytochemical.

Isolation of key genes involved in the middle and downstream pathway of aroma biosynthesis in Vetiver Grass

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Abstract

Vetiver (*Chrysopogon zizanioides*), is a densely tufted, perennial, scented, eco-friendly grass of the family Poaceae, growing in tropical and subtropical countries and is described to be native to India and cultivated in more than 70 countries. The roots of vetiver grass are large and fibrous, forming a tufted and very strong root system that extends 2-3 meters below the surface. Root tissues contain oil-producing cells, responsible for their characteristic aroma. Terpenoids are economically and ecologically important compounds, and they are aroma compounds in vetiver essential oil. The essential oil of vetiver is viscous, with colors ranging from amber to olive and having typical long-lasting sweet woody odors like grapefruit, green, and rhubarb undertones. Sesquiterpenoid molecules, the most common class of terpenoids in vetiver oil, are utilized as raw material in perfumery. The middle and downstream pathways of volatile terpene biosynthesis in vetiver roots involve the Terpene synthases (TPSs), Trans-prenyltransferases (TPTs), and NUDX1. In the transcriptome of Vetiver, we identified some full-length *Cz*TPSs, *Cz*NUDX, and *Cz*TPTs.

Keywords: Terpenoids, Oil-producing cells, Aroma, and Trans-prenyltransferases.

Seropositivity of brucellosis in Goat serum sample in Mewar region of Rajasthan

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ABSTRACT

Brucellosis is one of the world's major zoonotic problems. It is an anthroponosis having both public health and economic significance by the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO) and World Organisation for Animal Health (WOAH) in most developing countries (WHO, 2006). Almost all domestic species including goats can be affected with brucellosis except cats which are resistant to *Brucella* infection. In a present study a total of 250 suspected goat samples from different districts of mewar region were examined by RBPT, STAT and ELISA for the detection of brucellosis in goats. Out of these, 19 (07.06%), 16 (06.04%) and 21 (08.4%) samples were found to be positive by RBPT, STAT and ELISA respectively. Seroprevalence of brucellosis in buffalo in serum by I-ELISA was 12.5%, which depicts a dangerous picture regarding human safety because milk is essential and complete food for human beings. Studies showed that goats in Mewar region of Rajasthan have high prevalence of brucellosis so that goat act as a good source and reservoir for *Brucella* infection to animal and human both and also responsible for economic losses to the farmers. It is recommended that good management and hygiene practices shall be performed during handling goats.

Key words: Goat, Serological tests, sero prevalence.

Ameliorative effect of *Moringa oleifera* leaves extract for liver functions

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Abstract:

Moringa oleifera is referred as “Miracle tree” in tropics and subtropics with a wide range of the beneficial effect, which was predicted in Indian system of medicine (Ayurveda and Unani). The plant is reported to possess antitumor, antipyretic, anticonvulsant, anti-inflammatory, antiulcer, antispasmodic, antidiabetic, diuretic, antihypertensive, antioxidant antifungal, antibacterial, antiretroviral, antisepticemic, antidiarrheal, and can be used to treat hepatorenal, cardiovascular, gastrointestinal, and hematological disorders, anxiety, asthma, bronchitis, cough, conjunctivitis, arthralgia, psoriasis, and diabetes. *Moringa oleifera* also helps in improving the Hemoglobin percentage & Red Blood Cell count. *Moringa oleifera* leaves extract was found to enhance the liver dysfunction induced by Levofloxacin by recovering hepatic enzymatic activities (Alanine -aminotransferase [ALT]), Aspartate aminotransferase [AST] and Gamma-glutamyl transferase to normal levels. *Moringa oleifera* leaves had substantial effects on the levels of aspartate amino transferase (AST), alanine amino transferase (ALT) and alkaline phosphatase (ALP), in addition to reductions in lipids and lipid peroxidation levels in the liver.

Keywords: *Moringa oleifera*, AST, ALP, ALT.

Lumpy skin disease of cattle: an emerging problem in India

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Abstract

The lumpy skin disease virus, which belongs to the capripoxvirus genus of the poxviridae family, is the highly contagious virus that causes lumpy skin disease. It is a transboundary illness that affects water buffaloes and cattle and has significant economic implications. The disease is mainly transmitted by arthropod vectors and causes significant economic losses in the livestock industry with higher morbidity and lower death rate. It emerged recently that 7.1% of cattle in India have morbidity for the first time. In 1929, reports of the first cases of lumpy skin disease were received from Zambia. In India the first outbreak of lumpy skin disease reported in odisha state in august 2019. In the African continent, it is regarded as an endemic disease. It is an infectious virus that primarily affects cattle and manifests as epizootic illness. The disease is characterized by the eruption of nodules in the skin, mouth, nostrils, udder, genital region which may cover the whole of the animal's body, drop in milk production, abortion, infertility and sometimes death are the main clinical manifestations of the disease. Pneumonia, dysgalactia, pyrexia, and anorexia are examples of systemic effects. The skin sores harm the hide permanently. The disease's severity varies significantly throughout cow breeds and strains. The clinical signs were much more severe in exotic breeds as compared to indigenous breeds. There is uncertainty regarding the disease's mode of transmission. Insect vectors are strongly suspected to be involved in contact illnesses, as evidenced by the epizootiology. Serum neutralisation tests, transmission electron microscopy, histology, and polymerase chain reaction were used to identify and confirm the disease. The disease may be stopped from spreading by vaccination in conjunction with stringent quarantine guidelines and vector management. This concluded that the latest developments in the epidemiology with the focus on transboundary spread, aetiology and transmission, clinical presentations, diagnostics and management of the disease.

Key words: LSD, emerging disease, management.

Design egg: A novel strategy in contemporary healthcare

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ABSTRACT

People's awareness of the link between diet and health has grown significantly in the previous several decades. Food is only deemed functional when it contributes to human health in addition to its basic nutritional value. Since chicken products, such as eggs, have a positive reputation for health, efforts have been undertaken to alter the eggs by adding health elements or removing or minimizing unhealthy ones. It is rather easy and cost-effective to improve consumer's health and nutritional status by creating a poultry egg's nutritional profile through dietary techniques. Functional foods have the potential to improve health or lower the risk of disease, but they are meant to be consumed as part of a regular diet. One significant category of functional foods are designer eggs. Designer eggs offer immune-boosting, safe, vegetarian, and organic foods that can include vital pigments like carotenoids, balanced omega-6 to omega-3 fatty acid ratios, reduced total cholesterol, and enhanced vitamins and minerals. Animal-derived designer meals are created through cross-breeding and genetic engineering or by feeding certain diets.

Key words : Egg, Nutritional factor, Healthcare

Embryo Sexing in farm animals

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ABSTRACT

Various livestock sectors such as beef industries capitalize on the production of male animals while some the livestock sectors such as dairy industries capitalize on the production of female animals. Embryo Sexing can be defined as pre implantation determination of sex of embryo at compact morula or early blastocyst stage. So, it is strongly recommended to generate animals of the chosen sex, which can be obtained by predetermining the sex of the conceptus at conception. In addition to being helpful for livestock management, production, and breeding programs, control of the sex ratio through sex prediction of the pre-implanted embryo would also be helpful for the early diagnosis of genetic abnormalities. Manipulating the sex of offspring has been a dream of the cattle industry for decades but modern techniques make it possible now. Progressive and rich dairy farmers are now willing to spend money for new technologies to improve profitability of their herd. There are numerous ways for determining the sex of an embryo, both invasive and non-invasive, with differing benefits and levels of efficiency.

Keywords: Embryo Sexing, genetic abnormalities, sex determination, sex ratio

Seroprevalence of Brucellosis in Human beings in Shekhawati region of Rajasthan

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ABSTRACT

Brucellosis is a highly economic importance zoonotic disease that exists worldwide and is more or less endemic in most African countries, Southern European countries and in Asian countries including India. Brucellosis is transmitted from mother to offspring before or at the birth, through milk, by sexual contact, direct physical contact, from polluted environments. In a present study a total of 105 suspected human serum samples i.e. veterinarians, animal handlers, animal owners and meat handlers having history of fever, joint pain, arthritis, weakness and sweating were tested for brucellosis by RBPT, STAT and ELISA from Shekhawati region of Rajasthan covering 3 districts namely Churu, Sikar and Jhunjhunu. Out of these 105 samples, 4 samples (3.80%) were found positive for brucellosis by RBPT, while 6 samples (5.71%) by STAT and 4 samples (3.80%) were found positive for brucellosis by ELISA test from different districts of shekhawati region. The seropositivity of brucellosis to this region may have public health significance. It is recommended that good management and hygienic practices shall be performed during handling of animal mainly cattle and buffaloes.

Key words. Human Serum, seropositivity and serological tests

Evaluation of Physico-Chemical and Antioxidant Properties of Urine of Haryana, Sahiwal and Crossbred cows at District Dairy Farm

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ABSTRACT

Cow urine or Gomutra is considered good for health. It is recommended to people when suffering from several kinds of health problem. The present study was conducted to investigate the urine parameters in between and within the groups have several therapeutic potential due to its content have uric acid, enzymes, antioxidative and many biochemical properties that help in boosts immunity and act as disinfectant. It removes the toxic substance from body by their scavenging properties of free radical. If people drink daily the cow urine become young and energetic. Creatinine, uric acid and urea nitrogen level is significantly high in the urine of cross bred while Haryana heifer cow showed high significant in protein level but glucose level high and non significant in Haryana, Sahiwal and dry Cross bred cow. Alkaline phosphatase significantly high in cross bred in comparison to indigenous cow bred but while alpha amylase is high and non significant. Antioxidative properties is high in indigenous (Haryana & Sahiwal) in comparison to cross bred cow but low in lactating animal of all bred of cow. On examination of urine we can say that urine of cow contains high level of glucose, protein, uric acid, enzymes and antioxidant activity. If human drink daily cow urine become young and free from disease.

Keywords: Cow, Urine, Therapeutic potential

Title: Impact of Climate change on the incidence of zoonotic illness

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ABSTRACT

The atmosphere's concentration of greenhouse gases has significantly increased as a result of human activity and the burning of fossil fuels. The frequency of zoonotic illnesses is significantly impacted by these climate changes. Climate change may lead to an increase in insect vectors, a prolongation of transmission cycles, or an increase in the importation of animal reservoirs and vectors. Additionally, it can negatively impact micro flora, animal dispersal, and biodiversity, which could result in the establishment of outbreaks of zoonotic diseases. Between 1996 and 2007, the following zoonotic illnesses spread throughout the world: Nipah virus, avian influenza H5N1, Rift Valley fever, Ebola hemorrhagic fever, and plague. In contrast, swine flu and bird flu-like illnesses continue to have a devastating effect on animal and human health across the globe. In order to safeguard people in India and around the world from these dangers, multidisciplinary cooperation between veterinarians, environmental scientists, health professionals, economists, geographers, and ecologists studying climate change is essential. This is a need of both today and tomorrow. We will be able to forecast the dynamics of disease transmission under various climatic scenarios and assess the financial viability of mitigation options through thorough interdisciplinary research employing a range of methodological techniques.

Key words: Climate change, Zoonoses

New challenges to food safety: A major threat to human health

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ABSTRACT

It is estimated that about more than 50000 thousands people died from foodborne illness in the worldwide every year (WHO). Food Safety is one of the most critical problems for the food industry. Changes in customer preferences and habits, shifts in the production and supply of food, including an increase in imported foods, environmental changes that might cause food contamination, the emergence of new and emerging bacteria, toxins, and antimicrobial resistance are the main causes of contamination issues. inability to diagnose foodborne illness through testing. Sanitation is the fifth most critical aspect in guaranteeing food safety, according to HACCP principles. Establish and maintain cleanliness in all sections of the food establishment. Make sure that all surfaces that come into contact with food are thoroughly cleaned. All of these steps can raise food quality and protect people from food-borne illnesses.

Key words: Food safety, toxins, health effect, toxins

Pharmacokinetic study of single dose intramuscular administration of enrofloxacin in Sirohi goats

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Abstract

Enrofloxacin is a second generation fluoroquinolone, specially developed for veterinary practice and extensively used in goats for therapeutic purposes. The present study was planned to study the pharmacokinetic of enrofloxacin after single dose intramuscular administration in 6 healthy Sirohi goats. The study was conducted by following cross-over design. The enrofloxacin was injected @ 5 mg/kg body weight through intramuscular route. After drug administration, blood samples were collected at different time intervals and the plasma concentration of enrofloxacin were measured by high performance liquid chromatography (HPLC) having PDA detector. The mean peak plasma drug concentration of $1.37 \pm 0.08 \mu\text{g.ml}^{-1}$ was achieved at 2 h, however, effective therapeutic concentration ($0.1 \mu\text{g.ml}^{-1}$) was maintained up to 24 h with mean concentration of $0.12 \pm 0.02 \mu\text{g.ml}^{-1}$. The mean absorption half-life of ($t_{1/2ka}$) and elimination half-life ($t_{1/2\beta}$) were found to be 0.71 ± 0.10 h and 7.13 ± 0.11 h, respectively. The mean apparent volume of distribution ($V_{d\text{area}}$), volume of distribution at steady state (V_{dss}) and mean residence time (MRT) was calculated to be $3904.9 \pm 147.69 \text{ ml.kg}^{-1}$, $381498.8 \pm 14937.51 \text{ ml.kg}^{-1}$ and 10.1 ± 0.13 h, respectively.

Keywords: Enrofloxacin, Intramuscular, Sirohi goats, pharmacokinetic, UHPLC

Repeat breeding: Incidence, risk factors, diagnosis and treatment incattles and buffaloes

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Abstract

Animals that have more than three or four inseminations following calving and consistent cyclicity but were unable to conceive are considered repeat breeders. For both breeders and veterinary professionals, repeat breeding remains a major issue. In buffaloes, repeat breeding is not common. However, the incidence ranged from 0.70 percent to 30 percent in various research. There are several important risk factors for repeat breeding in buffaloes, including first parity, periparturient illness, lactation and spring and winter calving. Two possible causes of repeat breeding in buffaloes are early embryonic mortality and fertilization failure. In buffaloes, ovarian cysts and irregularities in their ovulation are rare and the clinical appearance of the cysts is usually poor. Rectal palpation, vaginoscopy, uterine cytology, ultrasonography and in vivo imaging method could be significant methods of diagnosis. In many places, clinicians are still limited to using palpation and vaginoscopy to diagnose the most common causes of repeat breeding. However, ultrasonography can significantly improve diagnostic accuracy, particularly when treating individual cows or buffaloes. Gonadotropin-releasing hormone (GnRH) treatment was shown to increase the rate of conception in cows and buffaloes that had dominant follicles in their ovaries. PGF 2α treatment increased the pregnancy rates in repeat breeder buffaloes and heifers with prominent corpus luteum and sufficient body condition score. When the Ovsynch protocol (GnRH-PGF 2α -GnRH-AI) is initiated during the mid-diestrus, or days 5-12 of the estrus cycle, the conception rate often increases. In conclusion, hormone therapy is thought to be the most effective method for treating repeat breeding condition in India. To limit the parasite burden, timely insemination, proper nutrition, appropriate care, periodic deworming and bull mating management are all part of the initial therapy phase.

Key words: Repeat breeding, PGF 2α , Ovsynch, Vaginoscopy, Corpus luteum

Impact of FMD vaccination on semen and its sperm functions parameters in Murrah, Sahiwal and Vrindavani breeding bulls

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ABSTRACT

Livestock, including the Murrah buffalo, play a significant role in milk production in India. However, the country's tropical climate and diseases like Foot and Mouth Disease (FMD) pose challenges. This study, conducted at the Germ Plasm Centre (GPC), ICAR-IVRI, India, examined the effects of FMD vaccination on bull semen in three breeds: Murrah, Sahiwal, and Vrindavani. Results showed a temporary decline in semen quality immediately after vaccination, followed by recovery within six weeks. Each bull provided a total of six ejaculates, with the first collection occurring one week before vaccination and the subsequent collections spanning six weeks after vaccination with the RAKSHA-OVAC TRIVALENT FMD vaccine (concentrated) using an oil adjuvant from Indian Immunological Ltd. The study investigated the effects of FMD vaccination on bull semen in three breeds—Murrah, Sahiwal, and Vrindavani. A total of 108 ejaculates (42 per breed) were collected before and after vaccination, assessing various semen parameters, including physico-morphological traits and sperm quality attributes. Additionally, oxidative stress parameters and flow cytometry studies were conducted. The research revealed a temporary decline in semen quality right after vaccination, followed by recovery in the second week, with most parameters returning to normal by the third week. Semen volume remained unaffected, indicating independence from vaccination. Notably, live sperm decreased, while moribund and dead sperm increased up to the fourth-week post-vaccination. This highlights the need for a recovery period after vaccination before using bulls for breeding. The study provides valuable insights

into the complex relationship between FMD vaccination and semen quality in these cattle breeds.

The study examined the impact of Foot-and-Mouth Disease (FMD) vaccination on sperm parameters in Murrah, Sahiwal, and Vrindavani bull semen. Results indicated a temporary decline in acrosomal integrity, HOST percentages, DNA damage, cholesterol levels, and phospholipid levels in Murrah bulls, with recovery occurring over six weeks. Sahiwal and Vrindavani bulls exhibited similar trends in acrosomal integrity, HOST percentages, and DNA damage. Post-thaw sperm quality parameters underwent significant changes after FMD vaccination, followed by recovery or stabilization over six weeks. Oxidative stress parameters also fluctuated significantly, with an initial decrease in Total Antioxidant Capacity (TAC) that gradually improved, and spikes in Lipid Peroxidation (LPO) and Reactive Oxygen Species (ROS). These findings underscore the importance of monitoring these parameters to assess semen quality and reproductive outcomes. The study aimed to offer insights into the intersection of animal health, economic factors, and breeding programs related to FMD vaccination, providing guidance on managing and mitigating adverse impacts on cattle farming and breeding.

The study suggested that the cumulative financial consequences could potentially be more significant when considering two vaccination periods per year, requiring sophisticated economic models for accurate predictions. As of the latest available data up to 2021, India had around 59 registered semen stations. Estimated average losses per breed per station over a six-week period after each vaccination were: INR 876 for Murrah, INR 2370.75 for Sahiwal, and INR 1074.4 for Vrindavani. These figures can help estimate the annual losses per breed per station.

The findings indicate that cattle breeders and the national livestock sector should adopt a more nuanced approach to breed selection and management, particularly if semen quality is a critical performance indicator. Future research should focus on identifying mitigative measures and exploring less impactful vaccination alternatives to safeguard both the health and economic viability of India's livestock sector.

Key words: Semen, sperm and different breeds off buffaloes.

Nurturing a Unified Journey of Humanity and Biodiversity

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Abstract

Within the intricate tapestry of life on Earth, humans are not merely isolated threads but interconnected with the entire web of existence. Unfortunately, our pursuit of development has often taken the form of destructive tendencies, casting shadows on our role as custodians of the planet. Uniquely, humans inflict pain purposelessly, tarnishing our responsibility to safeguard the Earth. Amidst this turmoil, a deafening silence prevails, as we neglect the critical state of our world and our own well-being. Our reluctance to acknowledge faults and the urgency for change exacerbates the looming crisis. This raises the question of why do we succumb to competitiveness, aggression, and selfishness, risking the ruination of our home. Are we inherently flawed, or does the potential for greatness lie dormant within us? Examining our immediate ancestors, the bonobos reveals a different path. Anthropologist Adrienne Zihlman highlights their similarity to our forebears and their cooperative, loving behaviors. The conflict between our genetic instincts and cognitive faculties has led to a sense of alienation, symbolized by the trapped goose representing our consciousness yearning to be free from the bottle of the mind. Achieving a harmonious existence hinges on reconciling this internal conflict. To mend our relationship with the planet and with ourselves, we must recognize our role in the cosmic order. Embracing the wisdom of our ancestors and adopting the selflessness exhibited by bonobos becomes paramount. Amidst the current disharmony, we retain the power to choose a symphony of shared existence. Humanity's destiny is a conscious choice, whether we descend further into conflict or rise as divine beings, nurturing the intricate threads that weave Earth's vibrant tapestry.

Key words: Bonobos, wisdom of our ancestors, humanity's, Earth

Canine transmissible venereal tumor from diagnosis to treatment

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ABSTRACT

A three-year-old bitch was brought in complaining of blood discharge through her vulva from the previous four days in VCC PGIVER Jaipur. The gross lesions, anatomical placement, cytology, and impression smears of the tumour were used to make the diagnosis. During the per vaginal examination cauliflower like growth was felt. According to cytology, the cell's cytoplasm was blue in colour and had numerous, clearly identifiable cytoplasmic vacuoles. On the basis of above examination it was diagnosed as canine transmissible venereal tumor (CTVT). It was a high-incidence neoplasm mostly spread by copulation but may also be caused on as the dog bites, sniffs or licks the tumor affected areas. The phases of progression, stasis and regression were identified in the CTVT tumour evolution process. The case was treated by doing chemotherapy which includes Vincristine sulphate which was given slowly intravenous @ 0.025 mg/ kg B. wt. in 100 ml Normal saline weekly and Ivermectin @ 200mcg per kg body wt. S/C at 2 week interval. Three shots of vincristine sulphate were given at weekly interval. The growth was diminished completely after 3 weeks.

Key words: Canine, tumor, treatment

DRY PRESERVATION OF ANATOMICAL SPECIMENS BY ADVANCED PLASTINATION TECHNIQUE: AN ALTERNATIVE TEACHING AIDS

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ABSTRACT

The present study was conducted with the aim to preparation of plastination models of right kidney of horse, left kidney of ox, testis of goat and right hind limb of buffalo calf. The old formalin fixed specimens available in department of veterinary anatomy were utilized for plastination process. The necessary dissection was carried out on these anatomical specimens to expose the individual anatomical structures and elements, and then specimens were thoroughly rinsed in clean water to remove excess formalin. After that specimens were placed in acetone bath for removal of water and fat. Then clearing of specimens was performed in chloroform solution. After clearing, specimens were subjected to forced impregnation with 1:1 ratio of chloroform and melamine solution for 4 to 5 days. The curing of specimens was done by soaking in 9:1 ratio of melamine and hardener. The prepared anatomical models were dry, odorless, and easy to demonstrate the gross morphological details. These models can be preserved well to minimize the use of animals and effectively utilized as teaching aids in undergraduate teaching of veterinary anatomy.

KEYWORDS: Anatomical, Cadaver, Plastination, Preservation, Teaching aids

Bioenergy: A Solution for Brighter Future.

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Abstract

Fossil fuels are the source of energy but this source is receding all over the globe. The unmindful consumption of fuels leads to increase in global temperature through emission of harmful gases which ultimately leads to global warming. So the present day researchers are looking for renewable sources of energy like air, solar and hydro energy. But among all these Biofuel is the only source out of all the various energy sources such as electricity, heat and fuel transport have potential to form organic chemicals and polymers. In India, Agricultural sector produces many wastes as by-products like weeds, leaves, branches, rotten fruits, seeds etc.

80 million households use firewood and various forms of biomass for cooking purpose. Of these more than 60% consist of twigs, dung cake and agricultural wastes. This low efficacy burning produces high level of smoke, PM₁₀ Particulate matter, NO_x, SO_x, Poly-ammonia, poly-aromatics, di and mono oxides of carbon etc. Apart from cooking biomass is burnt for heating and disposal of waste material including crop residues.

Biomass is the renewable energy source which comes from biological materials like plants, animals, micro organisms and municipal waste. These wastes can be converted into useful substances. Biological conversion of agricultural wastes through fermentation into ethanol, methanol and butanol or through anaerobic digestion into methane and anaerobic respiration bio-battery. Agricultural or farm residues can also be converted into bio diesel through a series of chemical reactions(trans-esterification).

Farm or agricultural wastes are the sources of lignocellulosic biomass consisting of about cellulose(35-50%), hemicellulose(25-30%) and lignin(10-25%). These lignocellulosic resources with the help of microorganisms can produce number of industrially important enzymes such as cellulases, xylanases, ligninases and lipases. These enzymes are of great industrial importance as used in pulp and paper industry, textile industry, food industry, detergent industry, animal feed industry and agricultural sector industries. Thus eradication and management of solid wastes can also be a source of additional income for farmers and new field of employment of youth.

Anthrax: A major public health threat as a Zoonoses as well as Bioterrorism

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ABSTRACT

Anthrax is one of major globally-neglected diseases, which are both zoonotic and endemic, according to the WHO. Anthrax affected most of the domestic livestock animals and spread infection to human beings. *Anthrax* is a serious, potentially fatal disease that can present in four distinct clinical patterns depending on the route of infection (cutaneous, gastrointestinal, pneumonic or injectional). A biological attack or bioterrorism, *Anthrax* makes a good weapon and one of the most likely agent to use in a biological attack, because it can be released quietly and without anyone knowing. The microscopic spores could be put into powders, food, sprays, and water. Anthrax spore is so small, you may not be able to see, smell, or taste them. Anthrax spores are easily found in nature, can be produced in a lab, and can last for a long time in the environment. It can be preventable by the application of vaccines for conventional prophylactic use, as well as post-exposure use in conjunction with antibiotics. The next generation of recombinant sub-unit vaccines for anthrax, balancing the regulatory requirement and current drive for highly defined vaccines, against the risk of losing the “danger” signals required to induce protective immunity in the vaccine.

Key words: Anthrax, Zoonosis, Bioterrorism agent.

Comparative analysis of Inorganic Fertilizers and Organic Fertilizers on Green Gram (*Vigna radiata* L.) under different conditions

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Abstract

Pulses are an important element of the vegetarian diet of India's enormous population. Inorganic fertilizer use enhances output for a few years, but it is ineffective in the long run and causes soil damage. Continuous application of organic fertilizer, on the other hand, produces environmental damage and reduces agricultural yields. As a result, sustainable agricultural productivity may be reached by the prudent application of integrated nutrient management. As a result, maintaining soil fertility is critical to obtaining and maintaining high agricultural yields throughout time. In tropical agriculture, the unethical use of inorganic fertilizers to match the demands of high yielding variety causes soil organic matter depletion. The combined use of organic manure and chemical NPK fertilizers would be quite promising not just in terms of increased production stability, but also in terms of preserving improved soil fertility status.

Keywords: fertilizers, organic, inorganic, green gram, *Vigna radiata* L.

“Management of Onion thrips Population in Onion Crop under Open Field Conditions with Special Reference to Their Biological Control in Jhunjhunu Region”

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Abstract:

The present study under the topic of “The Impact of Abiotic Factors on the Population of Onion thrips (*Thrips tabaci*) in Jhunjhunu during Rabi Season of Onion” was performed Entomological Research Centre and Farm, Shri Jagdishprasad Jhabarmal Tibrewala University, Jhunjhunu, Rajasthan. In the Jhunjhunu region, onion thrips (*Thrips tabaci*) are a significant pest of onion crops grown in open fields. By feeding on the leaves of the onion crop, the insect seriously damages it, lowering the production and quality of the supply. A robust and successful onion crop depends on the control of the population of onion thrips. In this work, we looked into the management of onion thrips populations in open-field onion crops using biological control agents. In addition to a chemical pesticide (imidacloprid) acting as a control, the treatments comprised three distinct biological control agents: *Bacillus thuringiensis* var. *kurstaki*, *Metarhizium anisopliae*, and *Beauveria bassiana*. Three distinct time intervals (7, 14, and 21 days) were given to the treatments following the transplantation of the onion seedlings. Comparing the three biological control agents to the control treatment, the outcomes demonstrated a considerable decrease in the onion thrips population. *B. bassiana* was the most successful of the three agents in lowering the onion thrips population.

Alternative Strategies to Manage Air Pollutants and Human health in recent times

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Abstract

Most organisms are limited to either a terrestrial or an aquatic environment. An organism's ability to tolerate local conditions within its environment further restricts its distribution. One parameter, such as temperature tolerance, may be important in determining the limits of distribution. Most organisms are not able to maintain a body temperature that is significantly different from that of the environment. Organisms, such as plants and fungi, and very small organisms and animals that cannot move great distances, Therefore, must be able to withstand the full range of temperatures sustained by their habitat. In contrast, many mobile animals employ behavioral mechanisms to avoid extreme conditions in the short term. Such behaviours vary from simply moving short distances out of the Sun or an icy wind to large-scale migrations. There is ample evidence of the adverse health effects of air pollution. According to WHO, exposure to ambient air pollution is estimated to cause about 4.2 million deaths annually worldwide. In the European Union, air pollutant conc. are still too high. According to the European Environment Agency (EEA), in 2020 96% of city residents were exposed to harmful concentrations of particulate matter (PM), where particles have an aerodynamic diameter equal to or less than 2.5 μm (PM_{2.5}). To help mitigate the negative health impacts of exposure to high levels of ambient air pollution, people must be aware of the air quality in their area and have clear, detailed information on what health risks they face and what actions they need to take to protect their health

Design, Synthesis and Biological Evaluation of Novel Hydrazinyl Thiazole Derivatives

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Abstract

Nitrogen and sulphur are both present in the five-membered heterocyclic molecule known as thiazole. Thiazole and its derivatives are basic compounds in medicinal chemistry. A wide range of biological actions, such as antibacterial, antiparasitic, analgesic, antihypertensive, anti-inflammatory, and anti-HIV properties, are exhibited by compounds containing thiazole molecules. Pharmaceutical chemistry is particularly interested in the synthesis of thiazole compounds from thiosemicarbazones because to their versatility, affordability, high yields, and ease of usage. This work aims to synthesise new hydrazinyl thiazole compounds and investigate their biological characteristics.

Keywords- Thiazole, biological activity, antiparasitic, anti-inflammatory.

Digitalization of Agriculture in India

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ABSTACT

Agriculture is experiencing dynamic and diverse developments in the digitalization of operations and operational infrastructure. Consequently, farmers in mid- and western Europe have access to an increasing number of digital applications and precision agriculture (PA) technologies. A broad range of technologies are available as decision-making support tools for practitioners and to facilitate site-specific and more efficient processes in both crop and livestock farming. Digital Farming is the consistent application of the methods of precision agriculture and smart farming, internal and external networking of the farm and use of web-based data platforms together with Big Data. Digital Farming is the integration of precision farming and smart farming and is achieved through the implementation of intelligent software and hardware. Precision farming is popularly defined as a technology-enabled approach to farming management that observes, measures, and analyzes the needs of individual fields and crops. Smart farming is more focused on the use of data acquired through various sources (historical, geographical, and instrumental) in the management of the activities of the farm. Digital Farming can be done through the installation of network-connected 'smart' devices as part of IoT (Internet of Things) or they can be software as a service (SaaS) based agtech.

Keywords: Agriculture, Digitalization, IOT and Precision Farming

DNA cleavage efficiency of transition metal(II) Schiff base complexes of 4-aminoantipyrine derivative by synthesis, characterization and antimicrobial study

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ABSTRACT

Metal complexes of Schiff bases have played a central role in the development of coordination chemistry. Schiff bases offer a versatile and flexible series of ligands capable to bind with various metal ions to give complexes with suitable properties for theoretical and/or practical applications. During the past two decades, considerable attention has been paid to the chemistry of the metal complexes of Schiff bases containing nitrogen and other donors. A new bidentate Schiff base ligand derived from 4-aminoantipyrine and o-acetoacetotoluidide and its Cu^{II}, Co^{II}, Ni^{II} and Zn^{II} metal complexes have been synthesized and characterized by microanalytical data, IR, UV-Vis, ¹H NMR and mass spectra. The conductance measurements indicate that all the complexes are electrolytes. The IR spectra indicate the coordination of azomethine nitrogen atom of the Schiff base and cyclic carbonyl group of the pyrazolone ring. The UV-Vis spectral data demonstrate that the complexes have square-planar geometry. The FAB mass spectra confirm the composition of the complexes of the type ML where M Cu^{II}, Co^{II}, Ni^{II} and Zn^{II}. Their magnetic susceptibility values provide evidence for the monomeric nature. The gel electrophoresis experiment has been carried out on the interaction of the complexes with CT-DNA. The nuclease activity of the above metal complexes shows that only the copper complex cleaves DNA in the presence of oxidant. Antimicrobial activities of the compounds are tested in vitro against four bacteria and three fungi by the disc diffusion method. The MIC value against the growth of microorganisms is much larger for metal chelates than the ligand.

Keywords: DNA cleavage, 4-aminoantipyrine, Schiff base, transition metals.

SYNTHESIS, SPECTRAL AND ANTIMICROBIAL STUDIES OF NEW COBALT(II) TETRAAZA MACROCYCLIC COMPLEXES

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ABSTRACT

Macrocyclic compounds have attracted increasing interest owing to their role in the understanding of molecular processes occurring in biochemistry, catalysis and coordination chemistry. Transition metal macrocyclic complexes have received much attention as a active part of metallo-enzymes as biomimic model compounds due to its resemblance with natural proteins like hemerythrin and enzymes. Many of these ligands have been designed to mimic the function of natural carriers in recognizing and transporting specific metal ions, anions or neutral molecules and in understanding and reproducing the catalytic activity of metallo-enzymes and proteins. A series of new Co^{II} complexes of general composition [CoLX₂] (where X = Cl⁻, NO₃⁻) with N₄ donor macrocyclic ligands (L) have been synthesized. The geometry of the complexes have been characterized by elemental analysis, molar conductance, thermal analysis, magnetic susceptibility measurements and spectral (electronic, IR, ¹H NMR, ¹³C NMR, mass) studies. All the complexes are of high spin type showing magnetic moment corresponding to three unpaired electrons. Octahedral geometry is tentatively proposed for all the complexes. Antimicrobial activities of these complexes are also studied and thio group containing complexes found to be more active than the *streptomycin* and *ampicillin*.

Keywords: Tetraaza macrocyclic complexes, ortho-phthalaldehyde, antimicrobial studies, cobalt(II).

Dark Web's Impact on the Mental Health of Children

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Abstract:

The proliferation of the dark web, an encrypted and clandestine sector of the internet, poses a burgeoning threat to the mental well-being of children in the digital age. This paper synthesizes existing literature to comprehensively examine the multifaceted impact of the dark web on the mental health of children, shedding light on the various dimensions of this evolving concern.

The anonymity afforded by the dark web facilitates the dissemination of explicit and distressing content, exposing children to cyberbullying, explicit materials, and other psychologically harmful experiences. The review explores the intricate ways in which exposure to such content during formative years can influence the mental health of children, leading to heightened levels of anxiety, depression, and post-traumatic stress disorders.

Moreover, the dark web serves as a breeding ground for criminal activities such as child exploitation, trafficking, and involvement in violent ideologies. The pervasive nature of these threats contributes to an atmosphere of fear and insecurity, impacting children's perceptions of safety and trust in the digital realm.

This paper also considers the long-term consequences of dark web exposure, emphasizing the need for proactive measures to mitigate these effects. Strategies for prevention and intervention, including digital literacy programs, online monitoring tools, and law enforcement efforts, are discussed in the context of safeguarding the mental health of children.

As the digital landscape continues to evolve, educators, parents, mental health professionals, and policymakers must collaborate to implement effective protective measures. The article concludes by emphasizing the urgency of addressing this issue and calls for continued research and vigilance to ensure the well-being of the younger generation in an increasingly complex online environment. This comprehensive review aims to contribute to the growing body of knowledge surrounding the dark web's impact on children's mental health, providing insights for future research, policy development, and intervention strategies.

Keywords: Dark Web, Mental Health, Children

Characterization of Bacteria and Fungus isolated from Goat dung (*Capra hircus*)

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ABSTRACT

Goat dung is the waste product eliminated from the rumen of the goat resulting from the food intake by the goat. Microorganisms in goat dung would spread in abundance, once the goat dung fall onto the ground and water. Hence, the aim of this study is to characterize the bacteria and fungus isolated from goat dung. The improper handling of goat dung in Acharol village may affect human health. The sample of goat manure was collected aseptically. The goat dung was preceded with a serial dilution 10^{-1} upto 10^{-6} and spread on nutrient agar. The pure culture was obtained by sub-culturing each different bacterium on nutrient agar, blood agar, MacConkey agar and followed by biochemical tests. The Gram staining was first done for identification then followed by biochemical tests. The biochemical tests were indole test, Mannitol motility, Citrate utilization, Triple sugar iron, Urease test. Potential bacteria that successfully isolated from goat dung were *Escherichia coli* and *Micrococcus* spp. and *Bacillus* spp. respectively, these bacteria have caused many diseases in humans. In the present investigation we studied the microbial load of goat dung. Bacteria were isolated from goat dung by using nutrient agar, blood agar and MacConkey agar and Sabouraud Dextrose agar (SDA) were used for fungal isolation. The isolated bacteria were identified on the basis of their colony characteristics, morphology, Gram's staining, microscopy and biochemical test. Microbial load of goat dung was calculating by cfu/gm of samples. The maximum number of bacterial population was exhibited in dilution 10^{-2} which ranged from 200×10^{-2} cfu/ml. A total of 20 isolate including Gram Negative bacilli, Gram Positive cocci and Gram Positive bacilli *Escherichia coli*, *Micrococcus* spp. and *Bacillus* spp respectively were isolated from cow dung. Sabouraud Dextrose Agar (SDA) used for fungal isolation. The maximum number of fungal population was exhibited in dilution 10^{-3} which ranged 250×10^{-3} cfu/ml different fungus colonies of *Candida* spp.were observed. These beneficial microbes will be used for further research work.

Keywords:Goat dung, Microbial load, Bacteria, Fungi, Rumen microbes.

A study of costumes and designs of Mughals in medieval India

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Research scholar

ABSTRACT

The costume is a basic requirement of humanity or any community. To put it another way, costumes are a representation of an era. My research paper is about the clothing and designs developed during the reign of the Mughals in the 16th and 17th century. The Mughals were famous for their clothing and designs not only in India, but all around the world. This study makes an attempt to inquiry into the nature of Mughal garments, patterns, materials, industry, and technological issues.

The main sources of knowledge for reconstructing the history of Mughal clothing in a systematic manner are book pictures, biographies and autobiographies of Mughal emperors, imperial albums and narratives of European travellers. The graphics in the book incline this work to show how the Mughals carried the legacy of Central Asia and how this Central Asian taste in clothes was impacted by indigenous culture. This story delves deeper into the blending of two distinct identities, which resulted in the revival of a new passion for costumes.

Although the main sources do not mention much about the clothing and designs of Mughal monarchs, we do have some information in several places when the Mughals' regular events like as weddings, weighing ceremonies, and coronations are detailed. We can also discover references to the dresses here. However, it is concerning because the main sources do not describe the clothes separately, with the exception of Ain-I Akbari, where the imperial wardrobe is extensively discussed. In this study, I attempted to link the sources available on Mughal costumes with visual evidences in order to preserve a balance in replicating the facts about Mughal garments by utilising the material accessible in primary sources, travelogues, and pictorial evidences.

Proximate composition, phytochemical contents and GC-MS investigation of two medicinal plants species of Assam, India

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ABSTRACT

Clerodendrum chinense and *Trichosanthes costata* are well-known traditional medicinal plants that have been used to treat various diseases for centuries. This study is conducted to evaluate the proximate composition, mineral composition, phytochemical contents and GC-MS investigation of the two medicinal plants species due to their therapeutic importance. Proximate analysis of plant sample determines that moisture content (9.6391 ± 1.61 g/100g), ash content (14.5865 ± 2.41 g/100g) and crude fat (3.76 ± 1.23 g/100g) was found higher in *Trichosanthes costata*, whereas crude fibre (12.35 ± 0.6 g/100g) protein content (15.24 ± 1.61 g/100) and carbohydrate (57.7698 ± 2.33 %) was higher in *Clerodendrum chinense*. Minerals like K, Ca, Mg, Al, Na, Zn and Mn were analyzed in both the plants. The phytochemical screening shows the presence of phenol, alkaloids, flavonoids, terpenoids and tannin in both the plants that explains their higher and varied antioxidant properties. The GC-MS investigation shows the various kind of chemical composition which have the different kinds of important disease curing and health benefit properties. Based on the analysis, it can be concluded that *Trichosanthes costata* and *Clerodendrum chinense* have the sufficient number of bioactive compounds and nutritional value to treat the diabetes, and high-blood pressure.

Keywords: Phytochemical screening, Proximate composition, Bioactive compounds, Medicinal plant, Diabetes, High-blood pressure.

Exploring the Anti-Androgenic Properties of *Ruta graveolens* in Polycystic Ovarian Syndrome (PCOS)

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ABSTRACT

Ruta graveolens, commonly known as Rue, stands out as a botanical reservoir of medicinal compounds, making it a subject of keen interest in the realm of pharmacognosy. This research explores the extensive medicinal repertoire of *Ruta graveolens*, with a particular emphasis on its application in addressing Polycystic Ovarian Syndrome (PCOS).

The plant boasts a diverse array of bioactive constituents, including alkaloids, flavonoids, and essential oils, contributing to its pharmacological versatility. Our investigation concentrates on the potential of *Ruta graveolens* in mitigating the complex pathophysiology of PCOS, a prevalent endocrine disorder affecting women of reproductive age.

As PCOS remains a challenging condition with multifaceted etiology, the therapeutic potential of *Ruta graveolens* offers a promising avenue for further research. Understanding the molecular mechanisms behind its efficacy in managing PCOS could lead to the development of targeted botanical interventions, providing alternative and complementary approaches to alleviate the burden of this complex syndrome on affected individuals.

KEYWORDS: Polycystic Ovarian Syndrome, *Ruta graveolens*, Flavonoids, Endocrine disorder

Determination of urea in commonly consumed Beers using biosensors by immobilisation of urease on nylon membrane using AISE (Ammonium Ion Selective Electrode)

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ABSTRACT

This study focuses on determining the urea content in beers, employing a newly developed biosensor that incorporates an ammonium ion-selective electrode (AISE) and immobilized urease enzyme on a nylon membrane. The constructed potentiometric biosensor demonstrates high sensitivity for detecting urea in readily accessible fermented alcoholic beverages. The methodology involves the covalent immobilization of urease enzyme nanoparticles on a nylon membrane, subsequently deposited onto the AISE. In the case of beer, the urea concentration ranged between 7 and 37 mg/L approximately. This variability in urea concentrations reflects the diverse nitrogenous profiles inherent in different beer samples. The working electrode exhibited sustained efficacy when utilized weekly over a span of 6 months, with storage at 4°C. These findings underscore the potential applicability of the developed biosensor for monitoring urea levels in fermented alcoholic beverages, providing valuable insights into the quality of such products, particularly beers.

The abstract should be at least 150 words, but not exceed 350 words. It should be a single-paragraph abstract outlining the aims, scope and conclusions of the paper. The abstract should be written in English, using MS-Word (.docx format). Font size should be 12 points and Justify. Page margins should be 2.5 cm for the left, right, top and bottom margins. Use font type 'Cambria' with single-spaced lines. References are not mandatory and they will be included in the word count.

KEYWORDS

Urea, Alcoholic beverages, Beer, Biosensor, AISE

Study of the expression of the key genes related to yellow vein mosaic virus resistant in okra using quantitative real-time PCR

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ABSTRACT

Okra (*Abelmoschus esculentus* (L.) Moench) is an economically important vegetable crop grown widely in tropical and sub-tropical parts of the world. It is an easily available, low-cost vegetable crop with high nutritional benefits. Among biotic stresses, yellow vein mosaic virus (YVMV) is the most devastating disease caused by monopartite, bipartite begomovirus and associated satellites. The virus transmission occurs through the whitefly (*Bemisia tabaci* Genn.) in nature. Morphological differences between *Abelmoschus esculentus* cultivar Punjab Padmini (susceptible) and *Abelmoschus moschatus* accession 140986 (resistant) were observed. The synchronization of both species with respect to germination, inoculation stage, disease development stage and prevalence of whitefly population was optimized. The artificial virus inoculation with viruliferous whiteflies was done, followed by leaf sampling at 0, 1, 3, 5, 10, 15, 20, 25 days post inoculation (dpi) for gene expression. The relative gene expression study was done using reference (tubulin) and target (begomovirus specific) through quantitative real time PCR (qRT-PCR). The virus titre enhanced at 5 dpi in resistant species due to enhanced replication of virus against the strong immune response of resistant species. The flor-flor hypothesis holds this fact, therefore 5 dpi is recommended for screening of YVMV disease at the gene and genomic levels.

KEYWORDS: Yellow Vein Mosaic Virus, *Abelmoschus esculentus*, quantitative real-time PCR, Whitefly, gene expression

Microbial Bioremediation of Brass Contaminated Soil and Water: A Review of Strategies and Advances in the Moradabad Region.

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ABSTRACT

Industrial activities in the Moradabad region have led to the widespread contamination of soil and water with brass, posing significant environmental and public health concerns. Brass, a metal alloy composed primarily of copper and zinc, is extensively used in various industrial processes, contributing to elevated levels in effluents discharged into the environment. Microbial bioremediation has emerged as a promising and environmentally sustainable approach to mitigate brass contamination. This paper provides a comprehensive overview of microbial bioremediation strategies employed for the restoration of brass-contaminated soil and water in the Moradabad region. The study begins by exploring the sources and pathways of brass contamination in the industrial effluents of Moradabad, emphasizing the urgent need for effective remediation measures. Subsequently, the paper delves into the microbial mechanisms underlying brass biotransformation and detoxification. Various microbial species, including bacteria, fungi, and actinomycetes, are discussed for their ability to sequester, accumulate, or catalyze the degradation of brass components, thus aiding in the remediation process. Furthermore, the review highlights recent advancements in biotechnological approaches such as genetically engineered microorganisms and microbial consortia, showcasing their potential to enhance the efficiency of brass bioremediation. Additionally, the influence of environmental factors, such as pH, temperature, and nutrient availability, on the success of microbial remediation strategies is examined to provide a holistic understanding of the process. The paper also addresses challenges and limitations associated with microbial bioremediation in the Moradabad context, including the adaptability of microbes to local conditions and the scale-up feasibility of bioremediation technologies. Moreover, the socio-economic impacts and regulatory aspects of implementing microbial bioremediation are considered, offering insights into the broader implications of these strategies. In conclusion, this study synthesizes existing knowledge on microbial bioremediation of brass-contaminated soil and water in the Moradabad region, emphasizing the potential of this approach for sustainable environmental management. By bridging the gap between research findings and practical applications, the paper aims to contribute to the development of effective and site-specific bioremediation strategies tailored to the

unique challenges posed by brass contamination in the Moradabad industrial
landscape.

KEYWORDS: Microbial bioremediation, Microbial consortia, Socio-economic impacts, Environmental factors, Sustainable environmental management.

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Evaluating the therapeutic potential of methanolic extract of *Iris ensata* in polycystic ovarian syndrome (PCOS) in wistar rats

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Abstract

Polycystic ovarian syndrome (PCOS) is a multidisciplinary endocrinopathy of reproductive-aged women that provokes insulin resistance, hyperandrogenism, cardiovascular problems, obesity, and menstrual complications. In the present study was designed to determine the therapeutic potential of methanolic extract of *Iris ensata* and standard drug metformin on letrozole (1mg/kg) induced polycystic ovarian syndrome (PCOS) in female wistar rats. Twenty four rats divided into four groups including negative control, positive control, PCOS and treatment groups. Positive control group received MET (50 mg/kg) for 21 days. PCOS was induced with letrozole (1mg/kg body weight). Treatment group was treated with Methanolic extract of *Iris ensata* for 3 weeks after induction of PCOS for 21 days. Ovaries and uterus were dissected out and their sections were used for histomorphometric study. Levels of progesterone, testosterone, LH, estrogen, FSH, as well as Lipid profile, physical parameters were measured in the serum. In the treatment group, *Iris ensata* increased level of progesterone ($P<0.05$), while decreased testosterone ($P<0.05$) as compared with the PCOS group. Concentrations of testosterone, LH, estrogen, FSH did not change significantly in comparison with the PCOS group. Histomorphometric study showed that in the treatment group, the number of pre-antral follicles, antral follicles and corpus luteum increased compared with the PCOS group ($P<0.05$), but the number of cystic follicles and diameter of antral follicles decreased ($P<0.05$) and the number of primary follicle did not alter significantly. In the treatment group, the thickness of granulosa layer increased, but the thickness of theca layer and tunica albuginea decreased compared to the PCOS group ($P<0.05$). The study demonstrated that the IE and MET hold a significant effect in letrozole induced PCOS models and could be more beneficial in the management of reproductive and metabolic disorders pertaining to PCOS.

Keywords: Metabolic disorders; Methanolic extract; Diestrous cycle; Histopathological examination, Wistar rats.

Socio-economic Impact of Barsana Temples in Uttar Pradesh: A historical Study

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Abstract

The Barsana Temples in Uttar Pradesh have significant socio-economic impacts. They attract pilgrims, boosting local tourism and creating employment opportunities. Additionally, the temples contribute to the region's cultural identity, fostering a sense of community and promoting traditional arts and crafts. This case study would likely reveal a multifaceted positive influence on both the local economy and social fabric. The Barsana Temples, particularly the Radha Rani Temple, are situated in the Braj region of Uttar Pradesh. Pilgrims from across India and beyond visit these temples, leading to a surge in economic activities in the area. Local businesses, including hotels, restaurants, and shops, benefit from increased tourism. The festivals celebrated at Barsana, such as Holi, draw large crowds, providing a boost to the local economy through the sale of religious items, souvenirs, and food. This influx of visitors also creates job opportunities in the hospitality and service sectors, improving the livelihoods of the local population. Moreover, the presence of the temples contributes to the cultural richness of the region. They serve as focal points for religious and cultural events, preserving and promoting traditional practices. This cultural significance helps build a sense of community among the residents and fosters a unique identity for the area. The Barsana Temples have a profound socio-economic impact by driving tourism, generating employment, and preserving cultural heritage in the vibrant tapestry of Uttar Pradesh. Festivals at Barsana, Uttar Pradesh, are deeply rooted in religious and cultural traditions. The most notable celebration is the vibrant and renowned "Lathmar Holi." During this festival, usually held in March, the women of Barsana playfully beat men from the neighboring village of Nandgaon with sticks (lathis), symbolizing the teasing and playful interactions between Lord Krishna and the gopis. Another significant festival is Radhashtami, celebrating the birth anniversary of Radha, the consort of Lord Krishna. Devotees gather at the Barsana Temples to participate in special prayers, processions, and cultural performances. Throughout the year, various other Hindu festivals like Janmashtami (Lord Krishna's birthday), Diwali, and Sharad Purnima are celebrated with fervor, attracting pilgrims and adding to the festive atmosphere in the region.

These festivals not only have religious importance but also contribute to the socio-cultural fabric by fostering a sense of community and providing a platform for traditional music, dance, and art forms to thrive.

Key Words – social, economic, tourism, religious, temples, devotees.

Uptake of Pb and Cd by *Pisum sativum* L.: Implications for Phytoremediation

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ABSTRACT

Soil contamination with toxic metals such as Lead (Pb) and Cadmium (Cd) as a result of worldwide industrialization has increased noticeably in the past few decades. Such heavy metals are highly poisonous when they enter the biological systems. A prevalence of chronic ailments, such as kidney and heart diseases, skin cancer and anaemia has been observed in people living for extended periods in areas polluted by heavy metals. Phytoremediation utilizes plants to decontaminate soil and water. It is a simple, cost effective, eco-friendly technology. Ideally a plant utilized for phytoremediation of heavy metals should have a high tolerance and accumulation of the same along with quick growth, good root proliferation and biomass production. Many crops are bred for quick growth and high biomass for greater yields. They are also bred for tolerance for diseases, insects and other stresses. Thus, such plants may be tested for phytoremediation applications provided they are then kept out of the food chain for obvious health risks. Therefore, a study was made to examine the uptake of vegetable crop: *Pisum sativum* L. (pea) to remediate Pb and Cd. Two concentrations of Pb and Cd were applied in soil. Soil and plant parts were tested at regular intervals for heavy metal content. Plant growth and physiological parameters were also tested.

Pharmacological significance and nutritional profile of *Eleusine coracana L.*

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Abstract

The grass family, Poaceae includes *Eleusine coracana L.* It is considered a staple nutri-cereal referred to as ragi. Despite among other millets, is ranked fourth in significance worldwide, behind foxtail millet, pearl millet, and sorghum. However, In India, the leading producer of finger millet is Karnataka which accounts for about 58% of its worldwide production. It is a highly valued crop due to the presence of vital bioactive compounds such as flavonoids, polyphenols, quercetin, caffeic acid, ferulic acid and ferulic-rich arabinoxylans. Apart from it, Finger millet stands for paramount nutritional contents among other basic cereals such as oats, rye and barley as it is filled with minerals (2.5–3.5%), calcium (0.34%), dietary fibre (18%), phytates (0.48%), protein (6%–13%), and phenolic compounds (0.3%–3%). Additionally, it contains thiamine, iron, methionine, leucine, isoleucine, phenylalanine, essential amino groups and riboflavin content which is further associated with health-beneficial factors such as antitumorigenic (K562 chronic myeloid leukemia), antidiabetic (type 2 diabetes mellitus), antibacterial, antioxidative, antidiarrheal, and anti-inflammatory activities. However, It is mainly incorporated into the diet of patients suffering from anaemia, malnutrition and bone issues as it is a rich source of iron and calcium content. This review's goal is to focus on an overview of contemporary research on the nutraceutical profile concerning its health-promoting effects.

Keywords: Finger millet, dietary fibre, nutraceutical, bioactive compounds

Deep Fake Navigating the Ethical, Psychological, and Societal Implications for Citizens

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ABSTRACT

This research paper delves into the intricate challenges posed by deepfake technology, an advanced form of synthetic media manipulation driven by artificial intelligence, with a specific emphasis on its repercussions for individuals and society. Through an exhaustive review of existing literature and real-world instances, the paper examines the nuanced manners in which deepfakes erode trust in digital media, facilitate the dissemination of misinformation, and jeopardize the privacy and security of individuals.

The ethical dimension of deepfakes is critically scrutinized, encompassing concerns related to the malicious exploitation of this technology for deception, propaganda, and identity theft. The paper delves into the psychological impact on individuals, considering potential harm to mental well-being, the erosion of trust, and challenges to personal and public discourse. Furthermore, it investigates the broader societal consequences, including implications for democratic processes, social cohesion, and the imperative for legislative and technological countermeasures.

KEYWORDS:

Deepfake technology, Ethical concerns, Psychological impact, Societal implications, Countermeasures

ADOPTION OF BANANA CULTIVATION TECHNOLOGY BY GROWERS

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Abstract

Banana, a crucial fruit crop in India's tropical and subtropical regions, ranks as the second most important fruit after mango and the fourth most vital global feed commodity. With its significant socioeconomic impact, banana plays a central role in social and religious festivals and functions, considered auspicious and decorative. India, contributing 26.08% to global production, is the largest banana producer, cultivating it across 0.88 million hectares. The fruit's year-round availability, diverse varieties, taste, and nutritional value make it a favorite among all classes.

Despite challenges like *Fusarium* wilt affecting banana cultivation in Bihar, its cultivation is widespread in the state. The research was conducted in Bihar, India, and a total of 200 banana growers were randomly selected for the study. The findings showed that the average adoption rate in the selection of varieties is 54.97%, followed by 46.3% adoption in post-harvesting practices, 44.58% adoption in nutrient management, 43.50% adoption in the maintenance of banana plants, 36.75% adoption in weed management, 34.50% adoption in land preparation, 32.16% adoption in irrigation management, 32.50% adoption in the use of recommended insecticides, and 18.37% adoption in the use of recommended fungicides. The socio-economic status of the respondents is positively correlated with the adoption of production technology. Furthermore, training, age, and experience are highly significantly correlated. Regression analysis was carried out to determine the important variables and their predicting ability in explaining the adoption. It was found that training is the most important variable in influencing the adoption of banana cultivation practices.

Keywords: Banana, Adoption, Bihar, Farmers, *Fusarium*

**PAPER PRESENTED TO THE INTERNATIONAL CONFERENCE ON
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ZABARDAST KHAN IN LEGENDS AND HISTORY

(A FORGOTTEN HERO OF INDIAN REVOLUTION OF 1857)

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ABSTRACT

While making deep efforts for compilation of regional history around Meerut and Delhi, one of the famous Hindi writer and novelist Acharya Chatur Sen and in his very famous, 'Sona Aur Khoon' has focused his Pen upon the much in famous (?) Personality of a forgotten hero of Indian Revolution of 1857. He thus described his persona:

Nawab Zabardast khan was a tall, well built strong person who had large estate around Hapur and towards and other nearby stations like that of Gulaothi. He was fond of dancing girls but of very cruel nature he was in famous for his cruelty and also due to his anti- Hindu centiments.

On the other hand the authors of the article when investigated, found Acharya Chatur Sen's Comments untrue and unhistorical to some extent. Nawab Zabardast khan belonged to the Choudhary family of Tha Sarai and Qila Kohna of Hapur Choudhary Rup Ram was his Uncle with whom he had a number of Land disputes.

Choudhary Zabardast khan was stilled, 'Nawab' by the Mugal Emperor Bhadur Shah whose youngest son from Zeenat Mahal was married to Zabardast khan's intimate friend Nawab Walidad khan's sister's daughter.

When the Revolution of 1857 Outbroke at Meerut on 10th May, 1857, Nawab Walidad Khan was present at Delhi. He returned after a period to the Fort of Malagarh with the Sanad of the Grovrennorship of Aligarh and Bulandshahar regions from the Emperor.

Being situated at the strategic geographical position the town of Hapur became of military importance for both the Indians and the British. It stood on both the highways from Meerut Cantt to Agra Cantt and from Delhi to Rohilkhand.

Nawab Walidad Khan handed the responsibility over to his fort and most trusted Friend Jabardast khan to hold his control on Hapur and nearby area upto Gulaothe.

Finally the Indian side was defeated by the East India company's forces and Zabardast khan all the alongwith his all the real brothers was executed. He was shut dead and his brothers was hanged till death at the spot where present tehsil of Hapur stands. Thus, a forgotten hero of 1857 in legends and history is covered in this paper.

Awareness Level of Listeners of Radio Bundelkhand.

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Abstract

Radio takes a significant place at grass root level for rural development. It is economical, and the cost per person to reach is very low. Radio has been one of the oldest mass media access points for information seekers. Community Radio outlets may carry news and information programming geared towards the local area, Community stations can be valuable assets for a specific region, because as operated, owned and driven by the communities, they serve. In the field of agriculture, farmers are information hunger specially, the information that suits to their local problem and solution in local. The Community Radio can play a significant role in revamping extension network not only for the purpose of dissemination of views and information, but also for education, advertisement and entertainment. The intent to which Radio Bundelkhand contributes to impressing the overall situation of listeners is not well documented and no such study is conducted over before for particular community radio on awareness of listeners. . Thus the present research study entitled Awareness and listening behaviour of the listeners of Community radio in Niwari district of MadhyaPradesh was undertaken. Out of three blocks Orcha block is selected purposively and study is completed with total of 120 listeners from 12 villages Orchha Block. Awareness level of the respondents revealed that majority (71.66%) of the community radio listeners had medium level of awareness.

Relationship between various selected variable like education, cosmopolitaness, extension participation, mass media participation and information seeking behaviour were found to be positive and significant relationship with the awareness level, whereas land holding negatively non-significant and age, gender, size of family, and annual income positive and non-significant.

An analysis comparing the mechanical properties and porosity of 316L stainless steel produced using various laser powder bed fusion metal additive manufacturing machines

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Abstract

Additive manufacturing is the latest demand in the market but even with the recent advancements in AM technology and process the adoption of additive manufacturing (AM) in many industries is impeded by issues related to the reproducibility and repeatability of AM parts. This becomes especially challenging when a part is qualified using optimized parameters on a specific part on a specific machine. The capacity to transfer these optimized characteristics to many machines must be understood if a producer wants to increase production to multiple machines. In this study 316L tensile testing samples were produced utilizing four distinct metal LPBF printers, all of which were equipped with the identical processing parameters and metal powder that came from a single batch supplied by the same source. This study reports on the correlation analysis between the input parameters and the output measurements that considerably differentiate in the mechanical performance and characteristics of the AM samples made on the various L-PBF metal additive manufacturing machines, even with the same set process parameters the elongation, ultimate tensile strength, and elastic modulus of additively manufactured 316L samples were found to be (4e42)%, (200e716) MPa, and (52e214) GPa, respectively, for the range of the input processing parameters and the resulting input volumetric energy density applied of 21e37 J/mm³.

Keywords:Additive Manufacturing, 316L stainless steel, laser powder bed fusion, porosity, strength

Pharmaceutical, phytochemistry and applications of *Acacia* gums

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ABSTRACT

Gum *Arabic* is a complex polysaccharide, comprised mostly of galactose, arabinose, rhamnase and glucuronic acid with ~25% proteins as an integral part of its structure. It is naturally obtained from *Acacia* tree which are known to grow in the sub Sahara region of the Sudan. The composition of gum Arabic is dependent to some extent on the location and age of the tree. The material has many applications and are uses in confectionary, beverages, pharmaceuticals, bakery, cosmetics etc. About 1,200 different species of *Acacia* flowering tree and shrubs all over the earth. Some parts of the trees used specifically for their medicinal and soothing properties. Leaves, flower, pod seeds and the bark of the *Acacia* tree have been used to stop bleeding; diarrhoea and coughing, healing ulcers, open wound and soothe sore throats. Ancient Egyptians used *Acacia* in paints and they used the wood to make wheels, dwellings and tools. *Acacia* tree are found in the NILE basin in India. They are indigenous to Ethiopia, Egypt, Angola; Americas are home to different types of *Acacia* as well. Certain species of the *Acacia* can be spotted growing wild in the Sinai Desert and in the area of Jordan. In spite of the tremendous quantity of gums employed in industry since the beginning of this century a real insight into the chemistry of these substances has been obtained only during the last thirty or forty years. Much work has been reported on the Gum *Acacia*, which is also known as gum *Arabic*. The gum is exudates of the genus *Acacia* of the series Gummiferae of the sub family-Mimosoidae, of the family-Leguminosae. An attempt is made to explain its utility and potential towards commercialization is made through this review.

Key words: Gum Arabic, *Acacia*, species and gum

An Analysis of Correlation and Path Coefficients for Constituent Traits in Linseed (*Linum usitatissimum* L.)”

Abstract

The investigation was carried out during the *rabi*2021-22 at AICRP on oilseed, college of agriculture tikamgarh. The experimental material consisted of 12 genotypes of linseed received from R.A.R.S, Sagar using randomized complete block design with three replication to determine correlation coefficients and direct and indirect effects on fifteen different characteristics. Grain yield is a complex trait influenced by multiple component characteristics, and direct selection for yield may not be the most effective approach. These component traits may also be interrelated. The study aimed to understand the relationships between crop production and its characteristics, focusing on genotypic correlations to minimize the influence of the environment. Association studies revealed that seed yield per plant exhibited positive phenotypic and genotypic correlation with 1000 seed weight followed by plant stand, seed per capsule, oil content in per cent, primary branch per plant, while exhibited negative phenotypic and genotypic correlation with days to flower initiation, days to 50% flowering, days to maturity, biological yield per plant, plant height, protein content and seed yield per hectare. Path coefficient is a tool to partition the observed correlation coefficient into direct and indirect effects of yield components on seed yield to provide clearer picture of character association for formulating efficient selection strategy. Thus, these traits are identified as the efficient and potential for indirect selection for the improvement of productivity in the present experimental material. Path coefficient analysis was studied considering fourteen component traits, out of which the traits viz., Days to 50% flowering, Plant height, number of capsule per plant, number of primary branches per plant, yield per hectare, number of seed per capsule, days to maturity and oil content exerted positive direct effect on seed yield per plant at phenotypic level. whereas days to flower initiation, biological yield per plant, protein content, plant stand, 1000 seed weight reflected negative direct effect on seed yield per plant at phenotypic level. At genetic level, positive direct effect on seed yield per plant with Days to 50% flowering, Plant height, days to maturity, plant stand, number of primary branches per plant whereas negative direct effect on seed yield per plant at genotypic level with, days to flower initiation, 1000 seed weight, protein content, number of seed per capsule, number of capsule per plant, days to maturity, yield per hectare and oil content were recorded.

Key words- Correlation, Genotype, Linseed, Phenotype, Path analysis, seed yield etc.

Approaches for Sustainable Groundwater Resources Management

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Abstract

Groundwater is an important natural resource with high economic value and sociological significance. Sustainable groundwater resource management implies the use of groundwater as a source of water supply, on a long-term basis, efficiently and equitably sustaining its quality and environmental diversity. Though clean water is a vital commodity for the well-being of humans, unfortunately, the availability of fresh water is unevenly distributed and greatly threatened where available due to problems associated with climate change, inefficient water management and pollution. Freshwater, which is required for drinking, irrigation, and other uses, is an extremely limited resource that is running out quickly. The 7.6 billion people on the planet, especially in the summer, cannot get enough fresh water to fulfil their needs. According to World Bank research, by 2030, there will be a 40% gap between the world's projected water demand and availability. Furthermore, it is believed that the greatest challenges to world security and prosperity are ongoing water scarcity, hydrological uncertainty, and extreme weather occurrences like floods and droughts. Proper management of water resources will guarantee their growth, equitable distribution, optimal use, and long-term sustainability. Sustainable economic development, environmental preservation, and poverty reduction depend on integrated water management. Fast expansion in population, urbanization, and industrialisation resulted in various difficulties in the water sector such as declining per capita water availability, and declining groundwater tables across many regions. In this study, various challenges of groundwater resource management and their restoration approaches will be discussed.

Keywords: Water Management, Groundwater Resources, Restoration, Sustainable Use

Systems Engineering Applications for Advancing Environmental and Occupational Health Research

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Abstract:

This work explores the integration of systems engineering principles and methodologies to address challenges in the fields of environmental and occupational health. Traditionally, these disciplines have been approached through a fragmented lens, with separate considerations for environmental factors and workplace conditions. However, the increasing complexity and interconnectedness of these domains demand a more holistic and systematic approach.

Systems engineering provides a comprehensive framework for analyzing, designing, implementing, and optimizing complex systems. In the context of environmental and occupational health, this approach allows for the examination of the intricate relationships between environmental factors, workplace conditions, human health, and overall system performance. By adopting a systems perspective, this research aims to enhance our understanding of the dynamic interactions within these systems and develop effective strategies for improving health outcomes.

The work reviews case studies and applications where systems engineering methodologies have been successfully employed to address environmental and occupational health challenges. The integration of data analytics, modeling, simulation, and optimization techniques within a systems engineering framework provides valuable insights for decision-makers and practitioners.

Furthermore, the work explores the potential benefits of adopting a systems thinking approach in policy development, risk assessment, and intervention planning. By considering the interdependencies and feedback loops within environmental and occupational health systems, it becomes possible to develop more robust and adaptive strategies for mitigating health risks and promoting overall well-being.

Keywords: Occupational Health, Environmental Health, Systems Engineering,

Comprehensive Examination of the Educational Situation of Women in Uttar Pradesh, with a Special Emphasis on Women's Empowerment and Progress.

Abstract

Education for women ensures that human progress will be improved and that future generations will be taught properly. Education is a key component of women's empowerment since it empowers them to respond to challenges, challenge expectations of how they should look, and fundamentally change their way of life. Indian women's education has been a notable diversion for the government as well as the general public, which was educated that women can play a crucial role in the advancement of the country. Education is a key component of women's empowerment since it gives them the ability to respond to challenges, defy expectations, and transform their lives. India is prepared to become a superpower by launching a new education policy in order to ensure that we can't ignore the importance of education and development in relation to women's empowerment. In rural areas, the advancement of women's education is moderate. This indicates illiterate, helpless, mistreated, and in large numbers, the women of our State. The best tool for improving a woman's position in the public eye is education from the perspective of training and development. This study examines the problem of women's educational access in Uttar Pradesh. Drawing from earlier writing and a variety of perspectives on women's education in Uttar Pradesh, the paper gives a map of the state of education for women and highlights some of the issues and hurdles to women's education.

Keywords: Women, Education, Empowerment, Development, Economic Development

Impact of rainfall on *Aedes albopictus* Populations in Agra

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Abstract

Aedes albopictus is the main vector of multiple diseases, such as Dengue, Zika, and Chikungunya. Due to modifications in weather patterns, its geographical range is continuously evolving. Temperature is a key factor for its expansion into regions with cool winters, but rainfall can also have a strong impact on the colonization of these regions, since larvae emerging after a rainfall are likely to die at temperatures below 10° C. As climate change is expected to affect rainfall regimes, with a higher frequency of heavy storms and an increase in drought-affected areas, it is important to understand how different rainfall scenarios may shape *Ae. albopictus*'s range. We develop a model for the population dynamics of *Ae. albopictus* coupled with a rainfall model to study the effect of the temporal distribution of rainfall on mosquito abundance. Using a fracturing process, we then investigate the effect of a higher variability in the daily rainfall. As an example, we show that rainfall distribution is necessary to explain the geographic range of *Ae. albopictus* in agra, an island characterized by rainy winters in the north and dry winters in the south. We also predict that a higher variability in the rainfall time distribution will decrease the maximum abundance of *Ae. albopictus* during the summer. An increase in daily rainfall variability will likewise enhance its extinction probability. Finally, we obtain a nonlinear relationship between dry season duration and extinction probability. These findings can have a significant impact on our ability to predict disease outbreaks.

Keywords : Temp. ,Rainfall ,*Aedes albopictus*

Industry 4.0 Revolutionizing Footwear Manufacturing: A Review

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Abstract

The advent of Industry 4.0 has ushered in a paradigm shift in the manufacturing landscape, with its profound impact extending to the footwear industry. This paper investigates the transformative applications of Industry 4.0 in footwear manufacturing, outlining how advanced technologies are reshaping traditional production processes and enhancing overall efficiency.

Industry 4.0, characterized by the integration of cyber-physical systems, the Internet of Things (IoT), artificial intelligence (AI), and data analytics, offers a holistic approach to modernize footwear manufacturing. In the realm of IoT, smart sensors embedded in manufacturing equipment and products enable real-time monitoring and control, optimizing production workflows. The interconnectedness of machines fosters a responsive and adaptive manufacturing environment, allowing for efficient resource utilization and timely identification of potential issues.

The integration of AI brings intelligence to footwear manufacturing processes, particularly in areas such as design, quality control, and customization. AI algorithms can analyze vast datasets to enhance product design, predict manufacturing defects, and facilitate the creation of personalized footwear, aligning production more closely with consumer preferences.

Big data analytics plays a pivotal role in harnessing insights from diverse sources, enabling manufacturers to make data-driven decisions. From supply chain management to demand forecasting, the application of analytics enhances agility and responsiveness, leading to reduced lead times and optimized inventory management.

Furthermore, cyber-physical systems, including the use of collaborative robots (cobots), contribute to the automation of labor-intensive tasks, improving overall production efficiency and reducing operational costs. This abstract emphasizes the need for a comprehensive strategy for the seamless integration of these technologies, ensuring a synergistic and interconnected manufacturing ecosystem.

As the footwear industry embraces Industry 4.0, this paper provides valuable insights for manufacturers, researchers, and policymakers. By understanding and leveraging the potential of these advanced technologies, the footwear industry can navigate the

challenges of the future, fostering innovation, sustainability, and competitiveness in a rapidly evolving global market.

Keywords: Industry 4.0, Footwear, Manufacturing, Data Science, AI

Effect of internet usage on social relationship: A review

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Abstract

The internet serves as a global communications system, linking computers and computer networks together. Internet usage has undoubtedly improved our convenience and quality of life. Through the internet, we can do business, meet new people, learn about other cultures, communicate with people worldwide, research, and more. People can use internet to stay connected to long-distance friends and family members or improve social communication with their partners, children, and relatives. Any intentional or unintentional interpersonal connection between two or more individuals, either alone or in groups, is referred to as a social relationship. Now a days, internet became a popular medium to establish social connections in adults. People started opening more time over social media and playing games. Everyone today has his/her own world of internet where he/she rules in their world. But life outside internet is different and unpredictable. People started more expressive over internet but less social in actuality. This paper provides a comprehensive review of literature on effects of internet on social relationships. The purpose of this review is to study the impact of internet on social relationships. Many studies have investigated that excessive internet use spoils our relationships. Hence, the objective of this paper is to highlight the use of internet and how internet usage affects our social aspects. The paper summarises the key findings and conclusions of previous work, the nature of studies that have been conducted and gives direction for further research.

Keywords: Social relationship, Excessive, Internet

STAT3: A novel therapeutic target for Alzheimer's disease with diabetes

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ABSTRACT

Alzheimer's disease (AD) is associated with the deposition of amyloid- β peptide ($A\beta$) and impairment of the blood-brain barrier (BBB), which leads to dementia. Nearly 80% of people with AD have some form of diabetes or hyperglycemia. Type 2 diabetes exacerbates neurodegeneration and dementia in AD. We hypothesized that the advanced glycation end product (AGE) produced in type 2 diabetes would amplify BBB impairment in AD. We conducted studies utilizing post-mortem human brains and human brain microvascular endothelial cells. We found that human brain capillaries from the post-mortem brains of AD patients with type-2 diabetes exhibited enhanced activation of STAT3 as compared to AD and age-matched control patients. In addition, we found significantly higher markers of BBB leakage in brain capillaries from AD patients with type-2 diabetes, as compared to AD and control subjects. Type-2 diabetes in AD is linked with the induction of AGE. To recapitulate it in the context of AD, we exposed primary human brain microvascular endothelial cells to $A\beta$ species ($A\beta$ 40 and $A\beta$ 42) individually and in combination with advanced glycation end product-bovine serum protein (AGE-BSA). Human brain microvascular endothelial cells were used to prepare an in vitro BBB model, and BBB was assessed by transendothelial electric resistance (TEER). We observed that the pharmacological and genetic inhibition of STAT3 ameliorates BBB dysfunction in the in vitro model of BBB. Our studies with human brain endothelial cells demonstrate that STAT3 mediates $A\beta$ -induced oxidative stress and the release of MMP, leading to disruption of the BBB. In conclusion, our studies indicate that the presence of AGE, along with $A\beta$, amplify STAT3 activation and other downstream effectors, leading to the exacerbation of BBB dysfunction.

KEYWORDS: Alzheimer's disease, diabetes, blood-brain-barrier, STAT3

Phytoremediation of heavy metal contaminated soil using

Benincasa hispida (L.)

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ABSTRACT

Heavy metals are contaminants that poses great environmental burden as they are hazardous to human, animal, plant health and the environment at large. In this study *Benincasa hispida* plant was used for the phytoremediation of lead, nickel, zinc, chromium, cadmium and grown in contaminated soil around Yamuna River with 25% vermicompost and 1mg EDTA . Sample of soil was collected from Mehtab Bagh, Agra and analyzed for certain pollutants Pb, Ni, Zn, Cd and Cr. Also evidence of accumulation of these metals in the various plant parts studied was established using the Inductively Coupled Plasma Optical Emission spectroscopy (ICP-OES). From the results, it was clear that the root of *Benincasa hispida* were found to contain higher concentration of Pb, Ni, Zn, Cd and Cr than the stem. After 90 days of experiment, the concentration of heavy metals in soil sample in decreasing order was found to be as Zn>Pb>Cr>Ni>Cd> respectively Finally, this study shows that the plant species was good accumulator of these heavy metals.

Keywords:Contaminated soil, Yamuna River, ICP-OES, Bioaccumulation

Uptake of Pb and Cd by *Pisum sativum* L.: Implications for Phytoremediation

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ABSTRACT

Soil contamination with toxic metals such as Lead (Pb) and Cadmium (Cd) as a result of worldwide industrialization has increased noticeably in the past few decades. Such heavy metals are highly poisonous when they enter the biological systems. A prevalence of chronic ailments, such as kidney and heart diseases, skin cancer and anaemia has been observed in people living for extended periods in areas polluted by heavy metals. Phytoremediation utilizes plants to decontaminate soil and water. It is a simple, cost effective, eco-friendly technology. Ideally a plant utilized for phytoremediation of heavy metals should have a high tolerance and accumulation of the same along with quick growth, good root proliferation and biomass production. Many crops are bred for quick growth and high biomass for greater yields. They are also bred for tolerance for diseases, insects and other stresses. Thus, such plants may be tested for phytoremediation applications provided they are then kept out of the food chain for obvious health risks. Therefore, a study was made to examine the uptake of vegetable crop: *Pisum sativum* L. (pea) to remediate Pb and Cd. Two concentrations of Pb and Cd were applied in soil. Soil and plant parts were tested at regular intervals for heavy metal content. Plant growth and physiological parameters were also tested.

Effectiveness of Bacteriophage against Colistin and Azithromycin Resistance and Synergism/Antagonism between the Two Antibiotics in Recent Clinical Isolates of *Enterobacter* Spp.

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Abstract

Aims: To determine the current levels of drug resistance of the two drugs colistin and azithromycin, its synergistic/antagonistic study against *Enterobacter species*, and effectiveness of phage over antibiotics. **Scope:** Multidrug-resistant organisms, such as "ESKAPE" organisms, have been widely dispersed and pose a severe threat to human health. The term "ESKAPE" refers to both their names and ability to evade the effects of widely used antibiotics with mechanisms that have evolved via evolution. One of the ESKAPE members with the capacity to acquire multidrug resistance is *Enterobacter spp.* Therefore, various tactics, such as the creation of novel antimicrobial drugs, resuscitation of antiquated antibiotics, and combination therapy, have been proposed to combat or postpone resistance. Phage therapy targets a single target while causing little to no harm to nearby components. Numerous investigations have demonstrated the effective use of bacteriophages in mitigating infections in living organisms. **Conclusion:** In conclusion, our research has demonstrated that *Enterobacter* develops resistance to two potential medications, namely colistin and azithromycin, in addition to the majority of antimicrobials. Because of the potential for failure with certain strains, the combination of colistin and azithromycin does not appear to be very promising. Therefore, further research should focus on the development of alternative approaches such as bacteriophage therapy, creating new plant-based and synthetic compounds, tiny polypeptides, and other alternative antimicrobials.

Keywords: Phage, Synergy, Colistin, and Azithromycin.

Exploring the therapeutic potential of natural compounds against sortase A from *Enterococcus faecalis*.

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Abstract

Nosocomial infections pose as one of the major health challenges since the last few decades. The rampant use of multiple drugs to treat nosocomial infection has resulted in the development of Multi-Drug Resistance (MDR) in these infections. Enterococcus faecalis (E. faecalis) is the most common bacteria responsible for nosocomial infections and its treatment is a major problem because it tends to produce biofilm which aids in sustaining MDR profile of E. faecalis. Sortase A (srtA) is an essential protein for bacterial survival, and it is also involved in biofilm production. Srt A is a housekeeping gene, it catalyzes the attachment of several virulence factors to the cell membrane and is a key player in E. faecalis pathology. We selected sortase as a target and characterized it which involved homology modeling of SrtA protein and molecular docking with selected natural compounds. The docking and modeling were validated through MD simulation. We found that Rutin trihydrate shows stable interactions with EFSrtA. An antibiofilm assay with Rutin trihydrate, revealed that it can clear biofilm and show enhancement in biofilm clearance when applied in combination with other antibiotics indicating a synergistic effect.

Key Words: Biofilm, Sortase A, Multidrug resistance, natural compounds, Enterococcus faecalis.

Nitrogen-Induced Alterations in Macronutrient Accumulation and Biochemical Pathways in Wheat (*Triticum aestivum*)

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Abstract:

Wheat, as a fundamental staple of global agriculture, plays a pivotal role in providing sustenance for an ever-expanding world population. With projections estimating a population exceeding 9 billion by 2050, the demand for food is on an exponential rise. Meeting this escalating need requires a significant surge in wheat production, far beyond historical trends. However, the key to achieving this growth lies in efficient nitrogen utilization, a critical element intertwined with plant physiology, influencing crop growth, yield, and nutritional composition. Nitrogen, an essential nutrient for plants, is both a vital resource and a potential environmental hazard. The challenge lies in striking a delicate balance between supplying sufficient nitrogen to optimize crop productivity while minimizing its negative impacts, such as water pollution and greenhouse gas emissions. This research aims to explore the intricate relationship between wheat, nitrogen, growth dynamics, and nutrient management to uncover sustainable practices that harmonize crop productivity with environmental responsibility. This study encompasses a comprehensive examination of the significance of nitrogen in plant growth, particularly in the context of wheat cultivation. It delves into the complexities of nutrient management in wheat farming, highlighting the challenges and opportunities. Additionally, it scrutinizes the effects of low nitrogen availability on wheat at various levels, from macronutrient dynamics to underlying biochemical processes. By rigorously investigating these aspects, we aim to provide valuable insights that enhance wheat's resilience to nitrogen limitation, improve its nutritional quality, and contribute to the long-term sustainability of global agriculture.

Keywords: Nutrient Management, Crop Productivity, Nutrient Use Efficiency, Nitrogen Deficiency, Macronutrient Dynamics, Biochemical Processes, Sustainable Agriculture.

Herbal nanoformulations as an emerging tool for ectoparasites management

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ABSTRACT

The use of herbal medicines has gained popularity throughout the world in recent times. Often seen as natural alternatives with fewer side-effects than synthetic medicines, these medicinal plants and their phytochemical constituents are thought to have potential applications in the management of a wide range of health conditions. Head lice infestation and nits are the major problem in humans. The most common species of head lice, *Pediculus humanus capitis* (De Geer) is mostly found in school going children. In the present study we synthesized and characterized essential oil nanoemulsion ratios (1:0.25, 1:0.5, 1:1, 1:1.5) with thermodynamically stable ratio to be 1:1. The Dynamic Light Scattering analysis showed that the droplet size of nanoemulsion was $54.0 \pm 0.242\text{nm}$ and Polydispersity Index was measured as $0.22+0.007$. In this bioefficacy study revealed that nanoemulsion exhibited 20% mortality after 30min at 800ppm concentration, which increased upto 50% and 100% after 4 h and 6 h. respectively Hence, this nanoemulsion could be used as a herbal pediculicide.

KEYWORDS: Essential oil, *Pediculus humanus capitis*.

Molecular docking study on phyto-constituents of clove essential oil against mosquito juvenile hormone binding protein and potential effects on *Aedesaegypti* metamorphosis.

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ABSTRACT

Mosquito-borne diseases pose significant threats to global public health, necessitating the exploration of novel and sustainable approaches for vector control. In this study, molecular docking was used to investigate the potential growth regulatory properties of phytochemicals derived from clove essential oil against the target proteins (mJHBP, PDB:5V13) involved in the life cycle of mosquitoes. The mosquito life cycle consists of four stages: egg, larva, pupa, and adult involving complete metamorphosis. Clove (*Syzygium aromaticum*) is an aromatic plant rich in volatile compounds and antioxidants comprising major constituent as eugenol, eugenyl acetate, caryophyllene, humulene etc. Using molecular docking software's binding interactions between the phytochemicals and the target proteins (mJHBP) were studied. The results revealed detailed understanding the binding modes, affinity, and interaction energies, providing a comprehensive understanding of the potential molecular mechanisms underlying the growth regulatory properties of clove essential oil compounds. The insights gained from this research may pave the way for the development of sustainable and eco-friendly mosquito control strategies, addressing the pressing need for innovative approaches in the fight against mosquito-borne diseases.

KEYWORDS: Molecular docking, clove essential oil (phyto-chemical composition), juvenile hormone binding protein, *Aedesaegypti*.

Comparative effect of Silicon and titanium dioxide nanoparticles on the performance of tulsi- a medicinal plant

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Abstract

Nanoparticles (NPs) have gained considerable interest among researchers in the field of plant biology, particularly in the agricultural sector. The objective of this study was to investigate the effect of silicon dioxide (SiO₂) or titanium dioxide NPs (TiO₂) through root dipping and foliar spray on tulsi (*Ocimum sanctum*) on the growth, physiological, and biochemical parameters. Different concentrations 0 (control), 50, 100, 150 and 200 mg/L of SiO₂ or TiO₂ NPs were applied; at 120 days after planting, the sampling was performed to evaluate various parameters. The results demonstrated that both SiO₂ and TiO₂NPs improved the growth, photosynthetic traits, elemental content in a dose dependent manner. SiO₂ or TiO₂NPs application stimulated activity of several enzymes and reduced oxidative stress by promoting antioxidant machinery. According to our findings, the best concentration of SiO₂ and TiO₂ were determine to 150 mg/L and 100 mg/L respectively, as it shown the most significant effects among others concentrations evaluated. Moreover, in between the two modes, the root dipping treatment was found to be less significant than the foliar application.

KEYWORDS: Nanoparticles, Growth, Photosynthesis, Oxidative stress

Foliar application of phytosynthesized Cerium oxide nanoparticles on photosynthetic and antioxidant properties of Mustard

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Abstract

Nanotechnology is one of the most recent and rapidly developing fields of science and engineering. The application of various metal and non-metal nanoparticles (NPs) in the field of agriculture sciences is increasing significantly. Cerium oxide nanoparticles (CeO₂NPs) are one of them having shown their positive application in various vegetable crops. In the present study, CeO₂NPs of three different sizes were green synthesized whose crystal size were found to be 4.5 nm, 8.5 and 15.4 nm and they were spherical in shape. Foliar application of each NPs at different concentrations (50 ppm, 100 ppm and 150 ppm) were performed in mustard crop. Result showed that all concentrations of these NPs improved growth, photosynthetic and gaseous exchange parameters in mustard. Furthermore, it also regulated redox homeostasis, by maintaining balance between reactive oxygen species (ROS) and antioxidant defense system. However, NP having size 4.5 nm at 100 ppm concentration was found to be most effective in improving all the above parameters studied.

**Abstract for Poster Presentation in Sub-Theme Agriculture and
Veterinary Science**

**DRY PRESERVATION OF ANATOMICAL SPECIMENS BY ADVANCED
PLASTINATION TECHNIQUE: AN ALTERNATIVE TEACHING AIDS**

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ABSTRACT

The present study was conducted with the aim to preparation of plastination models of right kidney of horse, left kidney of ox, testis of goat and right hind limb of buffalo calf. The old formalin fixed specimens available in department of veterinary anatomy were utilized for plastination process. The necessary dissection was carried out on these anatomical specimens to expose the individual anatomical structures and elements, and then specimens were thoroughly rinsed in clean water to remove excess formalin. After that specimens were placed in acetone bath for removal of water and fat. Then clearing of specimens was performed in chloroform solution. After clearing, specimens were subjected to forced impregnation with 1:1 ratio of chloroform and melamine solution for 4 to 5 days. The curing of specimens was done by soaking in 9:1 ratio of melamine and hardener. The prepared anatomical models were dry, odorless, and easy to demonstrate the gross morphological details. These models can be preserved well to minimize the use of animals and effectively utilized as teaching aids in undergraduate teaching of veterinary anatomy.

KEYWORDS: Anatomical, Cadaver, Plastination, Preservation, Teaching aids

Role of Electronic National Agriculture Market e Nam in Agriculture Marketing in India

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Abstract

The agriculture sector in India remained conventional even after independence, despite planned agricultural growth activities. The absence of agricultural markets and an efficient marketing system had gradually decreased the dominance of the agriculture sector in the Indian economy. Efficient marketing of agricultural products is a prerequisite for the development of the sector.

An important initiative was in the form of the Agriculture Produce Marketing Committee (APMC). However, it lost its relevance over time due to the limited scope of trading, inefficient trading mechanisms, and complex supply chain. There was an urgent need to remedy the flaws of the existing agricultural marketing system. The internet has the potential to become an effective means for linking producers with buyers without intermediaries, quick payments and transparency in trading. The advent of technology and reviewing the success of Karnataka's e-market (i.e., ReMS) had pushed the Government of India (GOI) to establish a modern agricultural marketing system.

To address the above-mentioned challenges, a nationwide electronic trading platform, i.e., electronic-National Agriculture Market (e-NAM), was instituted for transparent sales and price discovery in controlled markets. The emergence of electronic platforms in agricultural marketing in India is referred to as the landmark initiative. It was believed to solve all marketing challenges confronting stakeholders, including producers, commission agents, traders, consumers, and logistical suppliers.

Though e-NAM has enacted many benefits to its stakeholders, it was hypothesised that the stakeholders may not have encashed all the benefits. The field visits to e-NAM mandis and past literature revealed that e-NAM has implementation bottlenecks. This research aims not only to analyse the impact of e-NAM on the arrival and price of the commodities but also to assess the benefits and challenges in the adoption of e-NAM for farmers as well as traders.

Adopting any technology like e-NAM or a new marketing method is a psychological process that helps stakeholders adopt e-NAM technology in agricultural marketing. The

study analysed the application of Theory of Diffusion of Innovation, Technology Adoption Model, Multiple Stakeholders Theory, Theory of Change, and Institutional theory.

This study adopts an exploratory research design to understand the construct clearly and descriptive to study several hypotheses through a survey of 943 farmers and traders of nine different commodities using stratified disproportionate and simple random sampling techniques from eight different states of twenty-seven e-NAM mandis. The study is conducted to identify the crucial factors involved in the success and implementation bottlenecks of e-NAM for farmers and traders.

Data were analysed using various statistical tools such as paired t-test, analysis of variance (ANOVA), exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The study found that availability of information; transactional benefits, freedom of choice; and self-reliance are the critical factors in realising the benefits by farmers. However, the study found that real-time information, technological benefits, and transparency in trading are the critical factors for traders to realise the benefits of e-NAM.

The study reveals a difference x in benefits for farmers among different commodity groups whereas, there is no difference in the traders' benefits among different commodity groups.

With the advancement of e-NAM, few challenges made the trade difficult and problematic for farmers and traders. The challenges faced by the farmers while adopting e-NAM are infrastructural challenges, technological challenges, institutional inefficiency, capability challenges, and scepticism which are the critical factors in restricting the progress of e-NAM. On the other side, from the trader's point of view, the study found that infrastructural challenges, technological challenges, and handling challenges are the key factors in restricting the progress of e-NAM. The study also reveals that the challenges faced by farmers are not uniform across different commodity groups. In contrast, there is no difference in the challenges faced by traders among different commodity groups.

The extracted factors were confirmed with the measurement model fit criteria. The extent to which the results of this study can be generalised remains to be further investigated. This research also highlights the need for technology adoption by all the stakeholders in the success of e-NAM. It is an attempt to suggest some suitable measures for further improvement and implementation of the scheme. The study suggests constructing a practical solution, such as organising awareness camps and training workshops for sensitisation of stakeholders. The overall study concludes that e-

NAM is in the right direction, but it still needs to make the system more efficient and vibrant.

Keywords: Agricultural Marketing, e-NAM, Farmers, Mandis, Traders, Technology Adoption.

Exploring the Research Landscape of Traditional Medicinal Plants in the Management of Typhoid Fever: A Bibliometric Analysis (2021-2023)

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ABSTRACT

Traditional medicinal plants have long been revered for their potential in combating typhoid fever, offering promising avenues for alternative treatments rooted in natural remedies. This bibliometric analysis explores the burgeoning research landscape surrounding traditional medicinal plants and their potential in addressing the impact of typhoid fever. This study was focused to systematically evaluate existing literature, revealing prevalent trends, citation impact, influential authors, active organizations, and global involvement. The extensive study of 675 articles highlighted significant trends in traditional medicinal plant research against typhoid fever, with 87 articles published in 2021 and the highest citations of 709 in 2004. Elfito and Hary Widjajanti led with six influential documents each. Moreover the "Journal of Ethnopharmacology" by Elsevier stood out with 29 documents, 1139 citations, and an average of 39.28 citations per article. The article authored by Falagas in 2008 held the highest number of citations in Clinical Infectious Diseases, making it the most referenced work on the citation charts. The University of Yaoundé I utilized 13 medicinal plants, comprising 23.69% of 308 articles, while India demonstrated robust research with 69 documents, 1200 citations, and an average citation per document of 17.39. Collaborative networks involved 2894 researchers, showcasing 12 tightly knit authors. Globally, 74 countries contributed, forming 12 collaborative groups, and 23 journals focused on typhoid fever using bibliographic coupling, identifying five distinct clusters within the research domain. Overall, this study offers a comprehensive understanding of traditional medicinal plants' role in combating typhoid fever, providing valuable insights for researchers, healthcare professionals, and policymakers navigating the landscape of plant-based therapies in global health.

Keywords: Bibliometric Analysis; Collaborative Network; Scholarly Publications; Traditional Medicinal Plants; Typhoid Fever

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ASSESSMENT OF YIELD CRITERIA IN BREAD WHEAT THROUGH CORRELATION AND PATH ANALYSIS ((*Triticumaestivum* L.)

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Abstract

The study was conducted at JNKVV, Regional Agriculture Research Station Sagar (MP) during 2022-2023. The present study was carried out to investigate the correlation and path coefficient analysis in 48 genotypes of rabi bread wheat varieties, which were collected from AICRP, Wheat Improvement project. This study was aimed to characterize yield components and plant traits related to grain yield. Correlation and path analysis were carried out in wheat genotypes grown under irrigated and restricted irrigation field conditions. Significant genotypic differences were existed among the genotypes. Correlation coefficients were computed for grain yield plant⁻¹, tillers plant⁻¹, spikelet's spike⁻¹, 1000 grain weight, spike length, days to heading, days to maturity and plant height from the F1 crosses developed from four lines and three testers including their parents. The results revealed that grain yield plant⁻¹ was positively and significantly correlated with number of tillers plant⁻¹ and days to maturity at genotypic level but non significantly correlated at phenotypic level. Days to maturity had positive genotypic correlation with grain yield plant⁻¹, number of tillers plant⁻¹ and 1000-grain weight. Days to maturity and tillers plant⁻¹ had positive direct effect on grain yield plant⁻¹ also. Therefore, more days to maturity and more tillers plant⁻¹ would be important selection criteria for improved grain yield plant⁻¹ in the breeding material studied. Therefore, grain yield plant⁻¹, days to maturity and more tillers plant⁻¹ would be important selection criteria for improved grain yield plant⁻¹ in the breeding material studied.

Keywords: Genotypic correlations, path coefficient analysis, phenotypic correlations, winter bread wheat, yield components

Microbial Bioremediation of Brass Contaminated Soil and Water: A Review of Strategies and Advances in the Moradabad Region.

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ABSTRACT

Industrial activities in the Moradabad region have led to the widespread contamination of soil and water with brass, posing significant environmental and public health concerns. Brass, a metal alloy composed primarily of copper and zinc, is extensively used in various industrial processes, contributing to elevated levels in effluents discharged into the environment. Microbial bioremediation has emerged as a promising and environmentally sustainable approach to mitigate brass contamination. This paper provides a comprehensive overview of microbial bioremediation strategies employed for the restoration of brass-contaminated soil and water in the Moradabad region. The study begins by exploring the sources and pathways of brass contamination in the industrial effluents of Moradabad, emphasizing the urgent need for effective remediation measures. Subsequently, the paper delves into the microbial mechanisms underlying brass biotransformation and detoxification. Various microbial species, including bacteria, fungi, and actinomycetes, are discussed for their ability to sequester, accumulate, or catalyze the degradation of brass components, thus aiding in the remediation process. Furthermore, the review highlights recent advancements in biotechnological approaches such as genetically engineered microorganisms and microbial consortia, showcasing their potential to enhance the efficiency of brass bioremediation. Additionally, the influence of environmental factors, such as pH, temperature, and nutrient availability, on the success of microbial remediation strategies is examined to provide a holistic understanding of the process. The paper also addresses challenges and limitations associated with microbial bioremediation in the Moradabad context, including the adaptability of microbes to local conditions and the scale-up feasibility of bioremediation technologies. Moreover, the socio-economic impacts and regulatory aspects of implementing microbial bioremediation are considered, offering insights into the broader implications of these strategies. In conclusion, this study synthesizes existing knowledge on microbial bioremediation of brass-contaminated soil and water in the Moradabad region, emphasizing the potential of this approach for sustainable environmental management. By bridging the gap between research findings and practical applications, the paper aims to contribute to the development of effective and site-specific bioremediation strategies tailored to the unique challenges posed by brass contamination in the Moradabad industrial landscape.

KEYWORDS: Microbial bioremediation, Microbial consortia, Socio-economic impacts, Environmental factors, Sustainable environmental management.

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For Oral presentation

SUSTAINABLE ENHANCEMENT OF COGNITIVE ABILITY IN SCHOOL CHILDREN

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ABSTRACT

The improvement in the cognitive system in children contributes to a sustainable healthcare habitat. Neurotransmitters mainly catecholamines and small peptides play a relevant role in the cognitive processes of the body. The modulation of neurotransmission could be achieved by persistent educational interventions. The present study focuses on how educational interventions affect the alleviation of neurochemical function, here for instance Serotonin is monitored. The study was conducted on subjects of 6-14 years who were attending a medical camp (conducted under the National Service Scheme) organized by DEI to ensure good health, quality education, and learning opportunities. Serotonin (5-HT) is a neurotransmitter that is synthesized by the biosynthesis of Tryptophan and is secreted by serotonergic neurons. Serotonin is responsible for various behavioral responses such as happiness, anxiety, aggression, and depression. Learning influences the behavior of the individual and the levels of neurotransmitters in biological fluid change with the change in behavior. The results showed a significant difference in the salivary serotonin levels of individuals belonging to different socio-geographical backgrounds, time of exposure to the educational interventions, and age.

KEYWORDS: Neurotransmitters, Serotonin, Educational Interventions, Sustainable health care.

Impact of Microfinance on Income Level of the beneficiaries: A Case Study on a select Villages of Cachar District, Assam

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Abstract

Microfinance program claims to provide access to capital and allow the poor to climb the economic ladder. The present study aims to know the impact of microfinance credit on the income level of the beneficiaries and to identify the socio-economic status of the beneficiaries. The study is based on five selected villages (Lalang part- IV, Ujan Tarapur, Pailapool, Fulertal & Kashipur) of the Cachar district of Assam, India. The Villages and the samples of 150 respondents are selected based on purposive and convenience methods. The elements used in the present study to identify socio-economic status are Age, gender, educational status, marital status, family size, house ownership status, occupation, and household monthly income. To understand the impact of microfinance on the income level of the beneficiaries, the researcher considers the household monthly income before taking microfinance credit and after (at least six months old) taking a microfinance loan. The collected primary data are analyzed using appropriate statistical tools such as percentage, mean, and paired samples t-tests. The study found that there is a significant difference in household monthly income levels before and after availing of a microfinance loan. The study concludes that there is a positive impact of microfinance on the income level of the beneficiaries.

Keywords: Microfinance, Poverty-Alleviation, MFI, Micro-credit, income-level

Web spinning and non-web spinning spiders of semi-arid habitat- their conservation strategies and biotechnological perspectives

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ABSTRACT

In most ecosystems and in nature, spiders are common. Currently 50, 398 species belonging to 4280 genera and 132 families were recorded from all over the world out of which 1686 species of spiders belonging 60 families and 438 genera were updated taxonomically from the Indian region and 52 species are recorded till date in semi-arid habitat of Agra region. There are two types of spiders; web-building spiders and non-web building spiders, which are also called hunting, ground or running spiders. The history of spider webs dates back over 100 million years. There are currently five different kinds of spider webs: funnel, cobweb, sheet, orb, and tubular. Spiders despite being a group of invertebrates that inhabit habitats, have been relatively overlooked by scientists for a long time. However they play a role, in the agro ecosystem. Agra, located in the southwest of Uttar Pradesh State is part of the Gangetic plains, in North India. Its geographical coordinates are between 26°44'N and 27°55'S latitude and 77°26'W and 78°32'E longitude. The climate, in Agra is known for its temperature fluctuations throughout the day high saturation deficit and low rainfall. On average Agra receives 760.4 mm of precipitation with temperatures ranging from 23°C to 65°C. In the survey conducted in this habitat two spider families, Salticidae (non-web spinning) and Araneidae (web spinning) were identified as the prevalent. In contrast, the following spider families are found in the semi-arid habitat: Hersilidae (web spinning), Thomisidae (non-web spinning) and Sparassidae (non-web spinning), while the other spider families are Pholsidae (web spinning) and Lycosidae, Oxyopidae, Gnaphosidae, Tetragnathidae, Corinnidae all are non-web spinning . This paper also delves into the role of these web and non-web spinning spider species, in the ecosystem their contribution to pest control and explores their web silk potential for biotechnology and their economic significance, for conservation purposes.

KEYWORDS: Semi-arid habitat, Web- Spinning, Non-Web Spinning, Araneae. Silk protein.

Title - Mode of Action of Biorational Pesticides on Major Pests of Brinjal Crop

LOVELY PROFESSIONAL UNIVERSITY, PUNJAB

Submitted by - SONAWANE BHUSHAN LAXMAN

Abstract

Only a small number of studies that attempted to manage brinjal pests reported using biological pesticides, such as eco-friendly newer molecules, microbial, and botanical pesticides, for effective pest management. The majority of the studies that attempted to manage brinjal pests reported using chemical pesticides. To lessen issues like pesticide resistance, pest resurgence, environmental pollution, toxic residues on food, poisoning of non-target species, etc., connected with the use of synthetic agrochemicals, screening the biopesticides for brinjal pest control is a potential approach. Biopesticides like Spinosad, Neem seed kernel extract (NSKE) and Entomopathogenic Fungi (EPF) is helpful in managing brinjal pests successfully through their special mechanism. Spinosad disrupted neuronal function by activating motor neurons, harmed the insect's nervous system, and ultimately led to paralysis and death by producing uncontrolled muscular spasms. The most effective of these is Neem seed kernel extract (NSKE), which acts as an antifeedant, antimicrobial, larvicidal, ovipositor deterrent due to presence of azadirachtin, salanin, and melandriol there is a reduction in the larva's desire to feed because of the presence of these compounds. Entomopathogenic Fungi (EPF) like *Beauveria bassiana*, *Metarhizium anisopliae* and *Verticillium lecanii* are used as insecticides to kill pests in a variety of ways, such as by starving them or by producing toxins, extracellular enzymes including proteases and chitinases, target selectivity, strong reproductive ability, rapid generation time, and extended life are only a few of the biological traits of EPF that are crucial for the biocontrol of insect pests.

Keywords: Brinjal pest, *Beauveria bassiana*, *Metarhizium anisopliae*, Neem seed kernel extract (NSKE) and *Verticillium lecanii*

Population Dynamics of *Melanagromyza obtusa* (Malloch) (Diptera: Agromyzidae) on pigeonpea in relation with weather parameters

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Abstract

Population dynamics of pod fly, *Melanagromyza obtusa* (Malloch) of pigeonpea (*Cajanus cajan*) in Punjab during *Kharif* crop, 2022-23 at agricultural farm at Lovely Professional University, Jalandhar, Punjab (India), in a randomized block design with three replications. Pigeonpea (*Cajanus cajan*) are an economically valuable crop that provides major source of vegetable protein and high nutritional value. However, other biotic and abiotic elements, such as weather, temperature, insect pests, and various diseases, impact potential crop yield. Studies on the population dynamics of the pigeonpea pod fly in the Punjab region's agro-climate showed that it presents from the third week of October 2022 to the fourth week of January 2023. Pigeonpea pod fly infestation was noticed in the *Kharif* crop, along with its sequence among defoliating insects, although it persisted up until the crop was harvested. The pest activity started with the inception of pod formation and sustained though at different level, throughout the crop's reproductive cycle. The first time *M. obtusa* larvae and pupa was appeared in the 42nd meteorological standard week (MSW). The maximum larval population of 81 larvae per 100 pods was reported in the 49th MSW, whereas the maximum pupal population of 75 pupae per 100 pods was recorded during the 52nd MSW. According to data analysis, the population of larvae showed a non-significant Positive correlation with minimum temperature (0.131) and maximum temperature (0.316) during 2022-23, whereas the relative humidity showed a non-significant positive correlation (0.122) while relative humidity exhibited a significant correlation (0.854) pupal population also showed a significant negative correlation with minimum temperature (-0.669) and maximum temperature (-0.595).

Key words: Correlation; *Melanagromyza obtusa*; Pigeonpea; Randomized Blocks Design

Insight into the Neuronal Changes in Goat Brain using Golgi-Cox Staining Approach

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ABSTRACT

The brain is one of the most complex and important organs, with approximately 100 billion neurons communicating through trillions of connections known as synapses. The soma (cell body), dendrites, axon, and axon terminals are the four functional units of a neuron. Each brain region plays a unique role in signal generation and communication with other nerve cells. Higher mammals can provide an important platform for the gyrencephalic brain, which is similar to humans (*Homo sapiens*) and has an exquisite cytoarchitecture. The goat (*Capra hircus*) brain has a specific grey to white matter ratio and the brain growth spurt in the prenatal period is similar to human brain. The colour and texture of the goat brain is alike that of human brain. Neuronal architecture changes are important in brain development, neuroplasticity, and ageing, and they are also linked to a variety of neurological diseases. The Golgi staining technique allows the examination of neuronal arborization and connections. The principle underlying Golgi staining is the metallic impregnation of neurons. Neuronal cell bodies, dendrites, and dendritic spines are visible after staining. In a neurohistological brain study, neurons are visualized in detail, including their cell bodies, dendritic arbours, dendritic spines, axons, and synapses. This method allows for precise and accurate analyses of morphological changes that occur as people age. The obtained results demonstrated that as biological age (juvenile to adult) progresses, the brain maintains neuronal changes, resulting in changes in neuronal number, axonal size, and dendrite branching. According to this study, the density, structure, and dendritic arborisation of neurons in the goat brain increase with age.

KEYWORDS

Cytoarchitecture, ageing, gyrencephalic, dendritic-arborization, synapses.

Pharmacological Evaluation of *Michelia champaca* Linn Extracts on wound healing Activity

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ABSTRACT

Belonging to the family Magnoliaceae, one of the most important plants is *Michelia champaca* Linn. It is evergreen, and highly distributed in areas such as the eastern Sub-Himalayan tract, China, South India, Myanmar, and West Bengal. This plant is useful either for ornamental purposes or as traditional ethnomedicine. It consists of chemical constituents like β -sitosterol, sesquiterpenes, parthenolide, dihydro-parthenolide, Gallic acid, quercetin, lirodine, essential oils, starch, etc. Traditionally used for rheumatism, gout, acting as a diuretic, and febrifuge, among others. It has profound pharmacological activities such as anti-diabetic, anti-microbial, anti-inflammatory, diuretic, anti-ulcer, analgesic, burn wound healing, anti-helmintholytic, procognitive activity, antioxidant, and some other activities.

Based on the presence of active chemical constituents such as Gallic acid, Quercetin, and β -sitosterol, the wound healing activity will be assessed. This abstract aims to provide glanced information about a comparative wound healing study between two extracts of *M. champaca*. The leaves were shade dried and subjected for the ethanolic and aqueous extraction. The models utilized for this activity will be the Incision & Excision wound model.

KEYWORDS: Ethnomedicine, Gallic acid, wound healing, Incision, Excision

Future Therapeutic Potential of *Syzygium cumini*: An Important Medicinal Plant of Myrtaceae family

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ABSTRACT

Syzygium cumini, commonly called as Indian blackberry is a versatile plant known for its various medicinal properties, belongs to the family Myrtaceae. It is native to South Asia, and has been referenced in various traditional systems of medicine, such as Ayurveda and Siddha, Unani for its therapeutic benefits. In Ayurveda, *jambul* is highly valued for its ability to treat conditions like diabetes, digestive disorders, and general debility. All major plant part possesses various therapeutic activities; the seeds of *Syzygium cumini* contain phytoconstituents with anti-diabetic, antioxidant and antimicrobial properties. These properties make them effective in fighting against harmful free radicals, reducing inflammation, and protecting against various infections. Further research in the fields of reverse pharmacology as *Syzygium cumini* could be proven more potential more natural ingredient to develop pharmaceutical formulation to treat chronic diseases, such as diabetes, cardiovascular disorders, and microbial infections. This will facilitate the development of more effective pharmaceutical formulations and standardized herbal products.

KEYWORDS

Syzygium cumini, chronic diseases, Diabetes cardiovascular disorders, antioxidant.

Efficacy of biorationals for the management of Fall Army Worm, *Spodoptera frugiperda* in Maize

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Abstract

An experiment was conducted during 2023 in field condition, Agricultural farm, School of Agriculture, Lovely Professional University, Phagwara, Punjab to check the effectiveness of different biorationals against fall army worm *Spodoptera frugiperda* in maize. It was observed during the experiment that, the pest attacks all the stages of crop starting from seedling to maturity. Early instar larvae were seen mostly on leaves of maize with characteristics pin or shot hole symptoms. Later instar larvae were confined to deep whorls, leaving typically ragged like appearance and fed on the reproductive stage of the crop especially tassels and developing cobs resulting in quality and quantity loss of maize produce. After the application of treatments the data was conducted recorded on 1, 3, 5,7,10 and 15 days interval. The results revealed that the spinosad 45 SC found to be most effective biorational to manage the population of Fall Army worm followed by *Bacillus thuringensis*, neem oil and *Metarrhizium anisopliae*,s garlic clove extracts found least effective to control the population of FAW.

Key words: Fall army worm, management, biorationals, Spinosad and *Beuveria bassiana*

Nanopharmaceuticals: Emerging Frontier in Wound Healing

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ABSTRACT

Therapeutic agents at nanoscale start possessing unique properties and wide range of applications thus have emerged as a significant tool in the area of wound healing. There are various types of nanoparticles, including metal and metal oxide (Silver (Ag), Gold (Au), Platinum (Pt), Selenium (Se), Copper (Cu), Zinc Oxide (ZnO), Tantalum Oxide, Iron Oxide, and Titanium Dioxide nanoparticles), carbon-based (Graphene, Graphite Oxide, Graphite, Reduced Graphene Oxide nanofilms, Single-walled and Multiwalled Carbon Nanotubes, and Fullerenes), and polymeric nanoparticles. Nanopharmaceuticals exhibit their wound healing effect due to their potentiated antibacterial, anti-inflammatory and antioxidant effects. Silver nanoparticles of therapeutic agents, in particular, have been extensively used in wound care management due to their innate antimicrobial property (exhibit size-dependent generation of reactive oxygen species, which contributes to their antimicrobial activity), that can directly aid in wound healing due to their essential characteristics or serve as improved delivery route for therapeutic agent. Nanopharmaceuticals have shown potential in preventing infection and enhancing cell proliferation, extracellular matrix deposition, angiogenesis, and regulating inflammation.

KEYWORDS

Nanopharmaceuticals, Wound Healing, Silver nanoparticles Regeneration, Carbon-based Nanomaterials

An Analysis of Emotional Intellect and its Impact on Demographic Factors among Physicians

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ABSTRACT

This study has estimated the level of emotional intelligence among physicians in Delhi-NCR and the effect of segment factors (age, experience, income etc.) on emotional intelligence level of physicians. To measure the emotional intelligence level of 350 physicians from Delhi-NCR, the Emotional Intelligence Scale developed by Wong & Law was used. Physicians were chosen on the ground of judgemental sampling technique. Independent t-test and ANOVA were used for the analysis. The mean score and standard deviation of emotional intelligence among physicians was found to be 5.5207 and 0.79239 respectively. These values proposed that majority of physicians felt that their emotional intelligence was high. The outcomes likewise uncovered that emotional intelligence doesn't contrast across gender, while age and experience impact the emotional intelligence levels of physicians.

KEYWORDS: Emotional intelligence, physicians, demographics, judgemental sampling technique

Antioxidant, antiaging, antistress, and ROS scavenging activity of hesperidin in *Caenorhabditis elegans*

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ABSTRACT

Since aging is the most important risk factor for various diseases, the discovery of a wide range of chemical modulators of aging in model organisms encourages new strategies for targeting age-associated diseases. Simple genetic manipulation leads to long-lived and healthy animals, so any compound with a similar effect would prove a boon to mankind. Hesperidin is a flavonoid from citrus species that has numerous biological properties, particularly antioxidant, anti-aging, and antistressor. In the present study, the effect of different pharmacological doses (100, 150, and 200 $\mu\text{M}/\text{mL}$) of hesperidin was used to determine their impact on life span, thermotolerance, and ROS scavenging activities in *C. elegans*. The results revealed that 100 $\mu\text{M}/\text{mL}$ of hesperidin significantly extended the life span of *C. elegans*. The compound also proved to be a strong free radical scavenger and increased resistance against thermal stress. It is also suggested that the protective and life span extending the action of the hesperidin is not only due to its antioxidant capacity but may also be mediated by modulation of some signaling pathways. Thus, in addition to all the known medicinal properties of hesperidin, it can increase stress tolerance and life span in *C. elegans*.

KEYWORDS: Aging, antioxidant, *Caenorhabditis elegans*, Flavonoid, Hesperidin, Lifespan, Oxidative stress.

A STUDY ON CAUSES OF LAPSATION FROM THE INSURANCE POLICY HOLDER PERSPECTIVE OF VIJAYAWADA CITY

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ABSTRACT

The human experience is replete with many hazards and uncertainties. One effective approach to mitigating the impact of these risks and losses is to get insurance coverage. Insurance plays a significant role within the financial sector of the Indian economy. Life insurance has emerged as an essential component of the human existence. As it is the essential all the earning people are approached to buy the policy, but as life transforms so many factors are influencing them to not to pay the premium and that leads to lapsation. If the rate of lapsation is huge its impact on financial health of the company. The present study is aimed at causes of lapsation from the policy holder perspective and collected data from the selected sample of policy holders in the Vijayawada city, Andhra Pradesh. The collected sample is analysed with statistical tools for draft conclusions and meaningful suggestions.

Keywords: Insurance, Lapsation, Policy, Policyholder, and Premium

Diversity of tephritids fruit fly (Tephritidae: Diptera) from different fruit orchards in Jalandhar

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Abstract

Fruit flies (Diptera: Tephritidae) are among the principal phytophagous insects of fruit and vegetables. Their larvae feed on the pulp or seeds of fruits to complete their development, which favors the entry of pathogens and early fall of the fruits, damaging fruit production. Currently, research is being conducted at the Entomological Research Farm, Lovely Professional University, Phagwara, Punjab, on the diversity of Tephritids fruit fly on various hosts from 2021 to 2022. Traps were placed at different locations in the different orchards. During the month of October, 2021 where the maximum temperature recorded was 29°C the population was reached its peak 410 total fruit fly/trap/week while the population decreased with decreased in temperature and population is low in the month of April, 2022 (17 total fruit fly/trap/week). Four species were trapped during the research period; *Bactrocera dorsalis*, *Bactrocera correcta*, *Bactrocera zonata* and *Zeugodacus cucurbitae*. The dominant species was found to be *B. zonata*. The correlation between maximum temperature and species *B. dorsalis* shows a highly significant positive correlation ($r= 0.915^{**}$), minimum temperature ($r= 0.852^{**}$), morning RH ($r= -0.898^{**}$), evening RH ($r= -0.812^{**}$) and rainfall ($r= -0.357$). Rainfall has shown a non significant negative correlation in 2021 and non significant positive correlation in the year 2022 of species *B. dorsalis* ($r= 0.058$) and *B. correcta* ($r=0.100$). A multiple regression analysis explained the average relationship between fruit fly incidence and abiotic factors, revealing that abiotic factors contribute 61% (R^2) to fruit fly population fluctuation in 2021 and 32.5% in 2022.

Key words: Fruitfly, Diversity, *Bactrocera*, Correlation, Weather parameter

Digital Marketing in Rural India – A SWOT Analysis

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ABSTRACT

Digital marketing has witnessed substantial growth worldwide, reshaping the way businesses interact with consumers. This paper tries to explore the strengths, weaknesses, opportunities, and threats pertaining to the influence of digital marketing in rural India, a market that was traditionally underrepresented in the digital landscape. Through an extensive review of existing literature, this research paper aims to provide insights into the SWOT analysis of the ever-growing digital marketing landscape in rural India. It investigates the impact of digital marketing on rural consumers, businesses, and the socio-economic dynamics of the region. The findings suggest that digital marketing is playing a pivotal role in transforming rural India into a digitally connected market.

KEYWORDS: Digital Marketing, SWOT Analysis, Rural buying behavior, Indian Rural marketing, Consumer perception

Nurturing a Unified Journey of Humanity and Biodiversity

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Abstract

Within the intricate tapestry of life on Earth, humans are not merely isolated threads but interconnected with the entire web of existence. Unfortunately, our pursuit of development has often taken the form of destructive tendencies, casting shadows on our role as custodians of the planet. Uniquely, humans inflict pain purposelessly, tarnishing our responsibility to safeguard the Earth. Amidst this turmoil, a deafening silence prevails, as we neglect the critical state of our world and our own well-being. Our reluctance to acknowledge faults and the urgency for change exacerbates the looming crisis. This raises the question of why do we succumb to competitiveness, aggression, and selfishness, risking the ruination of our home. Are we inherently flawed, or does the potential for greatness lie dormant within us? Examining our immediate ancestors, the bonobos reveals a different path. Anthropologist Adrienne Zihlman highlights their similarity to our forebears and their cooperative, loving behaviors. The conflict between our genetic instincts and cognitive faculties has led to a sense of alienation, symbolized by the trapped goose representing our consciousness yearning to be free from the bottle of the mind. Achieving a harmonious existence hinges on reconciling this internal conflict. To mend our relationship with the planet and with ourselves, we must recognize our role in the cosmic order. Embracing the wisdom of our ancestors and adopting the selflessness exhibited by bonobos becomes paramount. Amidst the current disharmony, we retain the power to choose a symphony of shared existence. Humanity's destiny is a conscious choice, whether we descend further into conflict or rise as divine beings, nurturing the intricate threads that weave Earth's vibrant tapestry.

Key words: Bonobos, wisdom of our ancestors, humanity's, Earth

Harnessing Biochar for Sustainable Management of Root-knot Nematode (*Meloidogyne incognita*) in Bottle Gourd (*Lagenaria siceraria*) Cultivation

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Abstract

Root-knot nematodes pose a significant threat to cucurbitaceous crops, with *Lagenaria siceraria* being highly susceptible to their detrimental effects. Due to the negative impact of nematicide, the application of biochar, a carbon-rich material derived from biomass pyrolysis, emerges as a sustainable and eco-friendly management approach for controlling root-knot nematode, improving soil health, nutrient availability, microbial activity, and nematode interactions. The current study sought to determine the nematicidal properties of biochar on *Meloidogyne incognita* and bottle gourd yield at different concentrations: 10%, 20%, 30%, 40%, and 50% biochar. 30 percent biochar level (70:30 w/w field soil: biochar) was found to be most effective in controlling *Meloidogyne incognita* compared to other treatments. Also, the growth performance and yield characteristics of bottle gourd improved significantly at this level.

Keywords: Biochar; Nematode; Management; Bottle gourd

Preserving Indigenous Plant Knowledge and Biodiversity: Insights from the Jind District, Haryana, India

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ABSTRACT

Biodiversity's importance in diverse ecosystems and its vulnerability to global food trends have spurred the need for a holistic integration of biodiversity into food production beyond mere productivity considerations. Acknowledging the significant role of plant-based traditional medicine, especially in rural India where over 65% of the population relies on traditional medicinal plants, holds promise for drug development and healthcare. This study explores ethnobotanical knowledge, integrating qualitative and quantitative methods to highlight the multifaceted relationships between communities and over 78 documented plant species in the Jind district, Haryana, India. Through one-on-one interviews and structured questionnaires, insights into traditional practices, cultural significance, seasonal variability, and utilitarian aspects of these plants were gathered from 105 local informants. The findings reveal a rich botanical landscape comprising 78 plant species, primarily distributed among families like Fabaceae and Poaceae, with distinct utilitarian roles as vegetables, flowering plants, timber, medicinal sources, and weeds. Moreover, the study showcases the prevalent association of plants with ornamental, religious, and spiritual practices, underscoring their cultural significance. Seasonal variations highlighted that a substantial majority of cultivated crops in the region flourish during pre-monsoon and monsoon months. Furthermore, most local crops bear dicotyledonous seeds, implying adaptability to changing environments and potential resilience. The significance of native plants transcends ecological aspects, encompassing cultural heritage and community practices. With approximately 80% of informants acquiring plant knowledge from ancestral sources, the urgency to conserve these species becomes evident. The imminent threats of industrialization, intensive agriculture, and forest exploitation emphasize the need for immediate awareness and protection measures. This research forms the basis for safeguarding botanical heritage, advocating for further validation and concerted efforts to protect these species locally and nationwide. The study's findings establish a fundamental groundwork for preserving indigenous plants, ensuring their survival for present and future generations, while maintaining the delicate balance between nature and culture.

KEYWORDS: Ethnobotanical knowledge, Cultural integration, Environmental resilience, Reproductive cycles, Conservation efforts

Empowerment and Resilience- A Comprehensive Exploration of Women Breaking Barriers in Twinkle Khanna's Literary Works

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ABSTRACT

This research paper undertakes a thorough examination of the theme of empowerment and resilience as portrayed in Twinkle Khanna's notable novels, including "Mrs Funnybones", "Pyjamas Are Forgiving" and "The Legend of Lakshmi Prasad" which is the collection of these stories - "The Legend of Lakshmi Prasad", "Salaam, Noni Appa", "If the Weather Permits", and "The Sanitary Man from a Sacred Land". By analyzing character dynamics, thematic intricacies and narrative strategies, this study attempts to elucidate the multifaceted ways in which Khanna's female characters challenge social norms, break barriers and navigate complex socio-cultural landscapes. Drawing on a range of literary and feminist theories, this research aims to contribute to the ongoing discourse on women's empowerment in contemporary fiction.

KEYWORDS: Women's Empowerment, Resilience, Contemporary Fiction, Social Issues, Gender Roles, Narrative Techniques.

Numerical Treatment of the Mathematical Models for Water Pollution

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Abstract

To evaluate the environmental impact of pollution, mathematical models play a major role in predicting the pollution level in the regions under consideration. This paper examines the various mathematical models involving water pollutant. We also give the implicit central difference scheme in space, and a forward difference method in time for the evaluation of the generalized transport equation.

Key words: water pollution, dissolved oxygen, biological oxygen demand, contaminant transport

Enhancing Wheat Germination and Growth with Silicon and Bacteria Supplements

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Abstract:

Seed germination and seedling growth play pivotal roles in determining the final output of the main yield. The early stages of a plant's life cycle set the foundation for its overall development and productivity. A healthy and robust start, marked by successful germination and strong seedling growth, ensures that the plant is better equipped to withstand environmental challenges and optimize its resource utilization. Efficient seed germination is the initial step that influences the establishment of the plant. It determines the percentage of seeds that develop into viable seedlings, directly impacting the overall stand and potential yield. Seedling growth further builds upon the germination phase, laying the groundwork for the plant's structural and physiological development. The current study has been designed to observe the effects of silicon, silicon solubilizing bacteria and phosphate solubilizing bacteria on the seed germination and seedling growth parameter on varieties Golden Sharbati 306 and HD 2967 of wheat (*Triticum aestivum* L.) in the soil of district Rohtak, Haryana, India. This study aims to evaluate the effects of sodium silicate and two combined doses of SSB and PSB on wheat crop. The experiment was performed in thermocol disposable containers. Parameters studied include %seed germination, MGT, MDG, Vigour Index along with number of roots, length of roots, seedling length. results indicate that synergistic effect positively impacts on all the parameters. By focusing on these foundational aspects, farmers can potentially improve the resilience and performance of their crops, ultimately contributing to higher yields and a more sustainable agricultural system.

Key Words: Sodium silicate, silicon solubilizing bacteria, phosphate solubilizing bacteria, seed germination, wheat crop

Enhancement of functional lipid-based nanocarriers for the targeted non-invasive drug delivery

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ABSTRACT

The emergence of lipid based nanoparticles have become a promising system for the safe and effective delivery of therapeutics through the skin. Deformable vesicles, a lipid-based vesicular nanocarriers, with improved permeability, elasticity, stability are used to deliver wide range drugs, vaccines, proteins and nucleic acids through the transdermal area. These amphipathic vesicles are composed of two prime components, the phospholipids and an edge activator (surfactant) which affects the vesicular size and entrapment efficiency of these deformable vesicles. This prolonged elasticity permits these nanocarriers to cross even the minute pores (<2 nm) of skin. But the complexity of their structure make them hard to measure and optimize experimentally and such research mainly faces distinctive and viable restrictions. To mark these limitations, we highlight on the assessment of computational modeling, precisely employing Molecular Dynamics (MD) simulations, in designing rational membrane nano vesicle carriers with improved and optimized properties. Here, we generate varied ratios of deformable vesicle membrane models to simulate and study behavior of lipids in the membrane for optimizing them to deliver therapeutics to the systematic circulation. The PLPC (1-Palmitoyl-2-linoleoyl-sn-glycero-3-phosphocholine) and Polysorbate 20 were used as membrane lipid and surfactant group to generate the nano vesicle carrier models in varied fractions (1:0, 1:1, 2:1, 3:1, 4:1, and 0:1). These *in silico* aided membrane models were then further experimentally validated to authenticate the efficacy of designed membrane nano carriers. The *in vitro* dynamic light scattering studies with 297.6±1.55 nm particle size, 0.665±0.016 polydispersity index, 1.18±0.36 mV zeta potential, and 2.26±0.142 deformability index shows the formation of well scattered stable deformable vesicles. The data obtained from the molecular dynamics simulation results with the experimental data, compared and validated. In short, this work verified the potential of Tween 20 surfactant with PLPC lipid *in forming deformable vesicles which could be further optimized in delivering biotherapeutic compounds across mammalian skin.*

KEYWORDS: Nano carrier, Drug delivery, Molecular Dynamics, Deformable vesicle, Computational models.

Proximate Analysis, Extraction and Phytochemical Screening of *Musa acuminata* peels

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ABSTRACT

Musa acuminata peels are rich in beneficial bioactive constituents that have the potential to improve health and meet the growing demand for natural ingredients. The present study focused on the proximate analysis of *Musa acuminata* peels, as well as their qualitative phytochemical screening. The yield of banana peels was found to be 33.80 ± 0.55 (g/100g of fresh weight). Crude protein, crude fiber, and ash content values were determined as 10.45 ± 0.39 , 11.80 ± 0.05 , and 12.44 ± 0.36 , respectively, based on the analysis. The qualitative phytochemical analysis of the *Musa acuminata* peels methanolic extract has shown that it contains alkaloids, flavonoids, and cardiac glycosides whereas the aqueous extract contained tannins as well. The results suggest that if the banana peels are properly utilized and processed, they could serve as a highly valuable by-product for the treatment of various diseases. These fruit peels will be a good substitute for shielding the environment from pollution generated by food by-products that are produced in large quantities by various food industries.

Keywords: *Musa acuminata*, Phytochemical, Alkaloids, Phytochemicals, Flavonoids

Natural Sunscreens: Development of Eco-friendly, Antioxidant Rich UV Shields

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ABSTRACT

High-energy ultraviolet (UV) radiation makes up around 2% of the Sun's total radiation output, which is produced at several different energies. The ozone layer serves as an imperceptible layer to shield humans from the sun's damaging ultraviolet (UV) rays. The Earth's surface is exposed to greater UV radiation due to the ozone layer's thinning, which is mostly brought on by man-made pollutants like chlorofluorocarbons (CFCs). Ozone depletion allows the skin to be exposed to more UV radiation regularly causes the damage to skin such as sunburn, photoaging, pigmentation and even melanoma (skin cancer). Over the past few decades, there has been a rise in the use of sunscreens to guard against the damaging effects of the sun's rays. Sunscreen is a must in today's environment since it shields the skin from UV rays by blocking, scattering or absorbing them. Active components in sunscreen agents are synthetic chemicals that are classed as organic or inorganic filters and have a range of serious adverse consequences. In addition to conventional organic and inorganic UV filters, several commercial products have recently been produced utilizing hybrid and botanical substances. Natural sunscreens that contain plant-based extracts have healing, revitalizing, and antioxidant-rich qualities that provide skin nourishment as well as UV protection. Antioxidant chemicals can be derived from plant extracts (phenolic, carotenoids, and flavonoid compounds) and vitamins C, E, and A. Antioxidants are incorporated into sunscreen preparations to give an additional layer of protection because UV filters alone cannot prevent all UVR from reaching the skin. Natural formulations contain a variety of natural components that work together to provide greater UV protection. Eco-friendly sun protection is promoted by natural agents, which are devoid of hazardous chemicals and present negligible risks to ecosystems. Natural sunscreen agents are in high demand due to changing consumer preferences for safer, eco-conscious, and skin-friendly options.

KEYWORDS: Solar radiation, ozone layer, sunscreen, natural extracts, organic filters

Aeropalynological survey in Rohtak city, Haryana.

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Abstract

To determine the changes in the behaviour of airborne pollen, both qualitative and quantitative an aeropalynological survey air samples were taken from four sites everyday using a personal volumetric glass slide sampler mounted at human height (1.8) three times daily between March 2023 and September 2023. There were sixty-eight different varieties of pollen identified, with *Ricinus communis*, *Cannabis*, *Morus*, *Chenopod/Amaranth*, and *Eucalyptus* being the main contributors. Although pollen was detected at different amounts throughout the year. There were also differences in area, with the site bounded by dense vegetation showing higher pollen loads. Two main pollen seasons—July–October and March–April—were identified. In the years that followed, there was a noticeable drop in pollen concentration. During the study period, there was a significant drop in the number of *Cannabis* and *Morus* pollen, but there was no significant change in the quantity of *Ricinus communis* pollen. Pollen counts in Rohtak are said to have decreased between March 2023 and September 2023 as a result of extensive vegetation clearance for the city's development programmes.

Keywords: Aeropalynological, Pollen, spatial variations, Pollen season.

Lignin: a value-added biopolymer

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Abstract

Lignin is a phenolic polymer and second most abundantly component of lignocellulosic biomass that chemically bond to cellulose and hemicellulose. In nature, lignin exists in the tissue of vascular plants, which supports the structural integrity and [mechanical strength](#) to the cell wall. Various extraction methods are used to isolate lignin such as physical, chemical, enzymatic, and mechanical. It is characterized using by nuclear magnetic resonance spectroscopy, differential scanning calorimetry, and thermogravimetric analysis. This aromatic polymer exhibits a complex chemical structure, forming an aromatic ring with methoxy and hydroxyl functional groups that offer various modification in its structure and enhance its applications in the field of pharmaceutical industry. It has been used in various applications, including antimicrobial, antioxidant, adhesive, adsorbent, energy storage material and ultraviolet blocker. Apart from pharmaceutical field lignin as raw material used in production of carbon material, biofuel, lubricants etc. In some industrial processes, lignin is generated as a by-product that can be directly used as a precursor for value-added product. Ability to bind with different biopolymers, thermal resistance, good mechanical strength gain attention of researchers as a reinforcement material for different applications.

Keywords: Lignocellulosic, biomass, precursor, polysaccharide, by-product

Utilizing Bioinformatics Approaches to Study Serotonergic Psychedelics and DMT: Implications for Cognition

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ABSTRACT

Serotonergic psychedelics are a class of psychoactive substances that primarily exert their effects by acting on the serotonin (5-HT) system in the brain, particularly on serotonin 5-HT_{2A} receptors. The resurgence of interest in serotonergic psychedelics, particularly Dimethyltryptamine (DMT), offers novel insights into neuroscientific research, cognitive processes and human consciousness. The presence of DMT as a naturally occurring endogenous substance, particularly in the pineal gland, suggests an intrinsic role in modulating neural processes. However limitations of detection and identification due to trace amounts and rapid metabolism persist. Therefore to study DMT as a molecule, bioinformatics tools will help draw comparisons with similar serotonergic psychedelics and thereby infer the molecular and cognitive correlates. This study aims to identify genes and signaling pathways that are significantly modulated upon exposure to these compounds. The bioinformatics analysis is conducted using publicly accessible datasets from NCBI, platforms such as Galaxy, R and Bioconductor, also online databases like KEGG and Cytoscape for pathway analysis and protein-protein interaction networks and mirTarget2 for microRNA network analysis. Furthermore, we integrated findings from bioinformatics analyses with current cognitive neuroscience literature on psychedelics. This interdisciplinary approach provides a more comprehensive understanding of how changes at the molecular level might correlate with alterations in cognitive processes observed in psychedelic states. Hence, this study will not only showcase preliminary findings and hypotheses but also demonstrate how bioinformatics can be a powerful tool in psychedelic research. These *insilico* results provide a strong support for common genes and interaction pathways among the serotonergic psychedelics and DMT. This may pave way for further understanding of DMT as a consciousness and cognition probe and potential therapeutic applications of these psychedelics in cognitive disorders.

Keywords: Serotonergic Psychedelics, Dimethyltryptamine, Bioinformatics, Cognition, Neurobiology.

Recent context to concept of Disease pyramid interaction with time and human in disease triangle.

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Abstract

In the current world security of food and its losses are the major issues. The losses estimated nearly from 10 to 40% due to disease and pests every year and it leads to increasing demand of food with high quality of food. As the development of disease in plants involve three major factors includes host, pathogen and environment. But as the time passes there is involvement of time and human in disease triangle. Time plays crucial role in development of disease; several authors have explained the illness triangle to include the dimension of time in order to suggest that the length of time that the three components are aligned influences the onset and severity of the disease. Naturally, illness will manifest after a certain amount of time even if it does not appear right away when the three factors are in a favourable alignment. It is difficult to establish the line separating healthy plants from sick ones. While signs and symptoms can take a while to manifest, the physiological processes that characterize an infection typically occur over the course of minutes to hours. It could be useful to illustrate time as a vertex on a pyramid, however time is a vector that is invariant and unidirectional, in contrast to the other three triangular elements. Although they may not be necessary for every illness, human, animal, and other vectors are unquestionably important for many. Vectors, are a specific instance in which the triangle relationship can be altered. Without this stage in the pathogen's life cycle, disease transmission would be significantly reduced because, in certain situations, the virus actually replicates inside the cells of a vector. However, by depicting a straight connection and avoiding the vector, the pyramid falls short of accurately illustrating the intermediary role of the vector in the pathogen-plant relationship if the pathogen is unable to infect its host without one. Disease triangle by incorporating one or more variables three other parameters have been proposed: persons, vectors, and time. Only time is absolutely necessary out of all of these, thus the other aspects are only special case uses. Following the addition of a single parameter, the most frequently drawn figure has been a three-dimensional disease pyramid or tetrahedron.

Keywords: Disease triangle; Pathogen; Host; Environment; Time; Human; Disease pyramid.

Antidiabetic Potential of Fruit Peels

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ABSTRACT

Fruit and vegetable wastes are used to extract and isolate potential bioactive compounds and used in the food, pharmaceutical and cosmetics industries. Appreciable quantity of phytochemical compounds and other essential nutrients are present in the seeds, peels, and other components of fruits and vegetables. Therefore, the present study was made to evaluate the antidiabetic potential of different fruit peels. The antidiabetic activity of medicinal plants may be due to the presence of phenolic compounds, alkaloids, terpenoids, and flavonoids. Methanolic peel extracts of *Punica granatum* contain alkaloids, carbohydrates, saponins, phenols, tannins, flavanoids, gums and mucilages. Correspondingly, methanolic extracts of *Citrus aurantifolia* peel unveiled the occurrence of phenolic compounds, tannins, flavonoids and glycosides, alkaloids and carbohydrates. The regulation of the key metabolic pathways such as carbohydrate metabolism, triggering the insulin secretion and enhancing the glucose tolerance are due to presence of these phytoconstituent. Citrus *reticulata* (C. *reticulata*) or tangerine fruit peels also contain high concentrations of three flavanones: hesperidin, naringin, and narirutin along with good quantity of quercetin. Hesperidin, a glycosylated flavanone of hesperetin known to decrease intestinal glucose absorption and inhibit the gluconeogenic pathways, thereby leading to antihyperglycemic actions in diabetes. Quercetin, a principal flavanol found in citrus fruits especially in fruit peels, was found to have antidiabetic actions, but the mechanisms of their antidiabetic actions are not fully elucidated. Orange (*Citrus sinensis*), Kinnow (*Citrus reticulata*), and Mosambi (*Citrus limetta*) methanolic, the aqueous extract showed the inhibitory activity on α -amylase and α -glucosidase activity. Plants are one of the two major kingdoms of life forms, they can reserve their excess food in leaves, stems, roots, fruits or seeds for future use. The pulp of fruit is consumed and peel of fruits are generally discarded or excreted from human and animals. The therapeutic potential of peel is among one of the least investigated areas of research. Therefore, there is also a need to investigate the antidiabetic potential of fruit's peels of other Indian traditional plant. Extended research with cultivation of these Indian traditional fruit plants may propagate the chances of household remedies for lifestyle diseases and many other ailments.

KEYWORDS: Fruit peel, Antidiabetic effect, Punica granatum, Citrus aurantifolia

Entomopathogenic fungus *Beauveria bassiana* as biocontrol agent and plant growth promoter.

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Abstract

The white muscadine illness, which affects insects, is brought on by the entomopathogenic fungus *Beauveria bassiana*. This disease has been extensively researched and is a global threat to a variety of arthropod pests. It breaks down the cuticle of the host insect and multiplies as hyphal bodies in hemolymph, secreting the toxins that kill the host insect. On both living and dead tissues, it produces harmful secondary metabolites that either promote fungal invasion or have immunosuppressive properties. Beauverolides play a role in the host's death, while destruxins primarily serve as antimicrobials. In addition to its antibacterial properties, oospores encourage infection-possibly by lowering the quantity of insect hemocytes. Fungal spores that can infect new hosts are produced as a result of later saprophytic development. The expression of gene clusters encoding the different proteins required for their manufacture results in the production of fungal secondary metabolites and a corresponding modification of the humoral immune system. *Beauveria* is thought to have a significant role in the fungal parasitization of these insects with chemical defences. This fungus, which grows naturally in rhizospheric soil, has been studied for its potential to suppress soil-borne insects. It also functions as a biocontrol agent and promotes plant growth. Plants and endophytic fungi coexist in symbiotic relationships. These fungi reside in plant tissues, do not clearly harm plants, and either directly or indirectly stimulate plant growth, which in turn improves plant resistance to diseases and subsequently prevents pathogen infection and multiplication in plants. It increases a plant's capacity to withstand stress, both abiotic and biological. Important phylogenetic and lifestyle diversity traits, including plant host specificity, colonization, transmission, and colonization in many plant tissues, are possessed by endophytes.

Using entomopathogenic fungi as endophytic fungi has piqued researchers' interest more than ever and revealed a number of special advantages over their more conventional cousins.

Keywords: *Beauveria bassiana*; Entomopathogenic fungi; Arthropod; Endophytic fungi; Insect.

“Integrated Pest Management of Uzi fly *Exorista bombycis* (L.) Management in Sericulture”

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ABSTRACT:

Diseases and pests have a significant impact on the development of cocoons. There are numerous types of pests and diseases that affect silkworms, as well as effective ways to control them. The silkworm, *Bombyx mori* L., is not only prone to many diseases but is also attacked by a variety of pests. The indiscriminate uses of chemical on controlling over serious pests like Uzi fly could be misbalancing the nature. This chapter comprises the different methods or tools in IPM to control the serious pests not only by chemicals but also different cultural, mechanical, physical, and biological aspects. Wherever, the application of IPM strategies implemented the pest and its occurrences or population could be suppressed to get primal overcome from the pests of sericulture industries. In nature over millions of substitutes would be found the control the Uzi fly in every stage while rearing the silkworms. The elements which occur naturally to control the pest from appearances.

Keywords: Sericulture, Uzi Fly, *Exorista bombycis*, pest occurrences, pest control, IPM, Uzi traps. Mode of actions, silkworms.

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Phytosociological Analysis of Shrub Plants of District Sonipat

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Abstract

In the present study, community analysis of shrub species in terms of diversity, density, frequency and abundance in District Sonipat, Haryana has been done by quadrat methods. At every study site, 30 quadrats of 10 m x 10 m (100 sq m) size were laid. From the study area, 35 shrub species (24 ornamental and 11 wild) have been documented that belong to twenty two families (18 dicots, 3 monocots and 1 gymnosperm) constituting 35 species and 32 genera. Euphorbiaceae has been found to be the most dominant family (2 genera, 4 species), followed by Apocynaceae (3 genera, 3 species). In comparative analysis of IVI value, *Bougainvillea spectabilis* (7.2) have been found to be dominant species among all shrubs found in the studied area, followed by *Hibiscus rosa sinensis* (6.6), *Nerium oleander* (6). The minimum IVI value was observed for the species *Capparis sepiaria* and *Barleria prionitis* (0.5). On distribution pattern, the 24 species showed contagious distribution (> 0.05) whereas the remaining 11 species in the study area, showed random distribution, (0.025-0.05). The Unmatch of class distribution of Shrub vegetation of district Sonipat with Raunkier frequency law diagram document the heterogenous nature of Shrub community.

Keywords: Shrub, Sonipat, Density, frequency, abundance, A/F ratio

Influence of synthetic growth regulators on seed productivity of linseed (*Linum ussitatissium*L.)

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Abstract

A field experiment was carried out to know the impact of synthetic growth regulator on seed productivity of linseed. the treatment comprises of (I) 2-3,5 tri iodobenzoic acid with concentration of 20,40 and 60 ppm (II) Naphthenic acetic acid with concentration of 20,40 and 60 ppm (III) Tricontanol with concentration of 2,5 and 10 ppm (IV) Chlormequat (ccc) with concentration of 250,500 and 1000 ppm (V) controlled with distilled water spray (VI) control with no water spray.

The stage of foliar spray was at 20 days and 40 days after sowing. The result reveal that almost all the treatments showed consistency in its performance with various concentration with regards to different parameters with minor deviation. The yield and important yield attributes were highly influenced CCC 500 ppm double spray and CCC 1000 ppm double spray. Numerically best result was observed with CCC 1000 ppm in almost all the cases but it was all the time statically at par with CCC 500 ppm.

Therefore, CCC 500ppm double spray was found to be economically viable to achieve the threshold level of yield and other advantageous component including oil. On the basis both the years of data of yield and yield attributing charterers it can be concluded the concentration of 500 ppm CCC double spray was found best in terms of yields net returns and cost benefit ration can be used for better harvest.

TO UNDERSTAND THE ROLE OF SOCIAL NETWORKING SITES ON EDUCATION SYSTEM

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Second author: Dr Sita Devi

Third Author Dr. Alka Dutt

ABSTRACT

This abstract explores the influence of social networking sites on the education system. Examining the interplay between online platforms and academic environments, the study investigates how these digital networks shape learning dynamics, student interactions, and educational outcomes. The paper examines the activities of social networking which include interests, common views or goals and bringing audiences from around the globe, religious matters, common languages, nationality, sexual or racial interest. The paper also highlighted the importance of social networking in education which include social media and integrating course content and students learning achievements. The paper pointed out some challenges of social networking in education which include erosion of authority of the educators. By analyzing both positive and negative effects, this research aims to provide insights into the evolving relationships between social media and the contemporary education landscape. The paper recommended among others that if social media is to be meaningful in education, it should be controlled and the focus and thrust should reside with the educators.

KEYWORDS: Education, Social networking sites, Learning, Course content, Students.

IMPACT OF EMOTIONAL INTELLIGENCE ON EMPLOYEE PERFORMANCE: A CONCEPTUAL REVIEW

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ABSTRACT

This paper examines the pertinent literature available on influence of emotional intelligence on employee performance, analysing the significant role intelligence plays in determining the success of individuals and organizations. Emotional Intelligence (EI) refers to the skilful examination and control of one's own emotions and the emotions of others. Its importance in improving organizational efficiency is clear. The study examines the four essential elements of the EI model, which include recognizing emotions, understanding emotions, managing emotions, and utilizing emotions. It investigates how these elements collectively impact employee performance in the workplace.

The study's conclusion is based on a thorough investigation of secondary data from many sources, including websites, journals, magazines, and articles. It was revealed that emotional intelligence has a major influence on employee performance.

The study also highlight a clear link between increased emotional intelligence and better job performance, indicating that firms can gain a strategic advantage by promoting emotional intelligence among their employees. This review fundamentally enhances our comprehension of the significant impact of emotional intelligence on employee performance and strongly advocates for its intentional incorporation into organizational practices to achieve long-term success.

Keywords: Work environment and discipline, emotional intelligence, job performance

Stevia (*Stevia rebaudiana*) a Natural Sweetener: An Overview

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Abstract

Stevia has been used for decades as a non-caloric sweetener for various foods and beverages, especially in Japan, as well as other countries in the world .Stevia can be classified as “zero-calorie,” because the calories per serving are so low.

It has shown potential health benefits as a healthful sugar alternative for people with diabetes.Stevia is used as a healthful alternative to added sugar in many meals and beverages.It is also useful for weight management as it is low in calories. Stevia is also beneficial for the liver as it has hepatoprotective and antioxidant properties. Stevia is good for the skin as it has anti-wrinkle property which helps tighten the skin and provide shine to it. There is not enough research to back up the safety of crude stevia leaves, therefore it is better to consume stevia products as compared to whole-leaf stevia.

Irrespective of the lack of study in the case of crude stevia leaves, the plant is consumed by millions of people throughout centuries. It is safe to consume and is an ideal alternative to sugar.

A Study on Relevance of Gurukul Education System in Contemporary World

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Abstract

Education is very important for our life. Without education man is like an animal. Earlier, the Guru used to give education in Gurukul but in today's modern era teachers give education in schools and colleges. There is a big difference between the modern education system and the education system in the ancient Gurukul. In the Vedic period, children used to stay with their Guru for about 25 years to get education and Guru was everything for them. Guru used to provide them the knowledge of great men and knowledge of culture, due to which the future of the student was bright and in student life, he became a good citizen and example for the society, whereas in the era of modern education, people's life has changed a lot. Today's education is given in schools and colleges. After studying for four to five hours, the student comes home and entertains himself in sports and television and his parents are busy with their work. In this way the child wastes his time because there is no one to see him. In the education system of this modern era, maximum mechanical knowledge and scientific knowledge are taught, special emphasis is not given on the education of moral knowledge. In fact, moral education is the all-round development of the personality of the child. The great educationists, in whom the name of the school was given the name of the family or home, gave birth to a very revolutionary idea in the field of education. This was such a great idea, on the basis of which the building of socialism could automatically rise without any bloodshed. Therefore, making some changes in the present education system, there is an urgent need to re-establish the Gurukul education system of the Vedic period so that the child, who is the future of the society, can become an example of the best culture on the world stage.

Key Words: Gurukul, Education System, Moral values, Vedic Education

Determination of urea in commonly consumed Beers using biosensors by immobilisation of urease on nylon membrane using AISE (Ammonium Ion Selective Electrode)

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ABSTRACT

This study focuses on determining the urea content in beers, employing a newly developed biosensor that incorporates an ammonium ion-selective electrode (AISE) and immobilized urease enzyme on a nylon membrane. The constructed potentiometric biosensor demonstrates high sensitivity for detecting urea in readily accessible fermented alcoholic beverages. The methodology involves the covalent immobilization of urease enzyme nanoparticles on a nylon membrane, subsequently deposited onto the AISE. In the case of beer, the urea concentration ranged between 7 and 37 mg/L approximately. This variability in urea concentrations reflects the diverse nitrogenous profiles inherent in different beer samples. The working electrode exhibited sustained efficacy when utilized weekly over a span of 6 months, with storage at 4°C. These findings underscore the potential applicability of the developed biosensor for monitoring urea levels in fermented alcoholic beverages, providing valuable insights into the quality of such products, particularly beers.

The abstract should be at least 150 words, but not exceed 350 words. It should be a single-paragraph abstract outlining the aims, scope and conclusions of the paper. The abstract should be written in English, using MS-Word (.docx format). Font size should be 12 points and Justify. Page margins should be 2.5 cm for the left, right, top and bottom margins. Use font type 'Cambria' with single-spaced lines. References are not mandatory and they will be included in the word count.

KEYWORDS: Urea, Alcoholic beverages, Beer, Biosensor, AISE

Solar PV (Photovoltaic) Panels or cells: A bane or boon in perspective of Global Environment Health?

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Abstract

The global deployment of solar power has accelerated, due to rising energy demands and obligations in regard to climate change. The demand for clean energy has also increased as a result of increased awareness of the detrimental impacts of greenhouse gas emissions. According to the International Energy Agency, photovoltaic capacity increased from 1.4 GW in 2000 to 760 GW in 2020, and solar energy today produces close to 4% of the world's electricity. But according to experts, this phenomenal increase in low-carbon power also represents a ticking time bomb. Solar energy replaces or lessens the usage of other energy sources with greater environmental impacts, it can have a positive, indirect impact on the environment. When used, solar energy systems and power plants don't emit any greenhouse gases or pollute the air. However, the development and application of solar energy technologies are not without environmental concerns. PV (photovoltaic) systems are thought of as clean and long-lasting energy sources. Solar photovoltaic (PV) systems are a useful tool for lowering greenhouse gas emissions associated with the production of electricity. Due to this, the installation of PV panels has quickly increased globally. Because of the expansion and the need to meet rising housing and energy demands while also producing clean energy, emerging waste streams, such as those from solar technology, are also becoming a problem. Improper PV end-of-life management might create million tonnes of trash, which is detrimental to the environment, by 2050. Although PV systems produce little pollution while they are in use, it is impossible to disregard the potential environmental effects of such systems from manufacturing to disposal. However, the extensive use of solar PV modules causes unwelcome waste to accumulate and has an adverse effect on the environment. Research on solar PV waste management is an emerging area that has gained increasing attention recently as a result of the rise in the amount of solar PV trash. The necessity to design a successful plan to manage this new waste stream is presented by the well-established environmental and human health dangers linked to the improper disposal of solar PV waste. There are hazardous chemicals used to make photovoltaic (PV) cells and panels that must be carefully handled to avoid release to the environment. Some types of PV cell technologies use heavy metals, and these types of cells and PV panels may require special handling when they reach the end of their useful life. Large solar power plants can have an impact on the environment where they

are located or close by, just like any other sort of power plant. The habitats of local plants and animals may be negatively impacted in the long run by land clearing for construction and the location of the power station. This article reviewed and discussed the issues of environmental protection and resource recycling by the solar panels. This review can provide a quantitative basis to support the recycling of PV panels specially by creating awareness among the homeowners of solar panels so that they transfer it to recycling facility instead of dumping in the landfill, and suggests future directions for public policy makers. Researchers are now working to create chemical techniques that can assist in disassembling solar cells and removing the rich metals inside. At present, from the technical aspect, the research on solar panel recovery is facing many problems, and we need to further develop an economically feasible and non-toxic technology. The research on solar photovoltaic panels' management at the end of life is just beginning in many countries, and there is a need for further improvement and expansion of producer responsibility.

Keywords: Solar energy, Photovoltaic cells, environmental health, PV waste

Study of the expression of the key genes related to yellow vein mosaic virus resistant in okra using quantitative real-time PCR

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ABSTRACT

Okra (*Abelmoschus esculentus* (L.) Moench) is an economically important vegetable crop grown widely in tropical and sub-tropical parts of the world. It is an easily available, low-cost vegetable crop with high nutritional benefits. Among biotic stresses, yellow vein mosaic virus (YVMV) is the most devastating disease caused by monopartite, bipartite begomovirus and associated satellites. The virus transmission occurs through the whitefly (*Bemisia tabaci* Genn.) in nature. Morphological differences between *Abelmoschus esculentus* cultivar Punjab Padmini (susceptible) and *Abelmoschus moschatus* accession 140986 (resistant) were observed. The synchronization of both species with respect to germination, inoculation stage, disease development stage and prevalence of whitefly population was optimized. The artificial virus inoculation with viruliferous whiteflies was done, followed by leaf sampling at 0, 1, 3, 5, 10, 15, 20, 25 days post inoculation (dpi) for gene expression. The relative gene expression study was done using reference (tubulin) and target (begomovirus specific) through quantitative real time PCR (qRT-PCR). The virus titre enhanced at 5 dpi in resistant species due to enhanced replication of virus against the strong immune response of resistant species. The flor-flor hypothesis holds this fact, therefore 5 dpi is recommended for screening of YVMV disease at the gene and genomic levels.

KEYWORDS: Yellow Vein Mosaic Virus, *Abelmoschus esculentus*, quantitative real-time PCR, Whitefly, gene expression

Fabrication, characterization and larvicidal bioassay of *Terminalia arjuna* based microemulsions against *Aedes* larvae

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ABSTRACT

Microemulsions have become highly adaptable and have several uses in the fields of medicine, pharmacology, and agriculture due to the higher thermodynamic stability, spontaneous formation, self-emulsification property and droplet size (<100 nm). The combination of green chemistry with nanobiotechnology has unlocked previously unheard-of possibilities for novel products that might improve environmental sustainability and human health. The unusual creation of microemulsions from plant extracts is made possible by green nanotechnology which functions as a catalyst revealing remarkable characteristics, most notably, insecticidal activity. In the present study, microemulsions based on *Terminalia arjuna* extract were employed to evaluate the in vitro larvicidal efficacy against *Aedes aegypti*. Tween 80, a polysorbate surfactant and ethanol, a cosurfactant, were combined to formulate microemulsions. The stability of the prepared microemulsions was assessed through further characterisation. The study reveals that green synthesised MEs may be a good alternative for the economical and environmentally beneficial management of *A. aegypti*.

KEYWORDS: Nanoformulations, Microemulsions, Larvicidal, *Aedes*.

Socio-economic Impact of Barsana Temples in Uttar Pradesh: A historical Study

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Abstract

The Barsana Temples in Uttar Pradesh have significant socio-economic impacts. They attract pilgrims, boosting local tourism and creating employment opportunities. Additionally, the temples contribute to the region's cultural identity, fostering a sense of community and promoting traditional arts and crafts. This case study would likely reveal a multifaceted positive influence on both the local economy and social fabric. The Barsana Temples, particularly the Radha Rani Temple, are situated in the Braj region of Uttar Pradesh. Pilgrims from across India and beyond visit these temples, leading to a surge in economic activities in the area. Local businesses, including hotels, restaurants, and shops, benefit from increased tourism. The festivals celebrated at Barsana, such as Holi, draw large crowds, providing a boost to the local economy through the sale of religious items, souvenirs, and food. This influx of visitors also creates job opportunities in the hospitality and service sectors, improving the livelihoods of the local population. Moreover, the presence of the temples contributes to the cultural richness of the region. They serve as focal points for religious and cultural events, preserving and promoting traditional practices. This cultural significance helps build a sense of community among the residents and fosters a unique identity for the area. The Barsana Temples have a profound socio-economic impact by driving tourism, generating employment, and preserving cultural heritage in the vibrant tapestry of Uttar Pradesh. Festivals at Barsana, Uttar Pradesh, are deeply rooted in religious and cultural traditions. The most notable celebration is the vibrant and renowned "Lathmar Holi." During this festival, usually held in March, the women of Barsana playfully beat men from the neighboring village of Nandgaon with sticks (lathis), symbolizing the teasing and playful interactions between Lord Krishna and the gopis. Another significant festival is Radhashtami, celebrating the birth anniversary of Radha, the consort of Lord Krishna. Devotees gather at the Barsana Temples to participate in special prayers, processions, and cultural performances. Throughout the year, various other Hindu festivals like Janmashtami (Lord Krishna's birthday), Diwali, and Sharad Purnima are celebrated with fervor, attracting pilgrims and adding to the festive atmosphere in the region.

These festivals not only have religious importance but also contribute to the socio-cultural fabric by fostering a sense of community and providing a platform for traditional music, dance, and art forms to thrive.

Key Words – social, economic, tourism, religious, temples, devotees.

Assessment of ecosystem services in urban green space of Tricity Chandigarh

Analysis of habitants' view on ecosystem services of urban green space in Tricity Chandigarh

Abstract

In this world of rapid urbanization various ecosystem services provided by urban green space play a critical role in maintaining urban ecosystem sustainability and in the development of cities. Urban green space, such as parks in cities, green belt, lakes are nature based solutions that may play a climactic role in dealing with the problems of urbanization and climate change. Cities and their surrounding ecosystem, provides various types of ecosystem services to their inhabitants but limited attention has been paid to the purveying of cultural ecosystem services which are very beneficial in urban planning process. In this study, we analysed habitants' acumen of cultural ecosystem services in urban green space of Tricity Chandigarh based on questionnaires. After systematic analysis of habitants' acumen of importance and performance of cultural ecosystem services in urban green spaces we found that spatial attributes and social demographic characters affect the cultural services most. The implementation of this kind of research by urban community planner and policy makers may play a crucial role in sustainable development.

Keywords: Urban green spaces, Cultural ecosystem services, Socio demographic characters, Tricity Chandigarh

ADOPTION OF BANANA CULTIVATION TECHNOLOGY BY GROWERS

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Abstract

Banana, a crucial fruit crop in India's tropical and subtropical regions, ranks as the second most important fruit after mango and the fourth most vital global feed commodity. With its significant socioeconomic impact, banana plays a central role in social and religious festivals and functions, considered auspicious and decorative. India, contributing 26.08% to global production, is the largest banana producer, cultivating it across 0.88 million hectares. The fruit's year-round availability, diverse varieties, taste, and nutritional value make it a favorite among all classes.

Despite challenges like *Fusarium* wilt affecting banana cultivation in Bihar, its cultivation is widespread in the state. The research was conducted in Bihar, India, and a total of 200 banana growers were randomly selected for the study. The findings showed that the average adoption rate in the selection of varieties is 54.97%, followed by 46.3% adoption in post-harvesting practices, 44.58% adoption in nutrient management, 43.50% adoption in the maintenance of banana plants, 36.75% adoption in weed management, 34.50% adoption in land preparation, 32.16% adoption in irrigation management, 32.50% adoption in the use of recommended insecticides, and 18.37% adoption in the use of recommended fungicides. The socio-economic status of the respondents is positively correlated with the adoption of production technology. Furthermore, training, age, and experience are highly significantly correlated. Regression analysis was carried out to determine the important variables and their predicting ability in explaining the adoption. It was found that training is the most important variable in influencing the adoption of banana cultivation practices.

Keywords: Banana, Adoption, Bihar, Farmers, *Fusarium*

ABSTRACT:

Ota lung cancer cells are a leading contributors to lung cancer mortality rates. Cancer cells are responsible for tumor growth and reoccurrence through inhibition of drug induced cell death. Various studies on the cancer induction, growth and progression are the multiple effects of cancer studies. Fruits and vegetables are served as lead molecules for the treatment of cancer due to the presence of phytochemical constituents.

Phytochemicals mainly secondary metabolites can show potential cancer chemo preventive activity. Vitis can be improved to successfully treat lung cancer by using gold nano particles, due to their size and shape which have been shown to facilitate drug delivery and retention, along with the targeted antibody mediated selection of cancer stem cells. Vitis berries are used for table fruits, wines and raisins, because of a range of health benefits, such as atherosclerosis prevention, antioxidation and renal damage prevention.

Red and Purple vitis have significantly more resveratrol than green Vitis . Resveratrol and a wide variety of phytochemicals found in vitises are likely to help the fruit play a role in the diet to reduce cancer risk.

Assessment of Water Supply and Demand for Total Water Availability in Nuh Watershed (Haryana) with Emphasis on Potential Adoption and Strategies

Smita Jaiswal, Susama Sudhishri, Man Singh, Vinay K. Sehgal, Anil K. Mishra, Anchal Dass, Dinesh Sharma,
P. Venkatesh and Prashant Singh

ABSTRACT

By using water resources management techniques for planning, improvement and supply, optimal use of the available water inside Nuh watershed. This paper focuses on the management of water resources in watershed for the expected future water resources and demands. Nuh watershed which covers an area of Nuh and Gurgaon in Haryana located at northwest India that faces chronic water scarcity. Water management are essential for sustainable agriculture for this region. Water Evaluation and Planning system (WEAP)-based decision support system can prove to be an effective tool for supply and demand analysis. In the present study, total water availability is calculated for analysis and simulation of agricultural water demands in the watershed. Year 2010 is used as base year for customizing WEAP model for watersheds. The model was calibrated using PEST tool, available in WEAP. The calibrated model was used for estimating future water demands and unmet demands by using future climate series, from 2011 to 2050, of IPCC scenario- RCP 4.5 of GFDL-ESM2M model. As per GFDLESM2M model (RCP4.5) predictions, rainfall is going to greatly vary in the coming years. The GCM predicted climate series shows the conditions to be very dry with an average rainfall of nearly 630 mm for the year 2015–2016 and 2020–2021. The year 2028–2029 has been predicted to be the driest among all with an average rainfall of less than 180 mm. Statistical analysis carried out to evaluate the performance of the developed WEAP models for canal flow simulation NSE, RMSE and R^2 value for the model is 0.99, 0.3 and 0.81 respectively. Straight effects of this rainfall pattern could be seen in future water availability for agriculture and resultant crop yield. A high unmet demand exists in the case of agriculture since the first priority for water supply is meant to be for livestock purpose. Area under agriculture in watershed is large, while respective water supply is low. This gap puts an

extra pressure on water resources leading to over extraction of groundwater and related problems. Looking at this projected scenario, water management requires great attention to narrow down the gap between existing demands and water supply. Since area under agriculture is large, water-efficient crops should be more emphasized. Also, efficient agricultural practices and rain water harvesting should be promoted in the study area. Since the watershed falls in semiarid condition, different stress/deficit irrigation scenarios can be built using customized WEAP model to get higher yield.

Keywords: Watershed, Integrated water resource management, hydrological model.

Design, Synthesis and Biological Evaluation of Novel Hydrazinyl Thiazole Derivatives

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Abstract

Nitrogen and sulphur are both present in the five-membered heterocyclic molecule known as thiazole. Thiazole and its derivatives are basic compounds in medicinal chemistry. A wide range of biological actions, such as antibacterial, antiparasitic, analgesic, antihypertensive, anti-inflammatory, and anti-HIV properties, are exhibited by compounds containing thiazole molecules. Pharmaceutical chemistry is particularly interested in the synthesis of thiazole compounds from thiosemicarbazones because to their versatility, affordability, high yields, and ease of usage. This work aims to synthesise new hydrazinyl thiazole compounds and investigate their biological characteristics.

Keywords- Thiazole, biological activity, antiparasitic, anti-inflammatory.

A realistic study on the use of multiple alternative and renewable energies in highway electrification deployment and its significance.

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Abstract

As transportation shifts from fossil fuel- powered to zero and ultra-low tailpipe emissions trucks, the world as a whole undergoes a huge transformation. For a number of reasons, electric truck (EVs) are becoming more popular. The fact that EVs produce fewer noxious emissions is one of their main advantages. The rise in fuel costs and the depletion of energy sources like fossil fuels are other issues that need to be addressed. In today's time, the problem of a petrol diesel and CNG is a lot. The demand for fossil fuel grows day by day. India is depend upon gulf countries Electric vehicles (EVs) are becoming more prevalent in modern society. The resource of coal is limited . This problem is overcome by renewable energy resource. The Indian government has announced plans to create an electric expressway between the national capital Delhi and Mumbai in an effort to address the growing issue of rising pollution. This paper deals with the use of multiple alternative and renewable energies in highway electrification deployment and its significance. Using MATLAB Code and Simulink model.

Keywords- Introduction, method and material, normal and rectangular design, long and narrow design, calculation,

A STUDY ON CAUSES OF LAPSATION FROM THE INSURANCE POLICY HOLDER PERSPECTIVE OF VIJAYAWADA CITY

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ABSTRACT

The human experience is replete with many hazards and uncertainties. One effective approach to mitigating the impact of these risks and losses is to get insurance coverage. Insurance plays a significant role within the financial sector of the Indian economy. Life insurance has emerged as an essential component of the human existence. As it is the essential all the earning people are approached to buy the policy, but as life transforms so many factors are influencing them to not to pay the premium and that leads to lapsation. If the rate of lapsation is huge its impact on financial health of the company. The present study is aimed at causes of lapsation from the policy holder perspective and collected data from the selected sample of policy holders in the Vijayawada city, Andhra Pradesh. The collected sample is analysed with statistical tools for draft conclusions and meaningful suggestions.

Keywords: Insurance, Lapsation, Policy, Policyholder, and Premium

Perspective on Evolution of Teaching Competencies for Integration in Industry 4.0 Technologies with Education 4.0

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Abstract

Industry 4.0 aims to make it possible for smart companies to generate tailored output while utilising greener and more effective processes. Manufacturers have to address a shortage of competent personnel to create and oversee diverse high-tech systems in order to achieve this. This drawback suggests that Industry 4.0 requires a change in the labour market, particularly the need for qualified individuals with the abilities and skills to succeed in this new environment. Hence, it is imperative for the education sector to develop competencies suited to the evolved industrial scenario. At the outset the chapter outlines the essential competencies and knowledge associated with the Fourth Industrial revolution. It then summarises the change brought forth by the industrial revolution from Education 1.0 to Education 4.0. The chapter also details the core components of education namely competencies, learning methods, information and communication technologies and infrastructure. The competencies that need to be developed in response to industrial revolution 4.0 viz., educational competence, competency in research, globalization and future strategies, joint competencies and technological commercialization have also been discussed.

Keywords: Industry 4.0, Education 4.0, Technology, Teachers' competencies, Educational Innovation, Higher Education Institution.

Theme: Sustainable agriculture, Organic farming

**Organic Manure: Nurturing Wheat Crops and Sustaining Agriculture
in an Eco-Conscious Era**

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ABSTRACT

Organic manure on the cultivation of wheat (*triticum aestivum*), shedding light on its multifaceted effects across various stages of the crop's growth cycle. In an era where sustainable agricultural practices are gaining paramount importance, organic manure emerges as a key player in enhancing soil fertility and promoting environmentally conscious farming. Through meticulous field experiments and data analysis, the research examines the influence of organic manure on critical phases of wheat (*triticum aestivum*) cultivation, ranging from germination and vegetative growth to reproductive stages and grain development. Organic manure, derived from natural sources, contributes essential nutrients to the soil, fostering improved soil structure and microbial activity. The study delves into the nuanced interactions between organic manure and the wheat plant, elucidating the positive outcomes on nutrient uptake, water retention, and overall plant health. Beyond its agronomic benefits, the research explores the broader environmental implications of organic manure application, highlighting its potential to reduce the ecological footprint associated with conventional chemical fertilizers. Furthermore, the study considers the impact of organic manure on the nutritional profile of wheat grains, addressing the critical link between sustainable farming practices and the quality of food produced. By providing comprehensive insights into the positive effects of organic manure on wheat crops, this research contributes valuable knowledge to the ongoing discourse on sustainable agriculture, advocating for practices that not only ensure robust crop yields but also prioritize long-term environmental health and food quality.

Keywords: Environmental impact, soil fertility, sustainable agriculture and organic manure.

Neuro-Robotic Interfaces: Bridging the Gap between Brain Signals and Robotic Actions

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ABSTRACT

The merging of neuroscience and robotics has unlocked unprecedented possibilities in creating direct interfaces between the human brain and robotic systems. This research endeavors to establish robust and efficient neuro-robotic interfaces, facilitating seamless communication between neural signals and robotic actions. The primary aim is to bridge the gap between human intent, as manifested in brain activity, and the precise execution of tasks by robotic systems. This study focuses on the development and optimization of brain-computer interfaces (BCIs) capable of decoding neural signals associated with motor commands and translating them into actionable instructions for robotic devices. The research leverages non-invasive neural sensing technologies such as electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS) to capture brain signals related to specific motor intentions and cognitive states. Additionally, the research involves the design and implementation of advanced machine learning algorithms and neural decoding techniques to interpret these neural signals accurately. By establishing a bidirectional communication channel between the human brain and robots, this research aims to enable users to seamlessly control and interact with robotic systems through their thoughts and intentions. The proposed neuro-robotic interfaces hold profound implications across various domains, including rehabilitation, assistive technologies, and human augmentation. For instance, these interfaces could empower individuals with motor disabilities to control robotic prosthetics or devices with unprecedented dexterity and naturalness, thereby significantly enhancing their quality of life. Ethical considerations regarding user consent, privacy, and the safe integration of neuro-robotic interfaces into everyday life will be paramount in this research. The study plans to conduct rigorous validation experiments and user trials to evaluate the usability, reliability, and safety of these interfaces, ensuring their practicality and acceptance in real-world scenarios. In summary, this research aims to establish robust neuro-robotic interfaces that facilitate intuitive and precise control of robotic systems through direct brain signals, heralding a new era of human-robot interaction with profound implications for healthcare, rehabilitation, and assistive technologies.

KEYWORDS: Cognitive Interface Technologies, Human-Machine Fusion, Neural-Controlled Robotics and Brain-Driven Robotics.

Blockchain-Driven Trust Models for Securing IoT Ecosystems

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ABSTRACT

The proliferation of Internet of Things (IoT) devices has revolutionized numerous industries, offering unprecedented connectivity and data-driven insights. However, this surge in interconnected devices has led to amplified security vulnerabilities, demanding innovative solutions to safeguard sensitive data and ensure trust within the IoT ecosystem. This research focuses on the exploration and implementation of blockchain-driven trust models as a robust security framework to fortify IoT environments. The study critically examines the limitations of traditional security measures in IoT networks, particularly concerning data integrity, authentication, and secure communication among heterogeneous devices. Leveraging the inherent features of blockchain technology—immutable distributed ledgers, cryptographic hashing, and decentralized consensus mechanisms—the research proposes novel trust models tailored for securing IoT ecosystems. By integrating blockchain-based architectures with IoT systems, this research aims to establish a transparent and tamper-resistant infrastructure, ensuring data integrity, authentication, and confidentiality across interconnected devices. The decentralized nature of blockchain enhances the resilience of IoT networks against single points of failure and unauthorized access, thereby mitigating potential cyber threats and enhancing overall system reliability. Furthermore, this research investigates the scalability and efficiency of blockchain implementations in IoT settings, considering factors like transaction throughput, latency, and resource constraints inherent in IoT devices. Strategies for optimizing blockchain protocols to accommodate the unique requirements of IoT environments will be explored to ensure practical applicability and sustainability. The proposed blockchain-driven trust models hold immense potential in various IoT applications, including healthcare, smart cities, supply chain management, and industrial automation. Ethical considerations pertaining to data privacy, governance, and compliance will be paramount in evaluating the feasibility and ethical implications of these models. In a nutshell, this research aims to pioneer the deployment of blockchain-based trust models to fortify the security infrastructure of IoT ecosystems, addressing critical vulnerabilities and fostering a more resilient and trustworthy interconnected environment.

KEYWORDS: Blockchain Integration, Resilient IoT Infrastructure, Trustworthy IoT Frameworks, Secure IoT Communication and IoT Security Enhancement.

Creating a Smart System to Monitor Humidity and Temperature Using NODE MCU and DHT11 Sensor for IoT

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ABSTRACT

In our rapidly evolving digital landscape, the integration of smart technologies has revolutionized how we interact with our environment, particularly in healthcare and everyday living. This research delves into the development of a sophisticated system tailored to monitor humidity and temperature using NODE MCU and the DHT11 sensor, specifically designed for the Internet of Things (IoT) applications. Amidst the complexities of modern healthcare and daily life, this innovative system serves as a beacon of technological advancement. It operates as a guardian, continually assessing and reporting on the surrounding temperature and humidity levels. Through the utilization of cutting-edge NODE MCU and the precision-oriented DHT11 sensor, this system is geared toward enhancing our understanding of environmental dynamics. At its core, this smart monitoring system champions ease of use and reliability. Its user-friendly design ensures accessibility while offering accuracy in capturing essential data. This enables individuals, industries, and healthcare facilities to preemptively respond to fluctuations in humidity and temperature, thereby mitigating potential risks and optimizing various processes. Beyond its immediate applications, this research showcases the broader implications of IoT in revolutionizing healthcare and daily living. By harnessing the potential of NODE MCU and the DHT11 sensor, it not only addresses the imperative need for real-time monitoring but also highlights the transformative power of technology in safeguarding health and improving overall well-being. Furthermore, this system holds promise in diverse sectors beyond healthcare, including agriculture, industrial processes, and home automation. Its adaptability and precision make it an invaluable tool for optimizing conditions necessary for the success of these industries, safeguarding against losses, and ensuring efficiency. As we navigate an increasingly interconnected world, the fusion of smart technology, like the one examined in this research, propels us toward a future where proactive monitoring, efficient resource management, and improved healthcare outcomes converge. This paper stands as a testament to the potential of IoT-driven systems in reshaping our environment for the betterment of society.

KEYWORDS: IoT-enabled Monitoring, Environmental Sensing, Smart Healthcare Solutions, NODE MCU Technology and DHT11 Sensor Applications.

REUSE OF PLASTIC WASTE FOR IMPROVING BEARING CAPACITY OF SAND

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ABSTRACT

Soil stabilization is the best method for improving engineering properties of soil. In present time for soil stabilization various admixture such as cement, lime, fly ash, gypsum etc. can be used but these admixtures are costly and are not easily available everywhere. Many experts believe that utilization of waste plastic material is quite helpful for improving engineering properties of sand. In the present world, where there is a shortage of good soil on the other hand plastic waste can be seen in abundance. The lack of good soil creates many problems in construction while on the other hand the environment is in trouble due to increasing plastic waste. The government of India is running many programs to reduce plastic pollution such as SBM, Plastic waste management, India plastic pact, Project Replane, Glolitter partnerships etc. which makes it necessary that we for soil stabilization such substances should be used which are in the interest of the environment. In this study all types of plastic waste with coal tar are used as an admixture in different percentage.

KEYWORDS: Environmental Benefits, Non-Degradable Waste, and PET Bottles for Ground Improvement, Advantages of pet bottles.

Co-relation between activity of Optic Lobe Neurosecretory cells and feeding of an Orthopteran – *Poekiloceruspictus*.

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Abstract

These cells are found at the base of optic peduncle in a small patch which later on bifurcates in two arms – one extending towards dorsal side and the other towards the ventral side of optic peduncle under the perineurium. Their number and position is fixed for each species of insects. These cells may be unipolar or bipolar; bipolar with one axon running towards the eye and the other towards the brain. It has been seen that a connection between eyes and the brain through these cells may affect the behavior of the insects, when stimulated physiologically through the secretion of these cells which itself may be triggered by light and darkness. In order to explore whether the optic lobe neurosecretory cells are some connected with feeding activity of the insects or not, a couple of experiments were performed on *Poekiloceruspictus*, an orthopteran. It was found that start of feeding coincide with the initiation of discharge of optic lobe neurosecretory material. If the visual stimulus is cutoff, it was found that optic lobe neurosecretory cells are completely devoid of neurosecretory material and the feeding is done at a very low rate. Exposure of eyes to light stimulates the synthesis of neurosecretory material and feeding activity also increases with the enhanced secretory activity. In brief when the optic lobe neurosecretory cells were at the peak of their secretory activity, the feeding was also at its peak . As the secretory material of the optic lobe neurosecretory cells got drained off, the feeding reaches at its lowest ebb.

Keywords; optic lobe, neurosecretion

Physical and chemical properties as well as the lake's level of pollution: The function of macrophytes and phytoplankton in biomonitoring and phytoremediation of heavy metals in Jaipur, Rajasthan, India.

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Abstract

For most locals and even tourists, Jaipur's lakes are the only supply of water. Such a study, which focuses on toxic metal contamination and the lake's current nutritional quality and its multiplication by algae and macrophytes, is crucial given the history of the lake's utility and significance on a national scale. According to studies, the abundance of nutrients in lake water promotes the establishment of numerous aquatic macrophytes and algal blooms. In addition, metals including Cr, Cu, Fe, Mn, Ni, Pb, and Zn are found in contaminated water.

Some of them, like Fe, Pb, and Ni, had concentrations over the suggested upper limit of what was considered tolerable. These metals were also identified in high concentration in the sediments found in lakes. The concentration of metals in the lake's distinct components fluctuated significantly depending on the season. Significant amounts of metals were gathered by the plants and algae that grew there, and their water roots were more effective. These plants' high capacity to remove metals may be important for biomonitoring research, and they may also be a helpful phytoremediation technique for improving the quality of the water by eliminating floating and submerged biomass that lives in the lake's littoral zone. The majority of the contamination in the dried-up land surrounding these lakes appears to come from anthropogenic sources and farming.

Keywords: Lakes, Pollution, Heavy metals, biomonitoring, phytoremediation.

Role of MSME in agriculture and rural development.

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ABSTRACT

Micro, Small and Medium Enterprises are the fastest growing sector of the country and continue to contribute to economic growth in its GDP. after globalization. While many studies have been done to explore its growth and potential in relation to the Indian economic model, little research has been done on its impact and contribution to the country's economy through rural transcendence. This study seeks to examine the current growth scenario of MSMEs in India and assess its impact on rural India, which will further accelerate its growth rate through skill acquisition, entrepreneurship development and diversification. labor force

INTRODUCTION

India has vibrant and responsive SMEs that play a dynamic and responsible role in the growth and development of any country in growing business, creating the best employment opportunities and creating the latest skill development in India through effective, efficient and innovative entrepreneurship. SMEs are a pillar of every economy and an engine of economic growth that promotes the impartial development of all. Therefore, to promote and support SMEs, the Government of India through the Ministry of Micro, Small and Medium Enterprises (MSMED) Act 2006 provides various scholarships, schemes and incentives to this sector and tries to address some of the major problems associated with SMEs like. such as lack of funding, lack of managerial skills, etc. The main objectives of the law are to guide the development of clusters, train entrepreneurs, develop infrastructure and encourage financial access to this sector.

In India, SMEs in many sectors such as agriculture, manufacturing and services are effective in increasing national income, value addition and employment generation. productive use of entrepreneurial skills and capital. But there are many problems in this industry such as lack of adequate and timely credit, procurement of raw materials, high cost of credit, lack of access to global markets, lack of skilled labor, low production capacity, small size, infrastructure problem,

EMERGING SUPERFOOD AND NUTRACEUTICAL SPIRULINA

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ABSTRACT

Spirulina is a type of blue-green algae that has gained attention as a superfood and emerging nutraceutical due to its high nutritional content and potential health benefits. Spirulina is rich in protein, vitamins, minerals, and antioxidants. Due to its impressive nutritional profile and benefits such as its Nutritional content, Sustainability, Potential health benefits (anti-inflammatory, anti-cancer, immune-boosting properties, good heart health, gut health, and cognitive function), the spirulina is becoming popular as nutraceutical, and arear of interest of pharmaceuticals. The main chemical constituent present in it is Phycocyanin, which is a powerful antioxidant. It has high protein content. Overall, spirulina and impressive properties which are to be studied makes it more interesting topic that has garnered increasing attention from health- conscious consumers and researchers alike. In this paper, author appeal to carryout reverse pharmacological and toxicological studies on spirulina, so that correlation between its phytoconstituents and various claimed properties could be established which will makes it more defensible for pharmaceutical field.

KEYWORDS: Superfood, Nutraceutical, Anti- Oxidant, Anti-Inflammatory, Anti-Cancer..

Prevalence of bovine haemoprotozoan parasites in and around Bhubaneswar, Odisha.

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Abstract

The blood parasites adversely affect the bovine population and are one of the major hindrances to productivity and health of livestock, globally. This study aimed to study the prevalence of some bovine hemoparasites, their molecular characterization, and associated risk factors in and around Bhubaneswar, a place in Eastern India. Microscopy (Giemsa stained thin blood smear) and polymerase chain reaction (PCR)-based prevalence studies were undertaken for a total of 106 bovine blood samples belonging to different breed, age, and sex presented to Veterinary Clinical Complex. DNA was extracted by conventional method and primer targeting msp5 gene (382 bp) for *Anaplasma marginale*, Tams1 gene (572 bp) for *Theileria annulata* and VSG RoTat 1.2 gene (110 bp) for *Trypanosoma evansi*, were used. Sequencing and phylogenetic analysis were also carried out for representative PCR products. Blood smear examination revealed a prevalence an overall of 48.11% (51/106) out of which the prevalence of *T. annulata*, *A. marginale* and *T. evansi*, and concurrent infection were reported to be 26.42%, 10.38%, 3.77%, and 7.55% respectively. All the samples found positive in microscopy were also found positive in PCR. PCR assay revealed an overall prevalence of 73.58% (*T. annulata*: 37.74%, *A. marginale*:17.92%, *T. evansi*: 5.66% and concurrent infection:12.26%). A higher prevalence was observed in the age group of 2–4 years (37.74%), females (61.32%) and cross-bred Jersey (50%). Representative PCR products were sequenced and assigned by GenBank (OL550058: *A. marginale*; OL604429: *T. annulata* and OL550059: *T. evansi*). There is a paucity of disease mapping of these parasites in most parts of the country. The study is probably the first report of molecular characterization of *T. evansi* and *A. marginale* from the region which gives some information of possible genetic diversity of the isolates circulating in the region. Future research should include large-scale epidemiological surveys as well as concurrent diagnosis of these hemoparasites for better treatment and control strategies.

PROTECTIVE ROLE OF *Emblicaofficinalis*MEDIATED SELENIUM NANOPARTICLES IN BROILER CHICKENS UNDER HEAT STRESS

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Abstract

This study investigates the protective role of *Emblicaofficinalis*-mediated selenium nanoparticles (SeNPs) in broiler chickens subjected to heat stress. The synthesis of SeNPs was confirmed through its characterization. UV-Vis analysis revealed a peak absorbance at 244 nm, with particle sizes ranging from 50 nm to 160 nm. XRD analysis disclosed the amorphous nature of the particles, exhibiting a trigonal crystal lattice and an oval shape, while FESEM analysis indicated SeNPsnanorods with lengths ranging from 48 nm to 84 nm and thickness between 30 nm to 38 nm. EDX analysis affirmed the purity of SeNPs, with selenium constituting more than 90% of the total composition, accompanied by 9.45% oxygen. Sixty one-day-old broiler chicks were equally divided into four groups for a 42-day study. Group I served as the control and received a basal diet according to BIS standards (2007). Group II received a basal diet with *E. officinalis* at 0.3% of feed, Group III received a basal diet with selenium at 0.3 mg/kg of feed, and Group IV received a basal diet with *E. officinalis*-mediated selenium nanoparticles at 0.3 mg/kg of feed. Clinical observations in Group I revealed severe manifestations, including panting, restlessness, wing elevation, increased water intake, and lameness. Group I exhibited a significant decrease in average weekly body weight and weight gain, with an increase in pooled mean feed consumption and impaired FCR. Hematological and biochemical parameters in Group I showed significant deviations, including decreased Hb, PCV, TLC, lymphocyte, serum total protein, and globulin, while heterophil, H:L ratio, basophil, MCV, AST, ALT, creatinine, cholesterol, blood glucose, MDA, and corticosterone increased significantly. However, Group IV demonstrated a significant restoration of hematobiochemical values, followed by Groups II and III. The treatment groups exhibited significant improvements in cellular-mediated immunity and humoral immunity. Microscopic examination revealed marked degenerative alterations in various organs in Group I, while Group IV, followed by Groups II and III, showed mild degenerative alterations. In conclusion, *Emblicaofficinalis*-mediated SeNPs demonstrated additive, protective and beneficial effects during heat stress in broiler birds at the given dose. This research highlights the potential of SeNPs synthesized through *Emblicaofficinalis* as a promising strategy to mitigate the detrimental effects of heat stress in poultry farming.

Keywords : Heat stress, *Emblicaofficinalis*, selenium, nanoparticles

OXIDATIVE STRESS IN INTUSSUSCEPTION AND EFFECT OF LIGNOCAINE ON SURGICALLY INDUCED OXIDATIVE STRESS IN CATTLE

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ABSTRACT

The study was conducted to evaluate the oxidative stress in cattle suffering from intussusception and the effect of peri-operative lignocaine as constant rate infusion (CRI) and local infiltration on oxidative stress. 24 cattle suffering from intussusception, at VCC, SKUAST-J and 6 normal animals maintained at LFC, SKUAST-J as control group, were included in the study. The affected animals were randomly divided into four groups (A, B, C, and D) of six animals. Group A and C received only CRI of lignocaine @ 25µg/kg/min. and 50µg/kg/min., respectively. Group B and D received CRI of lignocaine @25µg/kg/min. and 50µg/kg/min., respectively along with local infiltration of lignocaine in mesentery @ 0.7 mg/kg. Lignocaine was locally infiltrated @ 3mg/kg at incision site in all the groups. A loading dose of 1.3mg/kg was given intravenously over a 5-minute period before CRI. The concentration of malondialdehyde (MDA) and the activities of Superoxide dismutase (SOD) and Catalase in blood were measured. The animals suffering from intussusception showed an increased concentration of MDA and decreased activities of SOD and Catalase, as compared to the animals of control group, indicating the oxidative stress in diseased animals. Also, surgical intervention further increased the concentration of MDA and decreased the activities of SOD and Catalase. Lignocaine infiltrated locally into the mesentery during the surgical intervention decreased the concentration of MDA and increases the activity of SOD and Catalase comparatively, at post-operative time. It is concluded from the study that mesenteric infiltration of lignocaine can be used to decrease the oxidative stress from surgical interventions in mesentery and intestine, at post-operative time.

Keywords: Oxidative stress, Intussusception, Lignocaine, CRI

Discriminatory Practices related to Student Well being

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Abstract

Discrimination is an important word in comprehending the issues surrounding diversity. Discrimination has an effect on people through creating divided environments, which have economic, social, and psychological elements. As a result, the interaction of socioeconomic position, social inequality, and has a significant effect on their developmental paths. Negative attitudes and prejudice deprive victims of their human dignity and prohibit them from engaging in social activities. Student well-being will make a contribution to the prediction of overall life satisfaction and student life satisfaction. The purpose of this study was conducted to identify the relationship between discriminatory practices and student wellbeing. For achieving the purpose, null hypothesis formulated by the investigator. Survey method used for the identification of students who are subject of discriminatory practices. 10 U.P. board secondary schools of Agra district were selected through purposive sampling and random sampling technique was used for the sample selection of 9th class student. The researcher collected data through self constructed tools on the Discriminatory Practices Scale (DPS) and Student Wellbeing Scale (SWS). For survey, 1144 students of class 9th were administered a scale for discriminatory practices. 883 questionnaires were found to be entirely accurate. Percentile norms were developing into five categories which belong to perception of low discrimination to high discrimination. After those 187 samples was found perception of high

discrimination and also checked their student wellbeing. Results revealed that the calculated value of correlation (r) was found -0.915. It means that those students who perceived high discriminatory practices have low student wellbeing. The study suggests that the essential gender sensitization programme, use of positive behavioural treatments and supports, social and emotional learning programmes, bullying prevention programmes, and interventions that are intended to have a beneficial impact on prejudiced behaviours and attitudes. It is necessary to foster a sense of belongingness and acknowledge their cultural components in order to foster unity through education.

Keywords: Discriminatory Practices and Student Wellbeing

Climate Change and its Impact on Living Organism due to Global Warming

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ABSTRACT

Climate change came to international public attention in the late 1980. Global warming is the unusually rapid increase in Earth's average surface temperature over the past century, primarily due to the greenhouse gases released by people burning fossil fuels, refineries, vehicles and different industries. The greenhouse gases consist of nitrous oxide, ozone, carbon dioxide, water vapour, methane and chlorofluorocarbons. Since the industrial and scientific revolutions, Earth's resources have been gradually depleted. In addition, the beginning of the exponential increase in global population has a negative impact on the environment. Put simply, the need for consumption among the population increases together with the use of natural resources and the waste produced by that usage. As a result, since the turn of the twenty-first century, there have been an increasing number of hurricanes, cyclones, droughts, floods, and other natural disasters. These natural disasters have a significant negative impact on the health of people and animals as well as the environment and the global economy. Controlling global warming is essential to safeguarding our planet and all living things.

Key words: Global warming, Climate change, living organism

“THERAPEUTIC EFFICACY OF DIFFERENT DRUGS IN NON- INFECTIOUS REPEAT BREEDER COWS”

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Abstract

This research was aimed to evaluate the comparative efficacy of different drugs in 60 non-infectious repeat breeder cows. The diagnosis was confirmed by estimation of cervical mucus pH, PMN cell count, White Side Test (WST) and Fern pattern, which indicated 71.66 per cent cows having normal pH (7.0-7.5), fernning pattern of cervical mucus was of typical type with tertiary branching in all cows, PMN cell count less than 4 per cent with average number as 2.4 ± 0.14 per cent, all cases was negative for WST and no colour change was detected on attempting the qualitative test. The cases were categorised in 5 different groups for treatment on the day of oestrus viz. Group-I, Group-II, Group-III, Group-IV and Group-V treated with. 0.0105mg/kg bwt of injection GnRH on day 0th of trial, 0.0105mg/kg bwt of injection GnRH I/M on day 0th of trial along with haematinic liquid 50 ml orally at the time of AI for 15 days, 25mg of Herbal Powder (shataparva, shrungatak, shatamuli, putranjiva, kalabol, kumud, kaseruk plants), Orally from the day of oestrus upto 15 days along with haematinic liquid 50 ml orally at the time of AI for 15 days, Inj. Org. phosphorous, 10mg/kg bwt @4 inj alternate day IM, along with haematinic liquid 50 ml orally at the time of AI for 15 days and no treatment was attempted in control group, respectively. It was observed that serum phosphorous in non-infectious cows in group-IV, before treatments were 5.10 ± 0.11 which were increased after treatment 5.82 ± 0.15 . Statistically, it was observed serum phosphorus was highly significant between the group IV. The conception rate was found as 41.66, 41.66, 75 and 66.66 per cent in cows in group-I to IV, as against 25 per cent in control group V, respectively. Pregnancy rate was 33.33, 33.33, 75 and 66.66 per cent in cows from groups-I to IV, as against 16.66 per cent in control group V, respectively. Numerically conception rate showed maximum efficacy as compare to control group, and Significant difference was recorded for efficacy of therapies, pregnancy rate in non-infectious repeat breeder cows within the treatment groups. On conclusion, non-infectious repeat breeder cows treated with herbal powder and haematinic liquid showed highest conception rate, and pregnancy rate followed by organic phosphate and haematinic group of treatment.

Keywords: Repeat breeding, cow.

Algae as Biofuel: A Huge Advantage

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Abstract

Energy is needed for every work to be performed. Man has always been in search of a source of energy that he could use for getting all kinds of jobs done. This search was amplified by the industrial revolution in twentieth century. Fossil fuels such as petroleum and coal played a vital role in industrial revolution around the world. However, fossil fuels are a non-renewable source of energy and they are bound to end in 21st century. Moreover, they produce a lot of pollution and bring hazard to the environment. Hence, a search of more ecological and sustainable source of energy is the concern of technicians and ecologists across the globe. This search somewhat met its end with the discovery of biofuels. Algae can be widely used for production of Biofuels worldwide. Algal fuel is second generation biofuel that can be derived from various types of algae. Algae can be grown in open ponds and it is capable of growing up to 20-30 times faster than food crops. The potential of algal fuel production is tremendous. Up to 10000 gallons of oil can be produced per acre land. More research is needed to make biofuels a complete alternate of fossil fuels. If this goal is achieved, environment of earth will surely be a nicer, cleaner and more beautiful place to live.

Key words: Biofuels, Algal fuels, source of energy etc.

Use of Biopesticides : Scope and Sustainability

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Abstract

Since the beginning of human civilization, agriculture has remained the vital source of food for humans. However, agriculture is adversely affected by numerous pests like bacteria, fungi, weeds and insects, leading to reduced yield and poor quality of the produce. Since 1960s, the most common method for pest control has been the intensive use of synthetic pesticides. In developing countries, the agricultural sector is playing a significant role to enhance the economy. Pests cause significant damage to crop production. Over the years, synthetic pesticides like herbicides, algicides, miticides, bactericides, insecticides, molluscicides, nematocides etc. have been used to improve crop yield. When pesticides are used, the excess discharge into water bodies during rainfall often leads to death of fish and other aquatic life. The dangers associated with the use of synthetic pesticides have necessitated the need for alternative use of organic pesticides also known as biopesticides that are cheaper, environment friendly, and sustainable, because Biopesticides can be a promising alternative to synthetic pesticides. They are biodegradable and specific in action (harmless to non-target organisms). They are also capable of countering pest resistance issues caused by synthetic pesticides. Biopesticides have great influence in sustainable agriculture because their use can play major role in dealing with challenges in agriculture in a sustainable manner. This study deals with the issues created by synthetic pesticides along with the use of Biopesticides for making agriculture profitable and sustainable.

Key words- Agriculture, pesticides, biofertilizer, sustainable etc.

Digitalization of Agriculture in India

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ABSTRACT

Agriculture is experiencing dynamic and diverse developments in the digitalization of operations and operational infrastructure. Consequently, farmers in mid- and western Europe have access to an increasing number of digital applications and precision agriculture (PA) technologies. A broad range of technologies are available as decision-making support tools for practitioners and to facilitate site-specific and more efficient processes in both crop and livestock farming. Digital Farming is the consistent application of the methods of precision agriculture and smart farming, internal and external networking of the farm and use of web-based data platforms together with Big Data. Digital Farming is the integration of precision farming and smart farming and is achieved through the implementation of intelligent software and hardware. Precision farming is popularly defined as a technology-enabled approach to farming management that observes, measures, and analyzes the needs of individual fields and crops. Smart farming is more focused on the use of data acquired through various sources (historical, geographical, and instrumental) in the management of the activities of the farm. Digital Farming can be done through the installation of network-connected 'smart' devices as part of IoT (Internet of Things) or they can be software as a service (SaaS) based agtech.

Keywords: Agriculture, Digitalization, IOT and Precision Farming

The Effect of Ethnomathematical Teaching on the Academic Achievement of Secondary Students

ABSTRACT

Ethnomathematics is recently gaining much attention in India in theoretical aspect. This paper aimed to find the effect of Ethnomathematical Teaching on the academic achievement of secondary students of TamilNadu state. Quasi experimental research method was used to find the effect. Students Quarterly and half early marks were taken as the scores of academic achievement. The sample were 60 students of class VIII from Thiruvarur District, TamilNadu. The scores were analysed using t-test and found significant at 0.05 level. Thus there is a significant effect of Ethnomathematical Teaching on academic achievement of secondary students. It will be helpful in the development of students skills and talents and better achievements in math, thus it is suggested to the teachers and administrators to take further steps in the utility of such a method in classroom teaching.

KEYWORDS: Ethnomathematics, Academic Achievement

The Role of Herbal Pesticides in Protecting Honey Bees and the Quality of Honey

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Abstract

The declining health of honey bee populations and concerns regarding the quality of honey have prompted research into alternative pest management methods. This study investigates the role of herbal pesticides in safeguarding honey bees and improving the quality of honey. The objectives included assessing the impact on bee populations, evaluating honey quality, and comparing the effectiveness of herbal pesticides with conventional chemical pesticides.

Methods involved the establishment of two groups of honey bee colonies, one exposed to herbal pesticides and the other to chemical pesticides. Monitoring bee health, analyzing honey quality, and tracking pest control effectiveness were key components of the study.

Findings reveal that honey bee populations exposed to herbal pesticides exhibited improved health and lower stress levels compared to those exposed to chemical pesticides. Honey from colonies exposed to herbal pesticides displayed reduced chemical residues, higher antioxidant content, and superior flavor profiles. Moreover, herbal pesticides proved to be as effective in pest control as their chemical counterparts.

In conclusion, this research underscores the potential of herbal pesticides as a sustainable alternative for safeguarding honey bee populations and enhancing honey quality. By mitigating negative effects on honey bees and improving the overall quality of honey, herbal pesticides offer a promising avenue for sustainable apiculture. This study highlights the importance of considering environmental and health factors in pest management strategies for honey bee colonies, with positive implications for both pollinators and the quality of honey produced.

KEY WORD: - Herbal pesticides, Honey quality, Bee health ,Chemical pesticides ,Bee populations, Environmental impact, Sustainability, Pest control, Chemical residues, Antioxidant content , Alternative pesticides ..

Combinatorial Impact of Sewage Wastewater and Chromium Toxicity on vegetable crops

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ABSTRACT

This analysis is performed to analyze the effect of chromium on metabolic activities by conducting petridish culture. Metabolic activities involve pigments, chlorophyll, pheophytin, carotenoid, total protein, catalase, peroxidase and guaiacol peroxidase (GPx) of leafy vegetables. Under different concentration of chromium such as 5, 10 & 15mg/l, seedlings of leafy vegetable were analyzed after one week of exposure. After being exposed, the metabolic activities were found significantly affected by certain concentrations of chromium in both. Study shows significant ($p < 0.05$) decrease in total chlorophyll in the presence of high level of chromium concentration on 5% , 10% & 15% as compared to control. Similarly, a significant ($p < 0.05$) decrease observed in the pheophytin level for different Cr (total) concentrations 15% as compared to control. The investigation also shows that Catalase, peroxidase & GPx activity significantly decreasing in context of control as the concentration of chromium found gradually increased. Hence, the chromium is affecting the metabolism by decreasing the pigments and also decreasing enzymatic activity that is resulting protein degradation in tested vegetables.

Keywords: Chromium, toxicity, seedling, vegetable, pigments.

Dark Web's Impact on the Mental Health of Children

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Abstract:

The proliferation of the dark web, an encrypted and clandestine sector of the internet, poses a burgeoning threat to the mental well-being of children in the digital age. This paper synthesizes existing literature to comprehensively examine the multifaceted impact of the dark web on the mental health of children, shedding light on the various dimensions of this evolving concern.

The anonymity afforded by the dark web facilitates the dissemination of explicit and distressing content, exposing children to cyberbullying, explicit materials, and other psychologically harmful experiences. The review explores the intricate ways in which exposure to such content during formative years can influence the mental health of children, leading to heightened levels of anxiety, depression, and post-traumatic stress disorders.

Moreover, the dark web serves as a breeding ground for criminal activities such as child exploitation, trafficking, and involvement in violent ideologies. The pervasive nature of these threats contributes to an atmosphere of fear and insecurity, impacting children's perceptions of safety and trust in the digital realm.

This paper also considers the long-term consequences of dark web exposure, emphasizing the need for proactive measures to mitigate these effects. Strategies for prevention and intervention, including digital literacy programs, online monitoring tools, and law enforcement efforts, are discussed in the context of safeguarding the mental health of children.

As the digital landscape continues to evolve, educators, parents, mental health professionals, and policymakers must collaborate to implement effective protective measures. The article concludes by emphasizing the urgency of addressing this issue and calls for continued research and vigilance to ensure the well-being of the younger generation in an increasingly complex online environment. This comprehensive review aims to contribute to the growing body of knowledge surrounding the dark web's impact on children's mental health, providing insights for future research, policy development, and intervention strategies.

Keywords: Dark Web, Mental Health, Children

Antibacterial activity of ethanolic extract of leaf of hemp (*Cannabis sativa* L.) against human inhabitant bacteria-*E. coli* and *Staphylococcus aureus*

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ABSTRACT

Hemp, *Cannabis sativa* (Family: Cannabaceae), is dioecious and annual plant. The plant is used in a variety of ways e.g. as furnishing fiber, oil, medicine, and as narcotics. A class of secondary metabolites unique to this plant is terpenophenolics known as cannabinoids. Cannabinoids are the main biologically active constituents of the *Cannabis* genus and they are produced by the glandular trichomes that occur on most aerial surfaces of the plant. *Cannabis* is very complex in its chemistry due to the vast number of its constituents and their possible interaction with one another. For a long time cannabis has been regarded as possessing an antibacterial activity against a wide range of pathogenic bacteria as well as against some fungi. The antibacterial character is contributed mainly 2 forms- e (-)-trans- Δ^9 -tetrahydrocannabinol, (THC) which earns medicinal cannabis its classification as an illicit drug and the second is cannabidiol (CBD). However, number of studies demonstrated that plant extracts or essential oils also exhibit this activity.

The present investigation aims to prepare the ethanolic extract of dried leaf of *Cannabis sativa* and to assess the antimicrobial activity of ethanolic extract of dried leaf of *Cannabis sativa* against *Escherichia coli* and *Staphylococcus aureus* by disc diffusion method.

Keywords: Hemp, cannabinoids, antibacterial, *E. coli*, *Staphylococcus aureus*

Antidiabetic Potential of Non-edible Fruit Parts

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ABSTRACT

Commonly non-edible parts of fruit and vegetable are used to extract and isolate potential bioactive compounds to be used in the food, pharmaceutical and cosmetics industries. Appreciable quantity of phytochemical compounds and other essential nutrients are present in the seeds, peels, and other non-consumables of fruits and vegetables. Therefore, the present study was planned to evaluate the antidiabetic potential of such non-edible parts of fruits. The antidiabetic activity of such fruit parts may be due to the presence of phenolic compounds, alkaloids, terpenoids, and flavonoids. The methanolic peel extracts of *Punicagranatum* contain alkaloids, carbohydrates, saponins, phenols, tannins, flavonoids, gums and mucilage. Correspondingly, methanolic extracts of *Citrus aurantifolia* peel unveiled the occurrence of phenolic compounds, tannins, flavonoids and glycosides, alkaloids and carbohydrates. The regulation of the key metabolic pathways such as carbohydrate metabolism, triggering the insulin secretion due to presence of these phytoconstituent. *Citrus reticulata* or tangerine fruit peels also contain high concentrations of three flavanones: hesperidin, naringin, and narirutin along with good quantity of quercetin. Hesperidin, a glycosylated flavanone of hesperetin known to decrease intestinal glucose absorption and inhibit the gluconeogenic pathways, thereby leading to antihyperglycemic actions in diabetes. Quercetin, a principal flavanol found in citrus fruits especially in fruit peels, was found to have antidiabetic actions, but the mechanisms of their antidiabetic actions are not fully elucidated. Orange (*Citrus sinensis*), Kinnow (*Citrus reticulata*), and Mosambi (*Citrus limetta*) methanolic, the aqueous extract showed the inhibitory activity on α -amylase and α -glucosidase activity. Extended research on such Indian traditional fruit parts may propagate the chances of household remedies for lifestyle diseases and many other ailments.

KEYWORDS: Antidiabetic, Fruit parts, Bioactive compounds, phytochemical compounds.

Ennoblement of Millets- a reliable, secure and healthy food for the people: Observing the International Year of Millets-2023

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ABSTRACT

Food and Agriculture Organization and United Nations have recognised the year 2023 as International Year of Millets for consciousness about health and nutritional benefits of millets. The Indian Government proposed to celebrate year 2023 as International Year of Millets (IYM2023). For centuries, the millets, also regarded as nutraceuticals, have been a valuable source of healthy and nutritious food for the people living especially in rural and tribal areas worldwide. However, as the human civilization flourished in particular food choices, the millets lost the race in course of time and almost replaced from dining table by more acceptable grains like wheat and rice. At present the cultivation and trade of millets is restricted to mostly southern states and a few central areas. The northern state Uttarakhand is also known for the production of millets. The role of millets in environment support is tremendous as they require less water and fertilizers for cultivation. The improvement of millet crops via plant breeding is practiced for a long time and it has achieved a remarkable success. The biotechnological approaches are also prominently applied for qualitative and quantitative enhancement of the millets. The genetic improvement using gene transfer and transgenic techniques is underway and it is hopeful that in the coming years the millets will gain a centric attention and acceptance in public.

Keywords: Millets, nutraceuticals, gene transfer transgenics, plant breeding

Impact of plastic pollution on environment and human health:

An overview

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Abstract

The presence of harmful substances in the environment is called pollution. These harmful substances are called pollutants. Plastic pollution is one of them. Accumulation in the environment of synthetic plastic products to the point that they create problems for wildlife and their habitats as well as for human population is called plastic pollution. Plastic pollution can alter habitats and natural processes, reducing ecosystems ability to adapt to climate change, directly affecting millions of people's livelihoods, food production capabilities and social well-being. Most plastic is not recyclable and the vast majority does not biodegrade. Further, plastic products often break down into very small fragments called microplastics that can pollute ecosystems and harm organisms. It is a global problem. Every year 19-23 million tonnes of plastic water leaks into aquatic ecosystems. Plastic particles release harmful chemicals that deposit in the soil and ruin its quality. It impacts the growth of the plant. Exposure to plastic has been found to increase the risks of birth complications, lung growth and childhood cancer. Crucially, this means plastic pollution will continue to wreak havoc on our lives and earth for generation to come. Some of the plastic bags which contain leftover food or which get mixed up with other garbage are eaten by animals resulting harmful effects, because of the non-biodegradable and impervious nature of plastics, if disposed in the soil, they could arrest the recharging of ground water aquifers. Plastic pollution is growing day by day, we need to reduce it by simply following the 4Rs- Refuse, Reduce, Reuse and Recycle.

Key words: Plastic pollution, biodegradable, and microplastic.

Influence Of Changing Environment On Reproductive Health

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ABSTRACT

The balance of ecosystems is indeed crucial for the overall health and well-being of all organisms on Earth. Reproductive fitness, a key aspect of an organism's life cycle, is intricately linked to the environment it inhabits. Various fitness parameters, especially physiological and reproductive fitness, play pivotal roles in determining the health of individuals and populations.

Human health is significantly impacted by environmental factors, and reproductive health is no exception. A range of disorders, such as infertility, compromised sperm quality, dysfunction of gonadal glands, breast cancer, and testicular cancer, are observed in humans. These issues are often linked to environmental influences that can affect reproductive systems directly or indirectly.

Exposure to hazardous substances in the environment can adversely affect the endocrine system, disrupting hormonal balance and, consequently, reproductive health. Problems with oocyte development, blastocyst abnormalities, and various physiological and behavioural effects can arise with damage in sperm and uterine health.

To ensure a healthy reproductive life for all organisms, it is imperative to mitigate the effects of environmental hazards to preserve reproductive health.

Keywords: Reproductive health, Reproductive fitness, Infertility, Environmental hazards

Management of Natural Resources for sustainable development

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ABSTRACT

Environmental protection is integral to achieving sustainable development by ensuring the preservation of ecosystems and the well-being of present and future generations. It involves the responsible management of natural resources, reduction of pollution, and mitigation of climate change impacts. Sustainable development recognizes the interconnectedness of social, economic, and environmental aspects, emphasizing a harmonious coexistence between human activities and the planet. Efforts in environmental protection for sustainable development encompass various strategies. Conservation of biodiversity is crucial, as it maintains ecological balance and supports essential ecosystem services. Sustainable resource management promotes the responsible utilization of water, forests, and minerals, preventing depletion and fostering long-term viability. Mitigating climate change is a cornerstone of environmental protection. Transitioning to renewable energy sources, improving energy efficiency, and adopting sustainable agricultural practices are key components. Additionally, reducing carbon emissions and enhancing resilience to climate impacts are imperative for a sustainable future. Addressing pollution is paramount in environmental protection. More efforts are needed to minimize air, water, and soil pollution to safeguard human health and ecosystems. Waste reduction, recycling, and the adoption of eco-friendly technologies can contribute to a circular economy, thereby reducing the environmental footprint of human activities. Environmental education and awareness play a pivotal role in fostering a sense of responsibility and encouraging sustainable lifestyles. Collaboration between governments, businesses, and communities is essential for effective environmental policies and initiatives. In the present study, it has been established that environmental protection is fundamental for sustainable development, intertwining ecological integrity, economic prosperity, and social well-being. A holistic approach that considers the intricate relationships within ecosystems and promotes responsible human behaviour is key to achieving a sustainable and resilient future.

KEYWORDS: Sustainable development, Pollution, Climate change, Ecosystem, Waste Recycling

Lignin: a value-added biopolymer

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Abstract

Lignin is a phenolic polymer and second most abundantly component of lignocellulosic biomass that chemically bond to cellulose and hemicellulose. In nature, lignin exists in the tissue of vascular plants, which supports the structural integrity and mechanical strength to the cell wall. Various extraction methods are used to isolate lignin such as physical, chemical, enzymatic, and mechanical. It is characterized using by nuclear magnetic resonance spectroscopy, differential scanning calorimetry, and thermogravimetric analysis. This aromatic polymer exhibits a complex chemical structure, forming an aromatic ring with methoxy and hydroxyl functional groups that offer various modification in its structure and enhance its applications in the field of pharmaceutical industry. It has been used in various applications, including antimicrobial, antioxidant, adhesive, adsorbent, energy storage material and ultraviolet blocker. Apart from pharmaceutical field lignin as raw material used in production of carbon material, biofuel, lubricants etc. In some industrial processes, lignin is generated as a by-product that can be directly used as a precursor for value-added product. Ability to bind with different biopolymers, thermal resistance, good mechanical strength gain attention of researchers as a reinforcement material for different applications.

Keywords: Lignocellulosic, biomass, precursor, polysaccharide, by-product

Deep Fake Navigating the Ethical, Psychological, and Societal Implications for Citizens

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ABSTRACT

This research paper delves into the intricate challenges posed by deepfake technology, an advanced form of synthetic media manipulation driven by artificial intelligence, with a specific emphasis on its repercussions for individuals and society. Through an exhaustive review of existing literature and real-world instances, the paper examines the nuanced manners in which deepfakes erode trust in digital media, facilitate the dissemination of misinformation, and jeopardize the privacy and security of individuals.

The ethical dimension of deepfakes is critically scrutinized, encompassing concerns related to the malicious exploitation of this technology for deception, propaganda, and identity theft. The paper delves into the psychological impact on individuals, considering potential harm to mental well-being, the erosion of trust, and challenges to personal and public discourse. Furthermore, it investigates the broader societal consequences, including implications for democratic processes, social cohesion, and the imperative for legislative and technological countermeasures.

KEYWORDS: Deepfake technology, Ethical concerns, Psychological impact, Societal implications, Countermeasures

Extraction and characterization of value-added biopolymer Lignin from biomass

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Abstract

Lignin is a phenolic polymer and second most abundantly component of lignocellulosic biomass that chemically bond to cellulose and hemicellulose. In nature, lignin exists in the tissue of vascular plants, which supports the structural integrity and mechanical strength to the cell wall. Various extraction methods are used to isolate lignin such as physical, chemical, enzymatic, and mechanical. It is characterized using by nuclear magnetic resonance spectroscopy, differential scanning calorimetry, and thermogravimetric analysis. This aromatic polymer exhibits a complex chemical structure, forming an aromatic ring with methoxy and hydroxyl functional groups that offer various modification in its structure and enhance its applications in the field of pharmaceutical industry. It has been used in various applications, including antimicrobial, antioxidant, adhesive, adsorbent, energy storage material and ultraviolet blocker. Apart from pharmaceutical field lignin as raw material used in production of carbon material, biofuel, lubricants etc. In some industrial processes, lignin is generated as a by-product that can be directly used as a precursor for value-added product. Ability to bind with different biopolymers, thermal resistance, good mechanical strength gain attention of researchers as a reinforcement material for different applications.

Keywords: Lignocellulosic, biomass, precursor, polysaccharide, by-product

An analysis comparing the mechanical properties and porosity of 316L stainless steel produced using various laser powder bed fusion metal additive manufacturing machines

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Abstract

Additive manufacturing is the latest demand in the market but even with the recent advancements in AM technology and process the adoption of additive manufacturing (AM) in many industries is impeded by issues related to the reproducibility and repeatability of AM parts. This becomes especially challenging when a part is qualified using optimized parameters on a specific part on a specific machine. The capacity to transfer these optimized characteristics to many machines must be understood if a producer wants to increase production to multiple machines. In this study 316L tensile testing samples were produced utilizing four distinct metal LPBF printers, all of which were equipped with the identical processing parameters and metal powder that came from a single batch supplied by the same source. This study reports on the correlation analysis between the input parameters and the output measurements that considerable differentiate in the mechanical performance and characteristics of the AM samples made on the various L-PBF metal additive manufacturing machines, even with the same set process parameters the elongation, ultimate tensile strength, and elastic modulus of additively manufactured 316L samples were found to be (4e42)%, (200e716) MPa, and (52e214) GPa, respectively, for the range of the input processing parameters and the resulting input volumetric energy density applied of 21e37 J/mm³.

Keywords: Additive Manufacturing, 316L stainless steel, laser powder bed fusion, porosity, strength

Stress Eating: A Growing Problem Among College Students

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Abstract

College students are experiencing a growing concern about stress eating, commonly known as emotional eating. This presentation discusses the increasing frequency of stress eating among college students and its negative impact on their health. The academic pressures, social challenges, and new responsibilities stress college life. As a result, many students resort to stress eating as a coping mechanism, which could lead to unhealthy eating habits and long-term health issues. Academic pressure, social isolation, financial difficulties, and the transition to adulthood contribute to stress eating among college students. Addressing this problem requires proactive interventions such as stress management, mental health support, and a school environment that promotes healthy eating habits. The study also highlights the effects of stress eating on weight gain, nutrition, and mental health issues such as anxiety and depression. These effects can affect students' academic performance and overall quality of life. Institutions must implement wellness programs that include nutrition education, mental health services, and stress-reduction measures to tackle college student stress eating. Improved awareness of professional assistance and a supportive environment can assist students in developing healthy coping mechanisms. Consequently, stress eating is a growing concern among college students, affecting their physical and emotional health. The solution involves education, support, and resources to help students manage stress, establish healthy habits, and improve their overall well-being in education and beyond.

Keywords: Stress eating, college students, emotional eating, mental health, coping methods, unhealthy behaviors, nutrition, fitness, academic pressure.

Role of NABARD and Cooperative Banks in Agriculture and Rural Development

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Abstract

"Development with social justice" has been the basic objective of development planning in India since independence. Since the beginning of planned development, the government has made significant progress in the development of rural India through five year plans. National Bank for Agriculture and Rural Development (NABARD) was established following the recommendations of the "Committee to Review Arrangement of Institutional Credit for Agriculture and Rural Development" on July 12, 1982. All major issues relating to rural credit were till then dealt with by the RBI and agricultural refinance and Development Corporations came under the control of NABARD. Thus NABARD emerged as the apex institution playing an important role in policy planning and providing refinance facilities to rural financial institutions. It is also playing the role of a catalyst in credit. NABARD is also known for its 'Bank Linkage Program' (SHG) which encourages banks in India to lend to self-help groups. Because (SHGs) are formed especially by poor women to take It has evolved into an important Indian instrument for microfinance. 2200000 lakh Self Help Groups representing 33 million members were linked to credit through this program by March 2006 with a mandate to facilitate credit flow and promote growth for the development of agriculture, cottage industries and rural industries Government of India established NABARD as an apex development bank. The credit flow sanctioned by NABARD for agricultural activities reached Rs.1574800 million in 2005-2006. The overall GDP is estimated to grow at a rate of 8.4 per cent. NABARD has been instrumental in the overall development of India in general and rural and agricultural development in particular.

Electromagnetic Properties of Some ColumbiteNiobates.

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Abstract

Investigation of the electromagnetic characteristics of the columbite binary niobate ceramics (with the formula $M\text{Nb}_2\text{O}_6$, where $M=2^+$ cation) which are also columbite precursors for the technologically important class of complex perovskites. A comprehensive study was made of the niobates containing the metal cations $M = \text{Co}^{2+}$. The ceramics were made from conventional solid-state reaction route and calcined over a range of temperatures and formed the single phase columbite structure, as confirmed by X-ray diffraction (XRD). The microstructure and grain size distribution of the sintered pellets were studied by scanning electron micrograph (SEM), with crystallite size being in nano range. The dielectric data were recorded on polished sintered pellets as a function of temperature from room temperature to 350°C . It was found that the magnitude of dielectric constant was relatively high for these columbites with low dielectric loss compared with reported columbite compounds. Additionally, the corresponding lead and non-lead based complex perovskites were synthesized from these columbiteniobates, out of which Pb and Ba based CdNb_2O_6 and CaNb_2O_6 formed near pure phase complex perovskites, with minimum amount of pyrochlore phases, compared to those reported in literature till now. Further progress in the work is being pursued.

Keywords: Columbite precursor; x-ray diffraction; surface electron micrograph; dielectric constant, dc conductivity; electrical behavior.

Study of effect of antimicrobials from turmeric ethanolic extract on growth and survival of *E. coli* in contaminated apple juice

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ABSTRACT:

Turmeric, a popular spice as well as a potent herbal drug has been used for preparation of many drugs in Ayurvedic medicinal system since ancient time. It exhibits to inhibit the growth of a variety of bacteria, fungi and parasites especially causing food spoilage and serious health problems. Use of contaminated food items, particularly, fruit juices is most common health hazard. Turmeric has been found to be an excellent food preservative and hence used in a variety of ways. Investigation of efficacy of turmeric ethanolic extract was carried out using contaminated apple juice. The most common food spoilage bacterium- *E.coli* was used to evaluate the effect of turmeric ethanolic extract on its mortality. Turmeric extract showed varying antimicrobial effects on *E. coli*, strain DH5 α , reducing the pathogen population below detection limits (<10 log CFU/ml) at 5 μ l and 10 μ l per ml of extract. At these concentrations of turmeric extract, there was significant reduction in *E. coli* growth as compared to control, with counts of 8.61 and 8.52 log CFU/ml respectively at $p < 0.05$.

Systems Engineering Applications for Advancing Environmental and Occupational Health Research

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Abstract:

This work explores the integration of systems engineering principles and methodologies to address challenges in the fields of environmental and occupational health. Traditionally, these disciplines have been approached through a fragmented lens, with separate considerations for environmental factors and workplace conditions. However, the increasing complexity and interconnectedness of these domains demand a more holistic and systematic approach.

Systems engineering provides a comprehensive framework for analyzing, designing, implementing, and optimizing complex systems. In the context of environmental and occupational health, this approach allows for the examination of the intricate relationships between environmental factors, workplace conditions, human health, and overall system performance. By adopting a systems perspective, this research aims to enhance our understanding of the dynamic interactions within these systems and develop effective strategies for improving health outcomes.

The work reviews case studies and applications where systems engineering methodologies have been successfully employed to address environmental and occupational health challenges. The integration of data analytics, modeling, simulation, and optimization techniques within a systems engineering framework provides valuable insights for decision-makers and practitioners.

Furthermore, the work explores the potential benefits of adopting a systems thinking approach in policy development, risk assessment, and intervention planning. By considering the interdependencies and feedback loops within environmental and occupational health systems, it becomes possible to develop more robust and adaptive strategies for mitigating health risks and promoting overall well-being.

Keywords: Occupational Health, Environmental Health, Systems Engineering,

Removal of Environmental Pollutants by bioremediation

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Abstract

Environmental pollution is global issue for developing countries. Man made activities affect all the components of the environment. Due to rapid growing rate of urbanization and industrialization, different types of pollutants have increased by the emission of poisonous chemicals in the environment. These pollutants have adverse effects on the health of animals and human population, Pollutants are spread in both aquatic and tropic ecosystem by various sources. For their remediation various physical, chemical and biological methods are used. Bioremediation is one of them, it involves using of biological agents like bacteria, algae, fungi to breakdown or detoxify the various pollutants. It stimulates natural microbes to consume contaminants as their energy and food source, certain micro- organisms eat toxic chemicals and pathogens, digesting and eliminating them by changing their composition in the harmless gases likes ethane and carbon dioxide. At present time bioremediation has become primary contaminated site recovery method. It is used in different sites like petroleum stations, industrial sites, landfills, farms, lumber processing yards, mine site toiling and accidental chemical spills etc. Microorganisms have vital role in ecosystem like decomposition, oxygen production, evolution and symbiotic relationship. Microorganism plays a major role in nitrogen cycle through various methods such as nitrogen fixation, nitrate reduction, nitrification and denitrification. Microbes also remove the heavy metals from the soil and improve the soil fertility. Bioremediation can treat a range of oxidized contaminants including chlorinated ethane, chloromethane and nitrates. The bioremediation process allows nature to repair itself. It is a primarily natural process. It is the least invasive safest cleaning method.

Key Words:- pollutants, industrialization, poisonous, Bioremediation, microorganism

Industry 4.0 Revolutionizing Footwear Manufacturing:

A Review

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Abstract:

The advent of Industry 4.0 has ushered in a paradigm shift in the manufacturing landscape, with its profound impact extending to the footwear industry. This paper investigates the transformative applications of Industry 4.0 in footwear manufacturing, outlining how advanced technologies are reshaping traditional production processes and enhancing overall efficiency.

Industry 4.0, characterized by the integration of cyber-physical systems, the Internet of Things (IoT), artificial intelligence (AI), and data analytics, offers a holistic approach to modernize footwear manufacturing. In the realm of IoT, smart sensors embedded in manufacturing equipment and products enable real-time monitoring and control, optimizing production workflows. The interconnectedness of machines fosters a responsive and adaptive manufacturing environment, allowing for efficient resource utilization and timely identification of potential issues.

The integration of AI brings intelligence to footwear manufacturing processes, particularly in areas such as design, quality control, and customization. AI algorithms can analyze vast datasets to enhance product design, predict manufacturing defects, and facilitate the creation of personalized footwear, aligning production more closely with consumer preferences.

Big data analytics plays a pivotal role in harnessing insights from diverse sources, enabling manufacturers to make data-driven decisions. From supply chain management to demand forecasting, the application of analytics enhances agility and responsiveness, leading to reduced lead times and optimized inventory management.

Furthermore, cyber-physical systems, including the use of collaborative robots (cobots), contribute to the automation of labor-intensive tasks, improving overall production efficiency and reducing operational costs. This abstract emphasizes the need for a comprehensive strategy for the seamless integration of these technologies, ensuring a synergistic and interconnected manufacturing ecosystem.

As the footwear industry embraces Industry 4.0, this paper provides valuable insights for manufacturers, researchers, and policymakers. By understanding and leveraging the potential of these advanced technologies, the footwear industry can navigate the

challenges of the future, fostering innovation, sustainability, and competitiveness in a rapidly evolving global market.

Keywords: Industry 4.0, Footwear, Manufacturing, Data Science, AI

Use of Biofertilizers for Environment Safety

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Abstract

Since the beginning of human civilization, agriculture has remained the vital source of food for humans. Apart from using the agricultural products as food, agriculture is also the main part of economy in several countries. Indian Economy is also one such agro-based economy that holds the sixth position in the world. The majority of the country's population depends on agriculture for their livelihood. However, agriculture is adversely affected by numerous pests like bacteria, fungi, weeds and insects, leading to reduced yield and poor quality of the produce. Agriculture soils are continuously losing their quality and physical properties as well as their chemical and biological health. **Biofertilizers are substances that contain microorganisms, which when added to the soil increase its fertility and promotes plant growth.** Biofertilizers are substance that contains microbes, which helps in promoting the growth of plants and trees by increasing the supply of essential nutrients to the plants. This study deals with the use of biofertilizers and the important roles performed by its beneficial microbes in maintaining soil fertility and enhancing crop productivity for environment safety and sustainable development.

Key words - Agriculture, pesticides, bio-fertilizer, environment safety, sustainability etc.

Theme: Sustainable agriculture, Organic farming

**Organic Manure: Nurturing Wheat Crops and Sustaining Agriculture
in an Eco-Conscious Era**

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ABSTRACT

Organic manure on the cultivation of wheat (*triticumaestivum*), shedding light on its multifaceted effects across various stages of the crop's growth cycle. In an era where sustainable agricultural practices are gaining paramount importance, organic manure emerges as a key player in enhancing soil fertility and promoting environmentally conscious farming. Through meticulous field experiments and data analysis, the research examines the influence of organic manure on critical phases of wheat (*triticumaestivum*) cultivation, ranging from germination and vegetative growth to reproductive stages and grain development. Organic manure, derived from natural sources, contributes essential nutrients to the soil, fostering improved soil structure and microbial activity. The study delves into the nuanced interactions between organic manure and the wheat plant, elucidating the positive outcomes on nutrient uptake, water retention, and overall plant health. Beyond its agronomic benefits, the research explores the broader environmental implications of organic manure application, highlighting its potential to reduce the ecological footprint associated with conventional chemical fertilizers. Furthermore, the study considers the impact of organic manure on the nutritional profile of wheat grains, addressing the critical link between sustainable farming practices and the quality of food produced. By providing comprehensive insights into the positive effects of organic manure on wheat crops, this research contributes valuable knowledge to the ongoing discourse on sustainable agriculture, advocating for practices that not only ensure robust crop yields but also prioritize long-term environmental health and food quality.

Keywords: Environmental impact, soil fertility, sustainable agriculture and organic manure.

Study of Soil Structure Interaction on RC and Steel Frame with Structural Irregularity using SAP 2000

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ABSTRACT

Ignoring the Soil flexibility effect may result in an unsafe design. Therefore, SSI i.e. soil structure interaction plays an important role to evaluate the actual behavior of the structure. Generally, to achieve sufficient strength bracing is provided which gives stiffness for resisting lateral forces. The positioning of bracing in different patterns gives different results in terms of the response of buildings and hence, it's vital to know the most effective system of bracing concerning stability against soil-structure interaction effect. In the current study, the RC building frame, for G+3, G+5, and G+7 along with their model with different bracing by considering soil flexibility is performed for analytical and experimental study. An experimental study is done with the help of the shake table and Elastic Continuum Approach is used for analytical study. The effect of Soil-Structure Interaction on seismic parameter are studied and presented. It has been observed that the bracing system is vital to control the Soil-Structure Interaction on effect along with V bracing which is more effective to resist seismic loads.

KEYWORDS: Soil-Structure Interaction, Winkler approach, Shake-table, Time period, Steel-Bracing System

Impact of Lateral Loads on High Rise RC Framed Structure with Reference to Drift with and without Shear Wall

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ABSTRACT

In this paper the parametric model of the RC Frame is considered with and without shear walls. The Staad_ Pro V8i is used for this purpose. The results reveal that the RC Frame with the shear wall have lower displacements. The storey drifts show the reduction under the influence of the lateral loads. The results vary with the location of shear walls and the height of the structure. Special Moment Resisting Frame has revolutionized the building construction for last few decades. The structures are safe and most economic. Two building structures are modeled with same dimensions but one is without shear walls. The high seismic zone is considered with medium type of the soil. The model is exposed to wind load and seismic forces and then analyzed. The structure performance is checked for the displacement and story drifts. The results are compared for the torsional irregularity for the salient parameters.

KEYWORDS: Shear wall, Deflection, Lateral load, Stiffness, Regular structure.

Computational analysis of miRNA targets and expressions of mRNA targets of miRNAs in first degree relatives of patients with celiac disease

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Background & Aims:

Celiac disease (CD) is a multifactorial autoimmune disease induced by ingestion of gluten in genetically predisposed individuals. In this study we analysed the expression of CD-associated genes in small intestinal biopsies of first degree relatives(FDR) and disease controls in order to explore the multivariate pathway of the expression profile of CD patients.

Methods: A total of 247 FDRs were screened for anti-tissue transglutaminase (anti-tTG) serum level and HLA DQ2/DQ8 status and upper gastrointestinal tract biopsies were examined histologically for changes of enteropathy that suggest CD. Identification of predicted targets may help to understand the biological role of these differentially regulated miRNAs. Predicted targets to the altered miRNAs as obtained by next-generation miRNA-sequencing between FDR positive and FDR negative with a fold change of ≥ 2 were extracted using mirTarBase, miRDIP, miRDB and Target scan. From this, potential gene targets with possible relevance to celiac disease, like BACH2, GLS, SLC6A, MAGI2, KLF4, DLL1, ATG7 were prioritized and were taken up for subsequent validation (qPCR) through the identification of their expression at the mRNA level in a cohort of 33 biopsy samples (10 samples from FDR positive, 17 samples from FDR negative and 6 samples from Disease control patients). The GO enrichment and KEGG pathway analysis were performed using the DAVID (<http://david.abcc.ncifcrf.gov/>) online tool. $P < .05$ was considered statistically significant.

Results: BACH2 was predicted to be a target gene of miR15b-5p, being most down-regulated ($p = 0.0011$) and a significant inverse correlation with the regulatory miR15b-5p with an r value of -0.4156 and $P = 0.0161$. In addition, BACH2 mRNA expression was highly significantly down in the duodenal biopsies of FDR positive when compared with FDR negative ($P = 0.0001$). Furthermore, bioinformatics analysis commonly regulated by

miR-16-1, miR-23a, miR-502, miR-15b, miR-125b were involved in many pathways important in CeD pathogenesis like mTOR signaling pathway, MAPK signaling pathway, Adherens junction, Tight junction, Regulation of actin cytoskeleton, p53 signaling pathway, PI3K-Akt signaling pathway and Wnt signalling.

Conclusions: Validation of these biological pathways through functional studies could further confirm the present study findings.

Keywords: Celiac disease, FDR positive, FDR negative, anti-transglutaminase, HLA-DQ2/8.

A Study on Relevance of Gurukul Education System in Contemporary World

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Abstract

Education is very important for our life. Without education man is like an animal. Earlier, the Guru used to give education in Gurukul but in today's modern era teachers give education in schools and colleges. There is a big difference between the modern education system and the education system in the ancient Gurukul. In the Vedic period, children used to stay with their Guru for about 25 years to get education and Guru was everything for them. Guru used to provide them the knowledge of great men and knowledge of culture, due to which the future of the student was bright and in student life, he became a good citizen and example for the society, whereas in the era of modern education, people's life has changed a lot. Today's education is given in schools and colleges. After studying for four to five hours, the student comes home and entertains himself in sports and television and his parents are busy with their work. In this way the child wastes his time because there is no one to see him. In the education system of this modern era, maximum mechanical knowledge and scientific knowledge are taught, special emphasis is not given on the education of moral knowledge. In fact, moral education is the all-round development of the personality of the child. The great educationists, in whom the name of the school was given the name of the family or home, gave birth to a very revolutionary idea in the field of education. This was such a great idea, on the basis of which the building of socialism could automatically rise without any bloodshed. Therefore, making some changes in the present education system, there is an urgent need to re-establish the Gurukul education system of the Vedic period so that the child, who is the future of the society, can become an example of the best culture on the world stage.

Key Words : Gurukul, Education System, Moral values, Vedic Education

Efficiency of *Cerrena unicolor* Laccase on Decolourisation and Degradation of Remazol Brilliant Blue R under Optimized conditions.

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ABSTRACT

Remazol Brilliant Blue R (RBB-R) was decolorized by laccase of white-rot fungus *Cerrena unicolor*. Maximum decolourisation 81.2 % obtained at pH 5. RBBR decolourisation was found to be increasing with increase in treatment time, reaching a maximum of 85.2% at 10 hrs. Optimization of parameters as dye concentration and temperature was carried out using response surface methodology (Central compost design model) to maximize dye decolourisation. 3D response surface plot revealed that decolourisation percentage of dye initially increases as temperature increases and reached maximum at 40°C of 300 ppm dye concentration. UV-Vis spectra confirmed degradation of RBBR. The HPLC chromatogram of Remazol Brilliant Blue R suggested that there was complete degradation of RBBR dye and two products were formed. The mass spectra of RBBR (m/z- 627) degraded in to two intermediates. The m/ z peaks of mass spectra at 216 and 225 corresponded to the ratios of mass to charge of the degradation intermediates. Phytotoxicity of RBBR in terms of inhibition on seed germination and seedling root elongation of *Vignaradiata* was reduced after laccase treatment. Laccase of *Cerrena unicolor* was effective in degradation of RBBR and promising in bioremediation of waste water.

KEYWORDS- *Cerrena unicolor*, Remazol Brilliant Blue R, Laccase, *Vignaradiata*, HPLC

β -cyclodextrin production by the cyclodextrin glucanotransferase from *Alkalihalobacillus* sp.: Sequencing, cloning and purification

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Abstract:

Cyclodextrin glucanotransferase (CGTase) is an important extracellular enzyme with multiple reactions such as cyclization, disproportionation, coupling, and hydrolysis. It is widely applied in the production of cyclodextrins and various glycosides. The CGTase gene from *Alkalihalobacillus* sp. was isolated, cloned, sequenced and expressed in *Escherichia coli*. Sequence analysis showed that the mature enzyme (674 amino acids) was preceded by a signal peptide of 30-residues. Using this sequence, we have predicted the protein structure by using various available software/servers and measured the physiochemical properties of the predicted protein. The recombinant CGTase of *Alkalihalobacillus* sp. expressed in *E. coli* was successfully purified to homogeneity using His-tag affinity chromatography. The molecular weight of the purified enzyme was about 75 kDa.

Keywords: Cyclodextrin Glucanotransferase, Heterologous expression, His-tag purification

Genetic variants in the PARK2 gene and their association with oral cancer susceptibility in the North Indian population

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Abstract

Background:

The PARK2 gene encodes a protein that is part of the proteasome-ubiquitin system, which aids in protein degradation via the ubiquitination pathway. PARK2 has been linked to genotypic variation (polymorphism) in the exonic region of lung, colorectal, breast, and cervical malignancies, as evidenced by numerous studies. However, no prior research has been studied into the effect of PARK2 exonic region variant in oral cancer. This study aims to investigate the impact of the PARK2 rs1801334 genotype on the vulnerability to oral cancer in North Indian population.

Materials and Methods: To examine the PARK2 exonic genotypes, a total of 400 different peripheral blood samples were utilized, comprising 200 oral cancer patients and 200 healthy individuals serving as controls. This study observed the relationship between PARK2 genotypes and the risk of developing the disease using polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). We investigated the relationship between risk and polymorphism association using the statistical software SPSS-22.

Results: The PARK2 polymorphism rs1801334 of the exonic region containing the G allele was more prevalent in cases than in controls. Individuals with either a homozygous G or heterozygous G allele (GA + GG) at the site of the polymorphism rs1801334 exhibited a higher risk of having oral cancer ($P = 0.0254$), indicating that this polymorphism is associated with oral cancer risk in the North Indian population.

Conclusion: The polymorphism rs1801334 was significantly associated with clinicopathological variables and haplotypes, suggesting that rs1801334 may be a better prognostic factor for genetic susceptibility to oral cancer in the North Indian population.

Keywords: PARK2, Oral cancer, Genetic variation, Polymorphism

Blockchain-Driven Trust Models for Securing IoT Ecosystems

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ABSTRACT

The proliferation of Internet of Things (IoT) devices has revolutionized numerous industries, offering unprecedented connectivity and data-driven insights. However, this surge in interconnected devices has led to amplified security vulnerabilities, demanding innovative solutions to safeguard sensitive data and ensure trust within the IoT ecosystem. This research focuses on the exploration and implementation of blockchain-driven trust models as a robust security framework to fortify IoT environments. The study critically examines the limitations of traditional security measures in IoT networks, particularly concerning data integrity, authentication, and secure communication among heterogeneous devices. Leveraging the inherent features of blockchain technology—immutable distributed ledgers, cryptographic hashing, and decentralized consensus mechanisms—the research proposes novel trust models tailored for securing IoT ecosystems. By integrating blockchain-based architectures with IoT systems, this research aims to establish a transparent and tamper-resistant infrastructure, ensuring data integrity, authentication, and confidentiality across interconnected devices. The decentralized nature of blockchain enhances the resilience of IoT networks against single points of failure and unauthorized access, thereby mitigating potential cyber threats and enhancing overall system reliability. Furthermore, this research investigates the scalability and efficiency of blockchain implementations in IoT settings, considering factors like transaction throughput, latency, and resource constraints inherent in IoT devices. Strategies for optimizing blockchain protocols to accommodate the unique requirements of IoT environments will be explored to ensure practical applicability and sustainability. The proposed blockchain-driven trust models hold immense potential in various IoT applications, including healthcare, smart cities, supply chain management, and industrial automation. Ethical considerations pertaining to data privacy, governance, and compliance will be paramount in evaluating the feasibility and ethical implications of these models. In a nutshell, this research aims to pioneer the deployment of blockchain-based trust models to fortify the security infrastructure of IoT ecosystems, addressing critical vulnerabilities and fostering a more resilient and trustworthy interconnected environment.

KEYWORDS: Blockchain Integration, Resilient IoT Infrastructure, Trustworthy IoT Frameworks, Secure IoT Communication and IoT Security Enhancement.

"Unveiling Agra's Economic Downturn During British Colonialism: Unraveling Historical Insights and Socio-Economic Ramifications"

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Abstract:-

Agra, once a vibrant center of trade, cultural brilliance, and exquisite craftsmanship, witnessed a gradual fading of its economic prominence under British rule. This scholarly investigation meticulously examines the diverse factors that contributed to Agra's economic downturn, delving into British policies, commercial strategies, and their profound impact on local industries and labor dynamics. Moreover, this study ventures into a comprehensive exploration of the wider socio-economic implications stemming from Agra's decline. It probes how these repercussions reverberated through the local populace and shaped the broader regional economic landscape. Through a rigorous analysis of historical archives, economic indicators, and scholarly discussions, this paper substantiates its arguments, offering a nuanced understanding of Agra's economic transformation during the colonial era. By unraveling the complex interplay between colonial dynamics and indigenous economic systems, it enriches our scholarly comprehension of historical economic shifts and their profound implications.

Key words: Economy, Revenue policies, Tax system, Agriculture.

REUSE OF PLASTIC WASTE FOR IMPROVING BEARING CAPACITY OF SAND

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ABSTRACT

Soil stabilization is the best method for improving engineering properties of soil. In present time for soil stabilization various admixture such as cement, lime, fly ash, gypsum etc. can be used but these admixtures are costly and are not easily available everywhere. Many experts believe that utilization of waste plastic material is quite helpful for improving engineering properties of sand. In the present world, where there is a shortage of good soil on the other hand plastic waste can be seen in abundance. The lack of good soil creates many problems in construction while on the other hand the environment is in trouble due to increasing plastic waste. The government of India is running many programs to reduce plastic pollution such as SBM, Plastic waste management, India plastic pact, Project Replane, Glolitter partnerships etc. which makes it necessary that we for soil stabilization such substances should be used which are in the interest of the environment. In this study all types of plastic waste with coal tar are used as an admixture in different percentage.

KEYWORD: Environmental Benefits, Non-Degradable Waste, and PET Bottle for Ground Improvement, Advantages of pet bottles.

Neuro-Robotic Interfaces: Bridging the Gap between Brain Signals and Robotic Actions

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ABSTRACT

The merging of neuroscience and robotics has unlocked unprecedented possibilities in creating direct interfaces between the human brain and robotic systems. This research endeavors to establish robust and efficient neuro-robotic interfaces, facilitating seamless communication between neural signals and robotic actions. The primary aim is to bridge the gap between human intent, as manifested in brain activity, and the precise execution of tasks by robotic systems. This study focuses on the development and optimization of brain-computer interfaces (BCIs) capable of decoding neural signals associated with motor commands and translating them into actionable instructions for robotic devices. The research leverages non-invasive neural sensing technologies such as electroencephalography (EEG) and functional near-infrared spectroscopy (fNIRS) to capture brain signals related to specific motor intentions and cognitive states. Additionally, the research involves the design and implementation of advanced machine learning algorithms and neural decoding techniques to interpret these neural signals accurately. By establishing a bidirectional communication channel between the human brain and robots, this research aims to enable users to seamlessly control and interact with robotic systems through their thoughts and intentions. The proposed neuro-robotic interfaces hold profound implications across various domains, including rehabilitation, assistive technologies, and human augmentation. For instance, these interfaces could empower individuals with motor disabilities to control robotic prosthetics or devices with unprecedented dexterity and naturalness, thereby significantly enhancing their quality of life. Ethical considerations regarding user consent, privacy, and the safe integration of neuro-robotic interfaces into everyday life will be paramount in this research. The study plans to conduct rigorous validation experiments and user trials to evaluate the usability, reliability, and safety of these interfaces, ensuring their practicality and acceptance in real-world scenarios. In summary, this research aims to establish robust neuro-robotic interfaces that facilitate intuitive and precise control of robotic systems through direct brain signals, heralding a new era of human-robot interaction with profound implications for healthcare, rehabilitation, and assistive technologies.

KEYWORDS: Cognitive Interface Technologies, Human-Machine Fusion, Neural-Controlled Robotics and Brain-Driven Robotics.

Creating a Smart System to Monitor Humidity and Temperature Using NODE MCU and DHT11 Sensor for IoT

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ABSTRACT

In our rapidly evolving digital landscape, the integration of smart technologies has revolutionized how we interact with our environment, particularly in healthcare and everyday living. This research delves into the development of a sophisticated system tailored to monitor humidity and temperature using NODE MCU and the DHT11 sensor, specifically designed for the Internet of Things (IoT) applications. Amidst the complexities of modern healthcare and daily life, this innovative system serves as a beacon of technological advancement. It operates as a guardian, continually assessing and reporting on the surrounding temperature and humidity levels. Through the utilization of cutting-edge NODE MCU and the precision-oriented DHT11 sensor, this system is geared toward enhancing our understanding of environmental dynamics. At its core, this smart monitoring system champions ease of use and reliability. Its user-friendly design ensures accessibility while offering accuracy in capturing essential data. This enables individuals, industries, and healthcare facilities to preemptively respond to fluctuations in humidity and temperature, thereby mitigating potential risks and optimizing various processes. Beyond its immediate applications, this research showcases the broader implications of IoT in revolutionizing healthcare and daily living. By harnessing the potential of NODE MCU and the DHT11 sensor, it not only addresses the imperative need for real-time monitoring but also highlights the transformative power of technology in safeguarding health and improving overall well-being. Furthermore, this system holds promise in diverse sectors beyond healthcare, including agriculture, industrial processes, and home automation. Its adaptability and precision make it an invaluable tool for optimizing conditions necessary for the success of these industries, safeguarding against losses, and ensuring efficiency. As we navigate an increasingly interconnected world, the fusion of smart technology, like the one examined in this research, propels us toward a future where proactive monitoring, efficient resource management, and improved healthcare outcomes converge. This paper stands as a testament to the potential of IoT-driven systems in reshaping our environment for the betterment of society.

KEYWORDS: IoT-enabled Monitoring, Environmental Sensing, Smart Healthcare Solutions, NODE MCU Technology and DHT11 Sensor Applications.

Evaluation of Lemongrass Nanoemulsion and its Alum Blend for Larvicidal Activity Against Dengue Vector *Aedes aegypti*

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Abstract

Ethnobotanicals have untapped potential, which is now being utilized by researchers in controlling mosquito vectors. Also, Alum is a well-known double salt of Indian ayurvedic medicine system and is an Environmental protection agency-EPA approved pesticide. It has been explored in past for its potential in managing pests. Therefore, in the present study, Lemongrass (Lg) essential oil and alum (Al) blend were used for Nanoemulsions (NEs) preparation, and their activity was checked against dengue vector, *Aedes aegypti*. Various ratios of Lg-NEs and Lg-Al NEs were prepared 1:0.25, 1:0.5, 1:1, 1:1.5 and 1:2. Thermodynamic stability studies revealed, 1:0.5 NEs to be stable. NEs were characterized using, DLS, TEM and FTIR. DLS revealed the average droplet size of plain Lg-NEs to be 105 nm, while the average droplet size of Lg-Al NEs was smaller, 97 nm. Both type of NEs have low PDI and high zeta potential values, indicating higher stability of both type of NEs. Both categories of NEs were spherical in shape. The size and shape of NEs were further confirmed by TEM analysis. FTIR studies were done to reveal details about functional moieties. Bioefficacy studies done on III instar larve of *Aedes aegypti* revealed LC₅₀ of plain NEs to be 30 ppm at 24 hrs, while for Lg-Al NEs, it dropped down to 10 ppm at 24 hrs, which was quite lower than Lg-NEs, clearly indicating the effectivity of Lg-Al NEs over Lg-NEs, the same is also evident from FE-SEM micrographs. Both types of NEs were also studied for their toxicity concern, if any, but they were found absolutely safer on non-target organism, *Daphnia magna*. Thus, it can be concluded that, Lg-Al NEs are comparatively more effective larvicide than Lg-NEs due to presence of alum and their small size, and thus can be utilized in dengue vector control.

Keywords: Nanotechnology, Nanoemulsions, Lemongrass, Alum, Dengue

Synergistic Symphony of Mycorrhiza and PGPRs Isolated from the Himalayan Region on Plant Growth Promotion of *Stevia rebaudiana* (Bertoni) *in-vitro*

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Abstract:

Stevia rebaudiana (Bertoni), also known as “meethitulasi” in India is a medicinally and industrially important perennial herb belonging to the Asteraceae family. It accumulates secondary metabolites stevioside and rebaudioside-A in its leaves, serving as a natural sweetener source with anti-diabetic, antioxidant, anti-inflammatory, anti-cancer, renal and cardiac healing properties. Stevia has gained importance as it is a great substitute for artificial sweeteners. The study investigates the effect of mycorrhizal fungi *Serendipitaindica* and the assessment of PGPRs isolated from the Himalayan region (IHBB745 and IHBB13662) along with their combinations on the growth of the plant under tissue culture conditions. The rhizobacterial isolates were assessed for their morphological and biochemical characteristics along with Plant Growth-Promoting (PGP) traits such as phosphate solubilisation, IAA production, ammonia production, HCN production, siderophore production, potassium solubilisation, and exopolysaccharide production. Compatibility among the microorganisms was assessed and seven treatments were used to inoculate the nodal explants of stevia. The treatments involved in the study were: 1-*S. indica*, 2-IHBB745, 3-*S. indica*+IHBB745, 4-IHBB13662, 5-*S. indica*+IHBB13662, 6-*S. indica*+IHBB745+IHBB13662 and 7-IHBB745+IHBB13662. Two weeks post-inoculation, the agronomical parameters of the plants were studied. At the preliminary level, the interaction between plant and microbes reveals an influence the plant growth and development with a high number of axillary branches, number of leaves and root length. It will help in better understanding the effect of microbes on plant growth by direct mechanism. The best treatment was with the plants inoculated with IHBB745, IHBB13662 and *Serendipitaindica* as compared to the control. Hence, inoculation with Plant Growth Promoting Microorganisms (PGPMs) promotes plant growth and its various agronomical parameters. Understanding the intricacies of plant-microbe interaction with stevia in tissue culture conditions holds immense significance in optimizing stevia cultivation practices and enhancing yield and accumulation of Steviol glycosides in plants.

Keywords: Mycorrhiza, *Stevia rebaudiana*, Plant Growth Promoting Rhizobacteria, *in-vitro*

Monitoring Heavy Metals in the Food Chain across Designated Blocks of Faridabad District and its Possible Phytoremedial mitigation

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ABSTRACT

India is a growing economy with 1.41 billion strong population in the world, and simultaneously an industrial growth has surged, and a major contribution to this growth is due to industries directly or indirectly contributing to the rise of heavy metal pollution. **Scope:** The study aims to address the pertinent problem of heavy metal toxicity in industrial areas and attempts to systematically address the knowledge gaps about total human, animal and environmental exposure with the sample location of Faridabad in the state of Haryana in India. **Objectives:** (i) Analysis of heavy metal contaminants in different abiotic and biotic components in different blocks in Faridabad District, Haryana; (ii) Assessment of heavy metal exposure in some domestic animals by fodder, feed and water intake with a focus on risk assessment in Faridabad District, Haryana; (iii) Evaluation of efficacy of herbal Phytoremediation in goats. **Methodology:** (i) Samples [water, soil, grass, milk, meat (desi poultry, goat, and/or sheep), egg (desi) and hair (goat/sheep)] (n=30) to be collected from 90 different sample sites identified in the 3 blocks of Faridabad. Estimation of heavy metals using Atomic Absorption Spectrophotometer to be done in triplicate against each metal; (ii) Phytoremedial mitigation will involve 2 parts. Part 1: Environment - The *Vetiveriazizanioides* plant will be used based on its established considerable potential for remediation of heavy metals and organic pollutants. Part 2: Animal model - A 3-months sub chronic toxicity study will be carried out for Arsenic in goat, and the efficacy of plant to ameliorate the induced toxicity will be studied. Data to be analysed statistically using one way ANOVA using SPSS. **Conclusion and Future outlook:** Due to the influence of heavy metal on human health, there is a need to monitor their concentrations in the environment which might provide the possibility for safe food production, better mitigation measures and select appropriate prophylactic or therapeutic measures. This study can act as a baseline data for heavy metal levels in food chain in Faridabad, Haryana and can also help in comparing with standard toxicological base levels for safe exposure levels to heavy metals for humans and animals.

KEYWORDS: Heavy metals, Pollution, Contamination, Risk assessment, Phytoremediation

LEVEL OF EMPOWERMENT AMONG WOMEN ENTREPRENEURS: A STUDY

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Abstract:

The promotion of women entrepreneurship serves as a significant mechanism for fostering women's empowerment. Access to resources and markets, control over resources, actual ownership, and the authority to make and act on decisions are potentially key aspects in empowering women. In a country such as India, characterised by a significant population and the pervasive issue of unemployment, entrepreneurship emerges as a potentially effective mechanism for women to enhance their empowerment. The present study investigates the level of empowerment of women entrepreneurs in various dimension within kokrajhar district of Bodoland Territorial Region (BTR).The study is both descriptive and analytical in nature which is based on both primary and secondary data. The level of women empowerment is measured by developing empowerment index with the help of weighted score formula and developing empowerment index range for it .The findings of the study reveal that there is a positive relationship between women entrepreneurship and empowerment.

Keywords: empowerment, entrepreneurship, women, economic, promotion

Indian Influence on Myanmar's Buddhist Architecture

Abstract

India and Myanmar shared close cultural contacts since ancient times. With the assimilation of Buddhism in main stream Myanmar the art and architecture also began reflecting the Indian influence. From Funnan to Bengal through the city of BaikhthanoMyoHaung India and Myanmar had been deep exchanges on all fronts. Northern Myanmar had trade and cultural contacts with eastern India and was inclined towards Mahayana school of Buddhism. But the existing nature of Mahayana in northern Myanmar was not the same as practised earlier in India. There was a great deal of diversion to tantrism. It adopted Vamacara practice. It was during this time when eastern India experienced a wide practice of carving religious and secular motifs on terracotta plaques due to absence of stone media Pagan is one of the most significant archaeological sites of Myanmar. Pyanpaya laid the foundation of Pagan in 849 CE but it was king Anawratha (1044-1077) who gave Pagan a new identity and glory in the second half of 11th

century CE. Where the king Anawratha conquered Pagan and decided to construct the massive Buddhist structure the artisan had no choice but to use locally available non stone raw material as the region is scarce in stone material like sandstone, laterite or marble. This encouraged them to make excessive use of wood and brick in structure. it also motivated them to look over its neighbourhood in west where terracotta plaques are used in abundance in in similar kind of environmental condition. But the replication was not mare copying the style and technology in Pagan it underwent significant modification and innovation. It was only the idea of depicting motifs on terracotta plaques which was adopted from eastern India, rest of the other elements are reciprocated according to their own requirements and the faith of Theravada. This paper aims to delineate the Indian influence on Myanmar Buddhist architecture.

A STUDY ON CAUSES OF LAPSATION FROM THE INSURANCE POLICY HOLDER PERSPECTIVE OF VIJAYAWADA CITY

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ABSTRACT

The human experience is replete with many hazards and uncertainties. One effective approach to mitigating the impact of these risks and losses is to get insurance coverage. Insurance plays a significant role within the financial sector of the Indian economy. Life insurance has emerged as an essential component of the human existence. As it is the essential all the earning people are approached to buy the policy, but as life transforms so many factors are influencing them to not to pay the premium and that leads to lapsation. If the rate of lapsation is huge its impact on financial health of the company. The present study is aimed at causes of lapsation from the policy holder perspective and collected data from the selected sample of policy holders in the Vijayawada city, Andhra Pradesh. The collected sample is analysed with statistical tools for draft conclusions and meaningful suggestions.

Keywords: Insurance, Lapsation, Policy, Policyholder, and Premium

Socially Engaged Buddhism and Thich Nhat Hanh

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Abstract

Engaged Buddhism, which is also known as socially engaged Buddhism, refers to a Buddhist social movement that emerged in Asia in the 20th century. It is composed of Buddhists who wish to apply Buddhist ethics, insights gained from meditation practice, and the teachings of Buddhism to contemporary situations of social, political, environmental, and economic suffering and injustice. Modern Engaged Buddhism emerged in Vietnam in the 1950s from the teachings of Thiền Buddhist teacher Thich Nhat Hanh. During the 1960s, the terms "engaged Buddhism" and "socially engaged Buddhism" were coined by loosely knit networks of Buddhists in Asia and the West to describe the adaptation of Buddhist values and ethical conduct for social and political activism. He adopted. It included many non-violent social and political activities such as peace building, promotion of human rights, environmental protection, rural development, combating ethnic violence, opposition to war, and support of women's rights. With globalization and technological advances, engaged Buddhist organizations and efforts have spread around the world. This paper is divided into four sections. First section is about Engaged Buddhism. Second section is the Founding Plum Village in France. Plum Village welcomes people of all ages, backgrounds and faiths at retreats where they can learn practices such as walking meditation, sitting meditation, eating meditation, total relaxation, working meditation and stopping, smiling, and breathing mindfully. Third section is the Thich Nhat Hanh, Ahimsa Trust and Thay in India: 1988, 1997 and 2008. Ahimsa Trust was set up in 1996, as a social, educational and cultural not-for-profit NGO (Non-Governmental Organization). Ahimsa is an ancient Indian ethical precept of not causing harm by one's body, speech and mind. Last section is the Thich Nhat Hanh comes to Naglok and meets the Dalit community.

Key words: Ahimsa trust, Plum Village, Dhamma, Dalit, Mindfulness.

Physico-Chemical Studies of Yamuna Water Quality

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ABSTRACT

Water is internal medium for almost all organism and principal external medium for several organism. The main sources of water is our rivers. Yamuna, the main river of India, is a good source of water. In Mathura, millions of pilgrims take dip in holy river Yamuna as Mathura is the birth place of Lord Krishna. But our holy river Yamuna is highly polluted as the sewage along with garbage is disposed off in Yamuna.

In this study water quality of river Yamuna was assessed from various sites with regular intervals during Sep 2022 to August 2023. The present study outlined the assessment of physicochemical parameters like temperature, pH, turbidity, Dissolved Oxygen (DO), Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD), TDS, Total hardness, Cr, Fe, Cd, Pb, Ni, Mn, Zn, Cu, Fluorides (F^-) Phosphate (PO_4^{3-} , - P), Nitrate (NO_3^{-1} , - N), Chloride (Cl^{-1}), Electrical Conductivity (EC). This study indicates that Yamuna river water is polluted and unfit for drinking as well as for aquatic life of organism, in spite of it, Yamuna water should be treated before use otherwise it will cause harmful water related diseases to human as well as aquatic biota.

Keywords: Physico Chemical Analysis, Electrical Conductivity, Biochemical Oxygen Demand, Total Dissolve Solids, Chemical Oxygen Demand, Dissolved Oxygen

Screening and characterization of Mangrove endophytic fungi for enzyme tannase production.

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Abstract:

Tannase, a highly adaptive biocatalyst, plays a pivotal role in diverse bioconversion reactions in the nature. This enzyme exhibits numerous applications across various industrial sectors, including food, pharmaceuticals, chemicals, and beverages. This study aimed to screened and characterize to obtain superior tannase producers from Mangrove Plants. A total of 84 filamentous endophytic fungi were isolated from mangrove samples and subsequently identified. These fungal strains were primary screened using Tannic acid agar plates method. Out of the screened strains, 20 fungal isolates demonstrated tannase production ability. They were subjected to quantitative screening for extra cellular enzyme tannase production using submerged fermentation technique using tannic acid as sole source of tannins. A total 13 isolates exhibited excellent tannase activity. The isolate number LV-84 (21.21IU/ml), LV-74(15.41 IU/ml), LV-78 (6.98IU/ml), LV-38(6.97IU/ml), LV-77(6.32IU/ml), LV-016 & LV_066 (6.37IU/ml) and LV_060(6.18IU/ml) were highest tannase producer.

.Keywords: Mangrove, endophytic fungi, Tannase, Screening etc.

LEVEL OF EMPOWERMENT AMONG WOMEN ENTREPRENEURS: A STUDY

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Abstract:

The promotion of women entrepreneurship serves as a significant mechanism for fostering women's empowerment. Access to resources and markets, control over resources, actual ownership, and the authority to make and act on decisions are potentially key aspects in empowering women. In a country such as India, characterised by a significant population and the pervasive issue of unemployment, entrepreneurship emerges as a potentially effective mechanism for women to enhance their empowerment. The present study investigates the level of empowerment of women entrepreneurs in various dimension within kokrajhar district of Bodoland Territorial Region (BTR).The study is both descriptive and analytical in nature which is based on both primary and secondary data. The level of women empowerment is measured by developing empowerment index with the help of weighted score formula and developing empowerment index range for it .The findings of the study reveal that there is a positive relationship between women entrepreneurship and empowerment.

Keywords: empowerment, entrepreneurship, women, economic, promotion

Reinstating the Anti-Gravity Aircraft through the Remembrance of Ménage and Mythical Mushroom

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Abstract

The Malayalam movie and science fiction fantasy, *Bharathan Effect*, attests to Bharathan's traumatic neurosis as an exacerbation of the chapped disconcertment precipitated through repression while he has to scour his highbrowness. The role of Bharathan's mother is supplemented by Gita, his wife, in demoralizing his avant-garde lambency, which looms up the memory repression by degrees. He drowns in an aqua of forgetfulness due to dissociative amnesia, whereupon he could not salvage his erstwhile docility anent the anti-gravity aircraft. The paper at length parses the rectification of Bharathan's interim amnesia off the back of forgetting and remembrance in the emendatory of Retrieval-Induced Forgetting and Context-Dependent Memory.

Keywords: Science Fantasy, Memory Repression, Traumatic Neurosis.

स्त्री शिक्षा पर स्वामी विवेकानंद के विचार और उनकी वर्तमान में प्रासंगिकता

समीर देव

शोध छात्र, इतिहास

इतिहास एवं संस्कृति विभाग

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शोध सार

स्वामी विवेकानंद एक महान दार्शनिक शिक्षाशास्त्री तथा मानवतावाद के अग्रदूत थे। राष्ट्र के साथ-साथ समाज के विकास में शिक्षा को उपयोगी बताकर स्त्री व पुरुष को समान रूप से शिक्षा देने का पुरजोर समर्थन किया। उन्होंने बताया कि भारत की प्रगति में महिलाओं की अज्ञानता मुख्य बाधा है। स्वामी जी के अनुसार दुनिया की तरक्की तब तक संभव नहीं जब तक की महिलाओं की स्थिति नहीं सुधरती। केवल एक पंख की मदद से कोई चिड़िया उड़ नहीं सकती। स्वामी जी की शिक्षा का उद्देश्य मानव निर्माण व चरित्र निर्माण है यह सिद्धांत महिला शिक्षा क्षेत्र में भी लागू होते हैं। महिलाओं द्वारा समाज को दिए जाने वाले विभिन्न प्रकार के योगदान को आधार बनाकर स्वामी जी ने महिलाओं हेतु अलग-अलग पाठ्यक्रम मातृभाषा में बताये। वर्तमान समय में भी महिलाएं कई समस्याओं जैसे सामाजिक, आर्थिक, राजनीतिक, सांस्कृतिक आदि से पीड़ित हैं जिनको स्वामी जी द्वारा प्रदत्त शिक्षा के माध्यम से दूर किया जा सकता व उनको सशक्त बनाया जा सकता है। अतः प्रस्तुत शोध पत्र में स्त्री शिक्षा के विकास व उन्नति हेतु स्वामी विवेकानंद के दृष्टिकोण व गतिविधियों का वर्णन किया गया है व उनकी वर्तमान में उपयोगिता सिद्ध की गई है।

बीज शब्द शिक्षा, महिला शिक्षा, महिला सशक्तिकरण, पाठ्यक्रम, समानता

भारतीय राष्ट्रवाद के विकास में स्वामी दयानंद सरस्वती की भूमिका. एक ऐतिहासिक अध्ययन

डॉ अमित कुमार शर्मा

सहायक आचार्य

इतिहास एवं संस्कृति विभाग

डॉ भीमराव अंबेडकर विश्वविद्यालय आगरा

आलेख सार

भारतीय राष्ट्रवाद के इतिहास में स्वामी दयानंद सरस्वती का नाम बहुत ही महत्वपूर्ण है च वह भारतीय राष्ट्रवाद और भारतीय पुनर्जागरण के एक ऐसे व्यक्तित्व हैं जिन्होंने विशुद्ध रूप से भारतीय राष्ट्रवाद का प्रतिपादन करके उसे वैदिक भावना से ओत-प्रोत किया है च इसी कारण उनके राष्ट्रवाद को सबसे अधिक मौलिक हिंदू राष्ट्रवाद कहा जाता है च क्योंकि स्वामी जी प्रत्यक्ष रूप से भारतीय राष्ट्रीय आंदोलन से जुड़े नहीं थे लेकिन उनके विचारों ने भारतीयों में राष्ट्रीयता की चेतना पैदा करने में एक अहम भूमिका अदा की थी च उन्होंने स्वराज शब्द का सबसे पहले प्रयोग करके भविष्य के लिए एक नई जागृति प्रदान की और यही शब्द आगे चलकर राष्ट्रवादियों के लिए मूल मंत्र सिद्ध हुआ था च आत्मविश्वास तथा आत्म गौरव की भावनाएं उत्पन्न हुईं जिसके कारण भारतीय राष्ट्रवाद के इतिहास में एक नए युग का जन्म हुआ च यह शोध पत्र भारतीय राष्ट्रवाद के उसे पुरोधे पर प्रकाश डालने का प्रयास है जिसने विकास का एक नया मार्ग अपने विचारों से प्रस्तुत किया था स

मूल शब्द च राष्ट्रवाद च स्वदेशी च स्वराज च देशप्रेम च पुनर्जागरण

भारतीय राष्ट्रवाद के कलात्मक पहलुओं का अध्ययनरू एक ऐतिहासिक विवेचन

सतेन्द्र कुमार

शोध छात्र, इतिहास

इतिहास एवं संस्कृति विभाग

डॉ भीमराव अंबेडकर विश्वविद्यालय आगरा

शोध सारांश

18वीं शताब्दी में भारत में राजनीतिक पतन के साथ सांस्कृतिक विरासत में भी निष्क्रियता छा गई। राजा रवि वर्मा, अनींद्रनाथ टैगोर, नंदलाल बोस, शारदा चरण उकील जैसे प्रसिद्ध कलाकारों ने अपनी कलाकृतियों के माध्यम से सांस्कृतिक तत्वों को विषयवस्तु बनाकर भारतीय कला की समृद्ध विरासत को उजागर किया। जिससे भारतीयों के मन में अपनी खोई हुई सांस्कृतिक पहचान के प्रति जन जागृति का भाव उत्पन्न हुआ। समाज का लगभग प्रत्येक तबका राष्ट्रीय आंदोलन के दौर में अपनी सांस्कृतिक विरासत को अभिव्यक्त करता रहा। जिससे राष्ट्रवादी विचारधारा और प्रबल हुई। भारतीय सांस्कृतिक अतीत के अनेक आयाम हैं जिनमें से एक को शोधार्थी ने अपने शोध पत्र का विषय बनाया है। अतः शोध पत्र में राष्ट्रवाद के कलात्मक पहलुओं पर दृष्टिपात किया गया है। जिसके अंतर्गत औपनिवेशिक काल में चित्रकला, स्थापत्य, संगीत एवं नृत्य इत्यादि कलाओं का विवरण समीचीन होगा।

मूल शब्दरू राष्ट्रवाद, स्थापत्य, चित्रकला, संगीत, नृत्य

स्वतंत्रता के बाद भारतीय कला का बदलता परिवेश

डॉ० अनंता शांडिल्य

एसोसिएट प्रोफेसर

चित्रकला विभाग

श्री जे जे टी विश्वविद्यालय विद्यानगरी चुड़ैला झुंझुनू

सारांश

भारतीय तथा पश्चिमी उदाहरणों से बात स्पष्ट होती है। कि कलाकार की सीमा को सिर्फ रूपाकार के स्तर पर नहीं बल्कि कल्पना के स्तर पर भी बताती है। कलाकार अपनी चित्रात्मक कल्पना की सीमा में वैज्ञानिक तथा धार्मिक अनोखापन तथा आलौकिकता हास्य तथा चमत्कार को एक कर देते हैं। भारतीय कल्पना में भी काफी जटिलता है। इस बात को शताब्दियों पुरानी बहुरूपक कला तथा भारतीय सौंदर्यशास्त्र की सैद्धांतिक व्याख्या में नये प्रयोगधर्मों के साथ सिद्ध करेगी। यह सभी प्रश्न के आधार पर मेरा शोध पत्र एक विचारणीय प्रश्न खड़ा कर रहा है।

बीज शब्द

इंस्टालेशन छापाकला वीडियो आर्ट अतिथार्थवादी त्रिआयामी।

स्वतंत्रता के बाद भारतीय कला का बदलता परिवेश

डॉ० अमिता राज गोयल

एसोसिएट प्रोफेसर

चित्रकला विभाग

राजस्थान विश्वविद्यालय जयपुर

आर.09 राजस्थान विश्वविद्यालय आवासीय परिसर

जयपुर.

सारांश

भारतीय तथा पश्चिमी उदाहरणों से बात स्पष्ट होती है। कि कलाकार की सीमा को सिर्फ रूपाकार के स्तर पर नहीं बल्कि कल्पना के स्तर पर भी बताती है। कलाकार अपनी चित्रात्मक कल्पना की सीमा में वैज्ञानिक तथा धार्मिक अनोखापन तथा आलौकिकता, हास्य तथा चमत्कार को एक कर देते हैं। भारतीय कल्पना में भी काफी जटिलता है। इस बात को शताब्दियों पुरानी बहुरूपक कला तथा भारतीय सौंदर्यशास्त्र की सैद्धांतिक व्याख्या में नये प्रयोगधर्मों के साथ सिद्ध करेगी। यह सभी प्रश्न के आधार पर मेरा शोध पत्र एक विचारणीय प्रश्न खड़ा कर रहा है।

बीज शब्द

इंस्टालेशन, छापाकला, वीडियो आर्ट, अतिथार्थवादी, त्रिआयामी।

बालिकाओं में स्वास्थ्य एवं शिक्षा के प्रति जागरूकता – आगरा जनपद के बिचपुरी ब्लॉक के विशेष सन्दर्भ में

नीलम हरदैनिया, प्रो. मुकेश चन्द

समाजशास्त्र विभाग, बी.एस.ए. कॉलेज, मथुरा (उ.प्र.)

सार- जैसा कि विदित है कि स्वास्थ्य एक बहुआयामी प्रक्रिया है। अर्थात् इसके अन्तर्गत बहुत सी अवधारणाएँ शामिल हैं। जैसे सामाजिक, आर्थिक, सांस्कृतिक एवं राजनैतिक तत्वों द्वारा निर्धारित है। ग्रामीण क्षेत्र की मुख्य आवश्यकताएँ जैसे- भोजन, जल, आवास, सफाई, स्वास्थ्य आदि तक जनता की पहुँच स्वास्थ्य को प्रभावित करती है और ये सब नैतिकता का प्रतिबिम्ब है। स्वास्थ्य बालिकाओं के सम्पूर्ण विकास के लिए जरूरी निवेश है। मेरा यह विषय ग्रामीण बालिकाओं में स्वास्थ्य की परिभाषा को परिभाषित करता है। जिसके अन्तर्गत बालिकाओं के शारीरिक शिक्षा योग, बच्चों के शारीरिक, मानसिक, भावात्मक विकास में योगदान करते हैं। हमारे देश के आधे से ज्यादा बच्चे कुपोषण और छुआछूत की बीमारियों का सामना करते हैं। इसलिए भारत के हर क्षेत्र की पाठ्यचर्या को स्कूल में सभी स्तरों पर खासकर बालिकाओं के सामाजिक समूहों पर ध्यान देते हुए उन्हें सम्बोधित करता होगा। और हमें यह प्रस्ताव रखना चाहिए कि हर उच्चतर और प्राथमिक स्कूल के मीड-डे-मील कार्यक्रम और बच्चों के स्वास्थ्य की नियमित जाँच करानी चाहिए। स्वास्थ्य और शिक्षा बच्चों की जरूरतों से सम्बन्धित होनी चाहिए। साथ ही विकास के विभिन्न स्तरों का महत्व हो। शिक्षा और स्वास्थ्य कार्यक्रम का यह विचार 1940 के पास अस्तित्व में आया। इसके कुछ अन्य कारण थे जैसे- स्वास्थ्य की शिक्षा की, शिक्षा की, स्कूल के खान-पान एवं स्कूल के वातावरण पर और शारीरिक शिक्षा की देखभाल पर ध्यान दिया जायें। यह जो कुछ कारण थे ये पूरी तरह से बच्चों के लिए महत्वपूर्ण थे। इसलिए इन्हें बच्चों के पाठ्यचर्चा में शामिल करना जरूरी था।

वर्तमान समय में इस विषय पर ज्यादा ध्यान दिया गया है। इस विषय पूरी तरह से व्यापकता नहीं दिखाई देती है। इस पाठ्यचर्चा में शिक्षा एवं स्वास्थ्य को अलग-अलग व्यवहार में लाया गया है। इस पाठ्यचर्चा में कहीं न कहीं कुछ न कुछ परिवर्तन होता रहा है। हम यह मानते हैं कि जहाँ भी जिस भी गाँवों में स्कूल का एक मुख्य रूप पेश होना चाहिए जैसे स्कूल का वातावरण स्वच्छ हो, स्कूल में चिकित्सक सुविधा होनी चाहिए। स्कूल में स्वास्थ्य सुविधा अच्छी खान-पान इन सभी पाठ्यचर्चा पर अधिक ध्यान देना चाहिए। सरकार ने बालिका व महिला स्वास्थ्य को ध्यान में रखते हुए महिला व बालिका अधिकारिता एवं बाल विकास विभाग के संयुक्त जाँच पड़ताल में 19 नवम्बर 2021 को "उड़ान योजना" की शुरुआत की। जिससे बालिकाओं को प्रथम चरण में राजकीय विद्यालयों एवं चयनित आंगनवाड़ी केन्द्रों पर सेनेटरी नेपकिन वितरण किये व अन्य शिक्षक संस्थानों में व अन्य आंगनवाड़ी केन्द्रों पर निःशुल्क सेनेटरी नेपकिन वितरण किया जायेगा। इसके अलावा मुख्यमंत्री द्वारा बालिकाओं के प्रति समाज में सकारात्मक सोच विकसित करने एवं उनके स्वास्थ्य तथा शिक्षा के स्तर में सुधार लाने हेतु "मुख्यमंत्री राजश्री योजना" की शुरुआत की। इस योजना के अन्तर्गत 1 जून 2016 या उसके बाद जिन बालिकाओं ने जन्म लिया वह इस योजना के प्रति लाभ की पात्र होगी।

नयी शिक्षा नीति एवं महिला सशक्तीकरण

पंकज गुप्ता (शोधछात्र)

सनातन धर्म महाविद्यालय, अलीगढ़

सारांश

तीन दशकों से अधिक व्यतीत हो जाने के बाद अंततः भारत सरकार ने 29 जुलाई 2020 को बहुप्रतीक्षित नयी शिक्षा नीति को मंजूरी दे दी। यह शिक्षा नीति 21वीं सदी में भारत की पहली शिक्षा नीति भी है। इसका मूल उद्देश्य 21वीं सदी के भारत के सर्वांगीण विकास हेतु अनिवार्य आवश्यकताओं की पूर्ति करना है। नयी शिक्षा नीति 2020 का उद्देश्य भारत की परम्पराओं एवं मूल्यों को सुरक्षित रखते हुए शिक्षा के लिए अपेक्षित लक्ष्यों को प्राप्त करना है। इसके अन्तर्गत शिक्षा की व्यवस्था, शिक्षा का नियमन, शैक्षिक प्रशासन एवं शिक्षा व्यवस्था से सम्बन्धित विभिन्न पक्षों में सुधार एवं उनका पुनर्गठन शामिल है। राष्ट्रीय शिक्षा नीति 2020 का प्रमुख उद्देश्य प्रत्येक विद्यार्थी में निहित रचनात्मक क्षमताओं को विकसित करके विद्यार्थी को केवल अक्षर एवं संख्या का ज्ञान करना ही नहीं, बल्कि नैतिक, सामाजिक, भावनात्मक एवं राष्ट्रियता की भावना से परिपूर्ण कौशल युक्त युवाओं को तैयार करना है, जो स्वयं का जीवनयापन करने योग्य हों, साथ ही देश की प्रगति में भी सामाजिक एवं आर्थिक रूप से अपना योगदान कर सकें। प्रस्तुत शोधपत्र नयी शिक्षा नीति के महिला सशक्तीकरण में योगदान विषय पर आधारित है। अध्ययन में इसके विभिन्न पहलुओं पर विस्तार से चर्चा की गयी है।

तकनीकी शब्द— शिक्षा नीति, महिला सशक्तीकरण, योगदान, राष्ट्रियता आदि।

अखिल भारतीय महिला परिषद की सामाजिक और राजनीतिक गतिविधियों का ऐतिहासिक अध्ययन

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विश्वविद्यालय, आगरा

सार संक्षेप

जब हम प्रगति की बात करते हैं तो सबसे प्रथम हम महिलाओं को प्रगति की ओर ध्यान केन्द्रित करते हैं। प्राचीन काल के समय से लेकर आधुनिक समय तक महिलाओं की स्थितियों में परिवर्तन आते रहे हैं और महिलाओं की स्थिति में समय-समय पर सुधार करने के लिए कई विशेष व्यक्ति और संगठनों ने कई विशेष कार्य किए हैं। उन्हीं में से एक संगठन अखिल भारतीय महिला परिषद है जिसने महिलाओं की सामाजिक और राजनीतिक स्थितियों को सुधारने के लिए महत्वपूर्ण भूमिका निभाई। संगठन के सामाजिक और राजनीतिक पहल के माध्यम से महिलाओं के सशक्तिकरण के लिए प्रयास करने वाली एक शान्ति के रूप में उभरा। जब हम महिला सशक्तिकरण की बात करते हैं तो उनसे जुड़े सामाजिक, आर्थिक, राजनीतिक और शैक्षिक आदि सभी पक्षों की ओर ध्यान केन्द्रित करते हैं ऐसे ही अखिल भारतीय महिला परिषद ने समाज में महिलाओं की स्थिति पुरुषों की अपेक्षा कमतर देखी तो हमारे देश की महान विभूतियाँ स्वयं को रोक न सकी। 20वीं सदी के प्रारम्भ में महिलाओं की स्थिति में तेजी से परिवर्तन होने लगे। इसी परिवर्तन के साथ महिला संगठनों की आवश्यकता का अहसास होने लगा। अखिल भारतीय महिला परिषद की स्थापना 1926 में की थी। इस संगठन के सामाजिक और राजनीतिक लक्ष्य इस प्रकार थे – महिलाओं की उत्तराधिकार सम्बन्धी कानून की ओर अधिक सुधार, महिला श्रमिकों की स्थिति में सुधार एवं काम करने को उचित सुविधायें दिलवाना, महिला को राजनीति में स्थान दिलाना। इन्होंने महिलाओं के उद्धार हेतु जो कार्य किये उससे महिलाओं की स्थिति में अत्यधिक सुधार हुये तथा विभिन्न अधिकार भी प्राप्त हुए।

की बर्द—सशक्तीकरण, सामाजिक, राजनीतिक, संगठन, वर्चस्व, विभूतियाँ।

“19वीं शताब्दी में आगरा में ब्रिटिश शासन : एक ऐतिहासिक विश्लेषण”

पिंकी प्रजापति

रिसर्च स्कोलर (इतिहास)

डॉ० भीमराव आंबेडकर विश्वविद्यालय, आगरा

ईमेल—चपदालच71663 / हउपसण्ववउ

शोध सार

यह शोध अध्ययन ब्रिटिश शासन की उन समस्त राजनीतिक, आर्थिक एवं शैक्षणिक नीतियों व परिवर्तनों से सम्बंधित है जिन्होंने आगरा को एक आधुनिक शहर के रूप में परिवर्तित किया। जिन परिस्थितियों में आगरा के आधुनिक स्वरूप का निर्माण हुआ, उनमें 19वीं शताब्दी के इतिहास की महत्वपूर्ण भूमिका है। इस काल अवधि के दौरान ही आगरा में ब्रिटिश शासन की स्थापना हुई। ब्रिटिश शासन की गतिविधियों का महत्वपूर्ण केन्द्र होने के कारण अंग्रेजों द्वारा आगरा जिले की बुनियादी प्रशासनिक संरचना निर्मित की गयी, जो कि काफी हद तक आज भी अपरिवर्तित बनी हुयी है। आगरा में विभिन्न ब्रिटिश शासकों के शासन अवधि के दौरान न केवल प्रशासनिक भवनों, शैक्षणिक संस्थानों, व्यापार वाणिज्यिक केन्द्रों, उद्योगों, यातायात, परिवहन साधनों इत्यादि का निर्माण किया गया बल्कि मुगल मराठा काल के कई स्थान भी पुनर्निर्मित किए गए। इसके साथ ही अनेक आवासीय संरचनाएँ, होटल, सिनेमा, प्ले ग्राउण्ड, कब्रिस्तान, रेलवे स्टेशन, सड़कें, पुल, पार्क, पोस्ट-ऑफिस, लाइब्रेरी इत्यादि भी स्थापित किए गए। विभिन्न सामाजिक तत्वों एवं भौतिक स्थानों के विकास स्वरूप आगरा तेजी से समृद्ध शहर के रूप में परिवर्तित होने लगा है। ब्रिटिश शासन के अधीन आगरा में पश्चिमी मानकों पर आधारित आधुनिक शिक्षा प्रणाली का भी विकास हुआ। ब्रिटिश शासन से पूर्व आगरा में शिक्षा की स्थिति अनश्चित एवं अव्यवस्थित थी। ईसाई मिशनरियों के व्यक्तिगत तथा संगठनों के द्वारा कई शैक्षिक संस्थानों, हॉस्टलों एवं पुस्तकालयों की नींव रखी गयी जिसका प्रभाव आज भी आगरा की शिक्षा व्यवस्था पर स्पष्ट रूप से देखा जा सकता है।

किसी क्षेत्र का प्रशासन, आर्थिक स्थिति एवं शैक्षिक स्तर उस क्षेत्र के लोगों की प्रगति और कल्याण के लिए उत्तरदायी होता है, इसीलिए यह एक ऐसा विषय है जिस पर पहले की अपेक्षा अधिक विस्तार से अध्ययन किया गया है।

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उच्च माध्यमिक स्तर पर अध्ययनरत विद्यार्थियों की सृजनात्मकता पर संस्थागत वातावरण का प्रभाव

अंकित कुमार

शोधछात्र, इंस्टीट्यूट ऑफ एजुकेशन, बुंदेलखण्ड विश्वविद्यालय, झांसी

दापजणकनइमल42 / हउंपसणबवउ

सारांश

एक छात्र के लिए उसका वातावरण शिक्षा का महत्वपूर्ण घटक है। प्रत्येक बालक का पालन-पोषण एवम् विकास में उसके वातावरण का महत्वपूर्ण योगदान होता है। उपयुक्त वातावरण नहीं मिलने पर उनके प्रतिभाएं अविकसित रह जाती हैं। अतः बालक को जैसा भौतिक वातावरण मिलता है वैसी ही जन्मजात शक्तियां विकसित होती हैं। शिक्षा का फल है बालक की अन्तर्निहित शक्तियों का अधिकतम विकास। यह अध्ययन उच्च माध्यमिक स्तर पर अध्ययनरत विद्यार्थियों की सृजनात्मकता पर संस्थागत वातावरण के प्रभाव का अध्ययन है। लैंगिक आधार पर विविध उद्देश्यों का निर्माण कर यह अध्ययन किया गया है। अध्ययन की प्रकृति को दृष्टिगत रखते हुए अध्ययन प्रक्रिया को एक्स-फैक्टो अनुसंधान विधि से सम्पन्न किया गया है। प्रस्तुत शोध में प्रयागराज जनपद के उच्च माध्यमिक स्तरीय विद्यालयों के विद्यार्थियों को जनसंख्या माना गया है। न्यादर्श के चुनाव हेतु यादृच्छिक न्यादर्शन विधि प्रयोग की गयी है जिसमें प्रयागराज मण्डल में स्थित उच्च माध्यमिक स्तर के विद्यालयों में अध्ययनरत 300 छात्र-छात्राएं चयनित किये गये हैं। अध्ययन में विद्यार्थियों के संस्थागत वातावरण को मापने के लिए संज्योत पेठ, सुषमा चौधरी एवं उपेन्द्र धर द्वारा निर्मित आर्गेनाइज़ेशनल क्लाइमेट स्केल (बै) तथा विद्यार्थियों की सृजनात्मकता के मापन के लिए डॉ० बी०के० पासी द्वारा निर्मित "पासी टेस्ट ऑफ क्रियेटिविटी" का प्रयोग किया गया है। आंकड़ों के विश्लेषण हेतु एननोवा (एफ-अनुपात) सांख्यिकीय विधियां प्रयोग की गयी हैं।

की वर्ड – उच्च माध्यमिक स्तर, अंग्रेजी माध्यम, सृजनात्मकता, संस्थागत वातावरण आदि

भारतीय राष्ट्रवाद के कलात्मक पहलुओं का अध्ययन: एक ऐतिहासिक विवेचन

सतेन्द्र कुमार

शोध छात्र, इतिहास

इतिहास एवं संस्कृति विभाग

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शोध सारांश

18वीं शताब्दी में भारत में राजनीतिक पतन के साथ सांस्कृतिक विरासत में भी निष्क्रियता छा गई। राजा रवि वर्मा, अवनींद्रनाथ टैगोर, नंदलाल बोस, शारदा चरण उकील जैसे प्रसिद्ध कलाकारों ने अपनी कलाकृतियों के माध्यम से सांस्कृतिक तत्वों को विषयवस्तु बनाकर भारतीय कला की समृद्ध विरासत को उजागर किया। जिससे भारतीयों के मन में अपनी खोई हुई सांस्कृतिक पहचान के प्रति जन जागृति का भाव उत्पन्न हुआ। समाज का लगभग प्रत्येक तबका राष्ट्रीय आंदोलन के दौर में अपनी सांस्कृतिक विरासत को अभिव्यक्त करता रहा। जिससे राष्ट्रवादी विचारधारा और प्रबल हुई। भारतीय सांस्कृतिक अतीत के अनेक आयाम हैं जिनमें से एक को शोधार्थी ने अपने शोध पत्र का विषय बनाया है। अतः शोध पत्र में राष्ट्रवाद के कलात्मक पहलुओं पर दृष्टिपात किया गया है। जिसके अंतर्गत औपनिवेशिक काल में चित्रकला, स्थापत्य, संगीत एवं नृत्य इत्यादि कलाओं का विवरण समीचीन होगा।

मूल शब्द: राष्ट्रवाद, स्थापत्य, चित्रकला, संगीत, नृत्य

स्वतंत्रता के बाद भारतीय कला का बदलता परिवेश

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सारांश

भारतीय तथा पश्चिमी उदाहरणों से बात स्पष्ट होती है। कि कलाकार की सीमा को सिर्फ रूपाकार के स्तर पर नहीं, बल्कि कल्पना के स्तर पर भी बताती है। कलाकार अपनी चित्रात्मक कल्पना की सीमा में वैज्ञानिक तथा धार्मिक अनोखापन तथा आलौकिकता, हास्य तथा चमत्कार को एक कर देते हैं। भारतीय कल्पना में भी काफी जटिलता है। इस बात को शताब्दियों पुरानी बहुरूपक कला तथा भारतीय सौंदर्यशास्त्र की सैद्धांतिक व्याख्या में नये प्रयोगधर्मों के साथ सिद्ध करेगी। यह सभी प्रश्न के आधार पर मेरा शोध पत्र एक विचारणीय प्रश्न खड़ा कर रहा है।

बीज शब्द

इंस्टालेशन, छापाकला, वीडियो आर्ट, अतिथार्थवादी, त्रिआयामी।

बस्ती महानगरपालिका की नगरीय आकारिकी का प्रतीक अध्ययन

भोध सारां T

सजंय कुमार,असि0 प्रोफेसर,भूगोल विभाग
विहर्ष किसान पी जी कालेज बस्ती
डा रोहित सिंह, असि0 प्रोफेसर,भूगोल विभाग
विहर्ष किसान पी जी कालेज बस्ती

नगरीय आकारिकी के अन्तर्गत नगर के भौतिक विन्यास और उसकी आंतरिक सरं चना का अध्ययन किया जाता है। भूगोल में आकारिकी शब्द का प्रयोग मानव अधिवासों के अध्ययन में किया गया। इस प्रकार नगरीय आकारिकी का संबंध मुख्यतः आंतरिक कार्यात्मक व्यवस्था एवं नगर के भौतिक स्वरूप से होता है, जिसमें नगर का उद्भव, विकास, वर्तमान स्वरूप, वर्तमान कार्य, विभिन्न अन्तर्सम्बन्ध तथा उन्हें प्रभावित करने वाले कारकों को भी शामिल किया जाता है।

नगरीय आकारिकी नगरीय सीमा के अंदर सरं रचनात्मक विशेषताओं और प्रतिरूपों का विवेचन किया जाता है जो नगर विशेष के भूमि उपयोग तथा उसके कार्यात्मक मार्ग के माध्यम से नगर एक विशिष्ट प्रकार का आकार, आकृति एवं स्वरूप प्राप्त करते हैं। वस्तुतः नगर की भूमि उपयोग प्रतिरूप के अध्ययन के द्वारा नगर के भौतिक, आर्थिक एवं जनांकिकीय संघटक की विशेषताओं का विश्लेषण किया जाता है।

नगरीय विकास के साथ भूमि उपयोग प्रतिरूप में होने वाले परिवर्तन के आधार पर नगरीय आकारिकी के अन्तर्गत नगर के आर्थिक एवं जनांकिकीय विशेषताओं का भी वर्णन किया जाता है चूंकि नगरीय विकास के कारण नगर के क्षेत्रीय एवं उर्ध्वाधर प्रसार के द्वारा नगरीय विन्यास में परिवर्तन के साथ आर्थिक एवं जनांकिकीय विशेषताएं भी परिवर्तित होती हैं इसलिए नगरीय आकारिकी का स्थानिक एवं कालिक परिप्रेक्ष्य में विश्लेषण किया गया है।

प्रस्तुत शोध प्रपत्र का मूल उद्देश्य बस्ती महानगरपालिका के स्वरूप का ऐतिहासिक विकास तथा वर्तमान कार्यात्मक स्वरूप के विवेचन के साथ-2 नगर की समस्याओं को विवेचित करते हुए इसके विकास प्रवृत्ति के लिए योजना प्रस्तुत करना है। यह शोध प्रपत्र द्वितीयक आकड़ों पर आधारित है। बस्ती महानगरपालिका के भूमि उपयोग से संबंधित आकड़ों को बस्ती महायोजना के विभिन्न वर्षों के प्रतिवेदन से प्राप्त किया गया है। अध्ययन में आनुभविक विश्लेषणात्मक तथा मानचित्र का प्रयोग किया गया है।

भारत की विकास यात्रा में सत्तारूढ़ राजनैतिक दलों की भूमिका

शशि भूषण सिंह
पीएचडी शोधार्थी
इतिहास एवं संस्कृति विभाग
डॉ भीम राव अम्बेडकर विश्व विद्यालय आगरा

सार संक्षेप

किसी देश का सतत विकास उस देश की निष्पक्ष शासन प्रणाली पर निर्भर करता है। विचारों की अभिव्यक्ति से लेकर दैनिक प्रगति केवल तभी सम्भव है जब नागरिकों को ऐसा करने के स्वतंत्र अवसर हों और नागरिकों को उत्तम जीवन प्रदान करने का उत्तरदायित्व इस बात पर भी निर्भर करता कि देश का शासन करने वाला राजनैतिक दल किस विचार धारा एवं कार्यक्रम पर आधारित है। कांग्रेस हमेशा शासन में नहीं रही। ए समय समय पर अन्य राजनैतिक दल भी सत्ता में रहे अतः प्रस्तुत शोध पत्र के माध्यम से अब तक रही सरकारों द्वारा देश हित हेतु किए गए कार्यों का ऐतिहासिक अध्ययन इस आशय से किया जाएगा ताकि विभिन्न दलों की सरकारों की नीतियां और उनसे हुए लाभ से जन समान्य जागरुक हो सके तथा देश हित की सोच रखने वाले दलों के चयन के समय अपने पूर्व ऐतिहासिक ज्ञान का उपयोग कर सकें।

ज्ञमल वृत्तके

राजनैतिक दल, विकास, योगदान, सरकार, योजना

प्राचीन भारत में धर्म के क्षेत्र में महिलाओं की भूमिका

पूजा पोरस

पीएचडी शोधार्थी

इतिहास एवं संस्कृति विभाग

डॉ० भीमराव आंबेडकर विश्वविद्यालय, आगरा।

सारांश

प्राचीन भारत में समानता के आदर्श वातावरण में स्त्रियों के लिए ज्ञानार्जन और आध्यात्मिक उत्थान सम्भव हुआ। हिन्दू समाज में सन्यास का मार्ग अपनाकर सिद्धि प्राप्त करने वालों में स्त्रियों और पुरुषों का अनुपात लगभग बराबर रहा। हिन्दुओं के दाम्पत्य जीवन के आदर्शवादी प्रतिमानों के कारण ही ऐसा सम्भव हुआ। देश की आध्यात्मिक परम्परा के मानदण्ड जन-मानस में इतने गहरी पैठ बना चुके थे कि यहां दाम्पत्य और गृहस्थ जीवन को कभी आत्म-तृप्ति अथवा भोग का साधन नहीं माना गया, अपितु उसे आध्यात्मिक अभ्युदय का ही एक सोपान समझा गया। विवाह की श्रृंगारिक और औपन्यासिक व्याख्या हिन्दू धर्म को कभी मान्य नहीं हुई। पति-पत्नी अध्यात्म-पथ के सहयात्री समझे गये हैं और उन्हें मोक्ष-प्राप्ति के लिए एक दूसरे का अनुपूरक माना गया है। यह विधान रहा है कि दाम्पत्य जीवन भोग-विलास के लिए नहीं, संयम और अनुशासन के वातावरण में सम्पन्न हो। परिवारों और ग्राम-समुदायों में पले हुए सभी व्यक्तियों को ब्रह्म-निष्ठा के संस्कार मिले क्योंकि उन्होंने बचपन से यह देखा कि हिन्दू समाज में छोटे-बड़े सभी कृत्यों को आध्यात्मिक दिशा देने का आग्रह है। अतः आश्चर्य नहीं कि इस विशाल और प्राचीन देश में श्रसंख्य ऐसी महिलाएं हुईं जो आध्यात्मिक विकास के अन्तिम सोपान तक पहुंच

भारतीय स्वतंत्रता आंदोलन में अरुणाआसफअली का योगदान

चित्राचौधरी

डॉ. भोजवतलद्व

इतिहास एवं संस्कृति विभाग

डॉ भीमराव अंबेडकर विश्वविद्यालय आगरा

1857 की क्रांति के बाद हिंदुस्तान की धरती पर हो रहे परिवर्तनों ने जहाँ एक ओर नवजागरण की जमीन तैयार की वहीं विभिन्न सुधार आंदोलनों और आधुनिक मूल्यों में रूढ़िवादीमूल्य टूट रहे थे। स्त्रियों की दुनिया चूल्हे चौके से बाहर आ रही थी इतिहास साक्षी है एक कट्टर हिंदू समाज में इतने बड़े पैमाने पर महिलाएं सड़कों पर नहीं उतरी थीं। जिन महिलाओं ने आजादी की लड़ाई को अपने साहस से धार दी उनका जिक्र यहाँ लाजमी है उनमें से एक महिला थीं। **अरुणाआसफअली** हरियाणा के एक रूढ़िवादी बंगाली परिवार से आने वाली अरुणा आसफ अली ने परिवार और स्त्रीत्व के तमाम बंधनों को अस्वीकार करते हुए जंग.ए.आजादी को अपने कर्मभूमि के रूप में स्वीकार किया। 1930 के सत्याग्रह से उनकी राजनीतिक संघर्ष की शुरुआत हुई अंग्रेज हुकूमत ने 1 साल के लिए जेल में कैद कर दिया। बाद में गाँधी इरविन समझौते के बाद जब सत्याग्रह के कैदियों को रिहा किया जा रहा था। तब उन्हें रिहा नहीं किया गया ऐतिहासिक भारत छोड़ो आंदोलन के दौरान 9 अगस्त 1942 को अरुणा आसफ अली ने ग्वालिया टैंक मैदान में राष्ट्रीय झंडा फहराकर आंदोलन को अगुवाई की। वह प्रबल राष्ट्रवादी और आंदोलन कर्मी थी उन्होंने लंबे समय तक भूमिगत रहकर काम किया।

अठारहवीं शताब्दी का ऐतिहासिक परिप्रेक्ष्य भारत के सन्दर्भ में

अखिलेश सिंह निर्मल

परासनातक इतिहास प्रथम वर्ष

सारांश

भारतीय इतिहास में अठारहवीं सदी की प्रासंगिकता दो महत्वपूर्ण घटनाक्रमों, मुगल साम्राज्य के पतन और भारत में ब्रिटिश साम्राज्य के विस्तार से चिह्नित होती है। इन दो घटनाओं ने भारत के सामाजिक आर्थिक और राजनीतिक ढाँचे को बदल दिया। विभिन्न इतिहासकारों ने सदी के दो चरणों का अध्ययन किया है अलग अलग विषयों पर चर्चा की है।

अठारहवीं सदी के भारत पर किये गए अधिकांश अध्ययन उस गिरावट और गिरावट पर ध्यान केंद्रित करते हैं जो कथित तौर पर जीवन के विभिन्न क्षेत्रों सामाजिक राजनीतिक धार्मिक या सांस्कृतिक में व्याप्त थी यह विचार कि अठारहवीं शताब्दी भारत एक अंधकार युग था कई यूरोपीय इतिहासकारों हेनरी बेवरिज जेम्स मिल और मार्श मैन ने अपने लेखन द्वारा प्रकाश डाला है।

इस अवधि के पहले और विस्तृत इतिहास लिखने वाले विलियम इरविन और जदुनाथ सरकार ने समराठो और उनके अभिजात्य वर्ग के चरित्र में गिरावट को उनकी गलत नीतियों को जिम्मेदार ठहराया जदुनाथ सरकार के अनुसार औरंगजेब की रूतिवादी धार्मिक नीति गैर इस्लामिक प्रथाओं को हटाना मंदिरों को नष्ट करना हिन्दुओं पर भेदभावपूर्ण कर लगाना और दक्कन के लंबे समय तक चलने वाले अभियान मुगल साम्राज्य के पतन के लिए जिम्मेदार थे।

जैसा कि सरकार ने कानून और व्यवस्था के सन्दर्भ में इस अवधि के विकास की जाँच कि ए उन्होंने औरंगजेब को कट्टर अपराधी माना। वह बाद के मुगलों के तहत राजाओं और अमीरों के व्यक्तिगत पतन और प्रशासन के अक्षम कामकाज के परिणामशरुप मुगल साम्राज्य के पतन की व्याख्या करता है

रजिया सुल्तान का दिल्ली सल्तनत की सत्ता में योगदान

सपना

ड। प्रियेजवतलद्व

इतिहास एवं संस्कृति विभाग

डॉ०भीमराव अंबेडकर विश्वविद्यालय आगरा

सारांश

रजिया सुल्ताना का जन्म 1205 ईस्वी में हुआ था। वह न केवल हिंदुस्तान बल्कि दक्षिण भारत की सबसे पहली और महान महिला शासक थी। सुल्तान इल्तुतमिश ने अपनी बेटी को बड़े लाड़ प्यार से पाला था। बचपन से ही रजिया कुशल योद्धा, उत्कृष्ट घुड़सवार, शानदार तलवारबाज, रणनीतिकार, चतुर, वीर और योग्य नौकरशाह थी। रजिया का शासन प्रबंध, उसकी वीरता व युद्ध कौशल इतना प्रभावी था कि आज भी उसके किस्से अमर हैं। ईस्वी सन 1236 से 1240 के बीच रजिया सुल्तान हिन्दुस्तान में दिल्ली के तख्त की ताज रही। इन चार सालों में ही उसने अपनी वीरता और बल से इतिहास में अपना उच्च स्थान अंकित कर दिया। एक महिला के तौर पर उसका सुल्तान होना इसलिए भी मायने रखता है कि वह हिंदुस्तान की पहली और आखिरी महिला सुल्तान रही। महिला होने के कारण ही उसे सुल्तान के स्थान पर सुल्ताना पुकारा गया था। लेकिन यह सुल्ताना किसी भी मामले में हिंदुस्तान के सुल्तानों से कम नहीं थी। रजिया न केवल मुगल शासन में बल्कि किसी भी तरह की व्यवस्था में हिंदुस्तान पर शासन करने वाली एकमात्र महिला है। हालांकि इतिहास के पन्नों में कुछ और ऐसी महिलाओं का जिक्र मिलता है जिन्होंने अपनी रियासतों की गद्दी को संभाला। लेकिन पुरुष प्रधान समाज और इतिहास के कलमकारों ने उनका नाम कहीं ढक-छुपा दिया। या फिर उन्हें किसी राजा या सुल्तान की पत्नी के तौर पर ही देखा गया। लेकिन रजिया सुल्ताना ने अपने दम पर यह उपाधि कमाई, सुल्ताना की उपाधि। रजिया के दक्ष प्रशासकीय व्यवहार और शासकीय गुणों के कारण उसके पिता सुल्तान इल्तुतमिश का विश्वास रजिया पर काफी हद तक बढ़ गया। पिता के शासनकाल के दौरान और अपने शासन के चार साल में उसने कूओं, बावड़ियों, सड़कों, पुस्तकालयों, अनुसंधान केंद्रों और विद्यालयों का निर्माण कराया। उसने दर्शन, विज्ञान, साहित्य और खगोल विज्ञान के क्षेत्र भी उल्लेखनीय योगदान दिया।

मुख्यशब्द रू. सुल्ताना ए उपाधि ए कलमकारों

नेता जी सुभाष चंद्र बोस की ऐतिहासिक विवेचन

फरीन उद्दीन

ड। ःभेजवतलद

इतिहास एवं संस्कृति विभाग

डॉर भीमराव अंबेडकर विश्वविद्यालय

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आधुनिक युग में स्वतंत्रता प्राप्ति के संघर्ष में नेता जी सुभाष चंद्र बोस का विशिष्ट स्थान रहा है भारत को आजादी दिलाने में नेता जी की एक प्रेरणा स्रोत थी कियोकि उनके विचारों से भारतीय स्वतंत्रता आंदोल में एक नया सपना शुरू हुआ था जिसमे भारत पर अपना सब निछवार कर दिया

सुभाष चंद्र बोस द्वारा लिखित प्रमुख द इंडियन स्माल तथा इंडियन प्रिमिल्स में उन्होंने स्वातंत्रा प्राप्ति तथा संघर्ष में उनके राष्ट्रीय अभियान तथा राष्ट्रीय संस्थानों का निर्माण तथा गठन हुआ था जिसमे उन्होंने स्वातंत्रा प्राप्ति करने के जस्बातों तथा घटनाओ की पूर्ण जानकारी उन्होंने इन पुस्तकों में दी है!

शोधार्थीपरिकल्पना है की नेता जी सुभाष चंद्र बोस ने भारत की स्वातंत्रा के लिए व्यापक संघर्ष में प्रमुख भूमिका निभायी जिसके द्वारा वह एक प्रजा तांत्रिक राष्ट्र का निर्माण चाहते थे!

मुख्य बिन्दु. स्वतंत्रता संग्रामए स्वतंत्रता प्राप्तिए परिकल्पनाए तथ्य तथा भाषण!

Insight into the Neuronal Changes in Goat Brain using Golgi-Cox Staining Approach

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ABSTRACT

The brain is one of the most complex and important organs, with approximately 100 billion neurons communicating through trillions of connections known as synapses. The soma (cell body), dendrites, axon, and axon terminals are the four functional units of a neuron. Each brain region plays a unique role in signal generation and communication with other nerve cells. Higher mammals can provide an important platform for the gyrencephalic brain, which is similar to humans (*Homo sapiens*) and has an exquisite cytoarchitecture. The goat (*Capra hircus*) brain has a specific grey to white matter ratio and the brain growth spurt in the prenatal period is similar to human brain. The colour and texture of the goat brain is alike that of human brain. Neuronal architecture changes are important in brain development, neuroplasticity, and ageing, and they are also linked to a variety of neurological diseases. The Golgi staining technique allows the examination of neuronal arborization and connections. The principle underlying Golgi staining is the metallic impregnation of neurons. Neuronal cell bodies, dendrites, and dendritic spines are visible after staining. In a neurohistological brain study, neurons are visualized in detail, including their cell bodies, dendritic arbours, dendritic spines, axons, and synapses. This method allows for precise and accurate analyses of morphological changes that occur as people age. The obtained results demonstrated that as biological age (juvenile to adult) progresses, the brain maintains neuronal changes, resulting in changes in neuronal number, axonal size, and dendrite branching. According to this study, the density, structure, and dendritic arborisation of neurons in the goat brain increase with age.

KEYWORDS

Cytoarchitecture, ageing, gyrencephalic, dendritic-arborization, synapses.

Identification and development of a multi-epitope subunit vaccine against scrub typhus (*orientia tsutsugamushi*): An immunoinformatic approach

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Abstract

The pathogen *Orientia tsutsugamushi*, which causes scrub typhus, is rapidly spreading throughout the tropics. As a measure to improve public health, the development of a vaccine for human use is essential. World Health Organization in 1999 listed Scrub typhus as one of the underdiagnosed and underreported febrile infection. This vector-borne zoonotic infection appears as eschar on the patient's skin. Immunoinformatic was employed to predict the multi-epitope subunit vaccine that will activate both B and T cells. The final vaccine includes lipoprotein LprA as an adjuvant at the N-terminus along with B-cell, HTL, and CTL binding epitopes to boost immunogenicity. Assessing the vaccine's physiochemistry demonstrates that it is both antigenic and non-allergic. The vaccine structure was developed, enhanced, confirmed, and disulfide-engineered to provide the best possible model. Using molecular docking, the interaction of the produced vaccine with toll-like receptor (TLR 2) was analyzed and the vaccine-receptor complex was stabilized by MD simulation. According to in silico cloning, *E. coli* can efficiently produce the recommended vaccine. Additionally, the efficacy of the *in silico* developed vaccine must be evaluated in an in vitro and in vivo experiment.

Keyword: *Orientia tsutsugamushi*, Immunoinformatic, Multi-epitope vaccine, Molecular docking, Molecular Dynamics, *In silico* cloning

डॉ. बी.आर. अम्बेडकर एक राष्ट्र-निर्माता एवं हिन्दू राष्ट्र पर उनके विचार

आकाश कुमार
परास्नातक इतिहास प्रथम वर्ष

सारांश

डॉ. बी.आर. अम्बेडकर की विचारधारा एक नई, जीवंत सामाजिक व्यवस्था के निर्माण, व्यक्ति की गरिमा से भरपूर और उसे अज्ञानता, शर्म और अपमान की बेड़ियों से मुक्त बनाने के लिए प्रासंगिक है। राष्ट्र-निर्माण की उनकी दृष्टि स्वतंत्रता, समानता और बंधुत्व पर आधारित है और उन्होंने वेदों की अचूकता को खारिज कर दिया और वर्ण व्यवस्था और वर्गीकृत असमानता को अस्वीकार कर दिया। मानवतावाद और तर्कसंगतता के प्रति उनका पालन और गरीबों और वंचितों के प्रति उनका लगाव यह दर्शाता है कि अम्बेडकर एक महान राष्ट्र निर्माता थे - उनके राष्ट्र-निर्माण में प्रेरक प्रेरणा कार्य और विचार का मिश्रण था। अपनी विभिन्न भूमिकाओं, कार्यों और अपने विपुल लेखन के माध्यम से उन्होंने सामाजिक परिवर्तन का नेतृत्व किया। अम्बेडकर को आधुनिक भारत के इतिहास में ज्ञानोदय और आधुनिकता के महान भविष्यवक्ताओं में से एक कहा जा सकता है। अम्बेडकर हिंदू राष्ट्र को भारी खतरा क्यों मानते थे

Muslim Politics, All India Muslim Student Federation and the making of Pakistan

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Abstract

India's Independence is unique in its own sense as it comes with an added burden of partition dividing it into two states- The Republic of India and Islamic Republic of Pakistan. Since then there's a continuous debate in literary and academic circles or even outside of it that what had led to India's Partition? All India Muslim students' federation is the pioneering body which took great pains in propagating the idea of Pakistan through the length and breadth of the country This paper tries to answer this pertinent question through the lens of Muslim and Muslim student politics. .

Keywords: Nation, Nationalism, Partition, Politics, AIMSF, Lahore Resolution.

Sufism: Single point solution to Global problems

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Abstract

The spiritual philosophy whose genesis lies somewhere in Islam is the light of hope to today's world problems. Today the world is witnessing rise in islamic fundamentalism due to misinterpretation of Islam, it is only and only Sufism which could counter it and could be an strong alternative as an ideology. In the field of environment, Sufism comes up with the concept of environmental spiritualism. It says that polluting environment means going away from the god whom you worship. Today when the world is divided into 'Nuclear Haves' and Nuclear Haves Not', the third world nations are having nuclear inequality and when this world is under constant threat of nuclear destruction, it could be tawassuf which could promote universal peace by alienating both personal and group violence, thus could also be a remedy to contain ethnic conflicts across the globe. The present paper is an attempt to highlight the importance of sufism and to use it as a remedy to global problems which has brought this world and human civilization on the brink of destruction.

History as Science

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ABSTRACT

History is certainly a science. But it is not an exact science. Its conclusions are unlike the conclusions of mathematics and logic. The conclusions of mathematics and logic are perfect and exact. And, hence, history being a human science, is deprived of exact conclusions. This does not mean that attempt has not been made to think history as an exact science. Russell thinks that in time there would be, “ a mathematics of human behavior as precise as the mathematics of machines”. Russell is a mathematician and a philosopher. For him any subject is science if it allows the application of mathematics. So a human science (Social- science) could be called a science when it becomes as precise and exact as mathematics. But for a subject to be called a science it is not essential that it should give perfect and exact conclusions. The forecast made by the meteorologists is sometimes proved to be totally false, but even then meteorology is accepted as science. Meteorological predictions are not superstitious beliefs.

Utilizing Bioinformatics Approaches to Study Serotonergic Psychedelics and DMT: Implications for Cognition

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ABSTRACT

Serotonergic psychedelics are a class of psychoactive substances that primarily exert their effects by acting on the serotonin (5-HT) system in the brain, particularly on serotonin 5-HT_{2A} receptors. The resurgence of interest in serotonergic psychedelics, particularly Dimethyltryptamine (DMT), offers novel insights into neuroscientific research, cognitive processes and human consciousness. The presence of DMT as a naturally occurring endogenous substance, particularly in the pineal gland, suggests an intrinsic role in modulating neural processes. However limitations of detection and identification due to trace amounts and rapid metabolism persist. Therefore to study DMT as a molecule, bioinformatics tools will help draw comparisons with similar serotonergic psychedelics and thereby infer the molecular and cognitive correlates. This study aims to identify genes and signaling pathways that are significantly modulated upon exposure to these compounds. The bioinformatics analysis is conducted using publicly accessible datasets from NCBI, platforms such as Galaxy, R and Bioconductor, also online databases like KEGG and Cytoscape for pathway analysis and protein-protein interaction networks and mirTarget2 for microRNA network analysis. Furthermore, we integrated findings from bioinformatics analyses with current cognitive neuroscience literature on psychedelics. This interdisciplinary approach provides a more comprehensive understanding of how changes at the molecular level might correlate with alterations in cognitive processes observed in psychedelic states. Hence, this study will not only showcase preliminary findings and hypotheses but also demonstrate how bioinformatics can be a powerful tool in psychedelic research. These *insilico* results provide a strong support for common genes and interaction pathways among the serotonergic psychedelics and DMT. This may pave way for further understanding of DMT as a consciousness and cognition probe and potential therapeutic applications of these psychedelics in cognitive disorders.

Keywords: Serotonergic Psychedelics, Dimethyltryptamine, Bioinformatics, Cognition, Neurobiology.

Antioxidant, antiaging, antistress, and ROS scavenging activity of hesperidin in *Caenorhabditis elegans*

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ABSTRACT

Since aging is the most important risk factor for various diseases, the discovery of a wide range of chemical modulators of aging in model organisms encourages new strategies for targeting age-associated diseases. Simple genetic manipulation leads to long-lived and healthy animals, so any compound with a similar effect would prove a boon to mankind. Hesperidin is a flavonoid from citrus species that has numerous biological properties, particularly antioxidant, anti-aging, and antistressor. In the present study, the effect of different pharmacological doses (100, 150, and 200 $\mu\text{M}/\text{mL}$) of hesperidin was used to determine their impact on life span, thermotolerance, and ROS scavenging activities in *C. elegans*. The results revealed that 100 $\mu\text{M}/\text{mL}$ of hesperidin significantly extended the life span of *C. elegans*. The compound also proved to be a strong free radical scavenger and increased resistance against thermal stress. It is also suggested that the protective and life span extending the action of the hesperidin is not only due to its antioxidant capacity but may also be mediated by modulation of some signaling pathways. Thus, in addition to all the known medicinal properties of hesperidin, it can increase stress tolerance and life span in *C. elegans*.

KEYWORDS

Aging, antioxidant, *Caenorhabditis elegans*, Flavonoid, Hesperidin, Lifespan, Oxidative stress.

Web spinning and non-web spinning spiders of semi-arid habitat- their conservation strategies and biotechnological perspectives

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ABSTRACT

In most ecosystems and in nature, spiders are common. Currently 50, 398 species belonging to 4280 genera and 132 families were recorded from all over the world out of which 1686 species of spiders belonging 60 families and 438 genera were updated taxonomically from the Indian region and 52 species are recorded till date in semi-arid habitat of Agra region. There are two types of spiders; web-building spiders and non-web building spiders, which are also called hunting, ground or running spiders. The history of spider webs dates back over 100 million years. There are currently five different kinds of spider webs: funnel, cobweb, sheet, orb, and tubular. Spiders despite being a group of invertebrates that inhabit habitats, have been relatively overlooked by scientists for a long time. However they play a role, in the agro ecosystem. Agra, located in the southwest of Uttar Pradesh State is part of the Gangetic plains, in North India. Its geographical coordinates are between 26°44'N and 27°55'S latitude and 77°26'W and 78°32'E longitude. The climate, in Agra is known for its temperature fluctuations throughout the day high saturation deficit and low rainfall. On average Agra receives 760.4 mm of precipitation with temperatures ranging from 23°C to 65°C. In the survey conducted in this habitat two spider families, Salticidae (non-web spinning) and Araneidae (web spinning) were identified as the prevalent. In contrast, the following spider families are found in the semi-arid habitat: Hersilidae (web spinning), Thomisidae (non-web spinning) and Sparassidae (non-web spinning), while the other spider families are Pholsidae (web spinning) and Lycosidae, Oxyopidae, Gnaphosidae, Tetragnathidae, Corinnidae all are non-web spinning . This paper also delves into the role of these web and non-web spinning spider species, in the ecosystem their contribution to pest control and explores their web silk potential for biotechnology and their economic significance, for conservation purposes.

KEYWORDS: Semi-arid habitat, Web- Spinning, Non-Web Spinning, Araneae. Silk protein.

Elucidating the structural and functional prophecy of the Rv2326c gene, an ABC transporter of *Mycobacterium tuberculosis* H37Rv through computational approach

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Abstract

Tuberculosis is a fatal disease caused by *Mycobacterium tuberculosis*. *M. tuberculosis* becoming drug-resistant day by day, necessitating to know the mechanism behind the drug resistance and how to overcome this deadly malady. Drug resistance and reduced drug bioavailability are caused by a class of transporter proteins called the ATP-binding cassette (ABC) transporters, which pump a range of medicines out of cells at the price of ATP hydrolysis. By using computational approaches, we tried to elaborate the probable function of the Rv2326c gene of *M. tuberculosis*, perhaps involved in drug resistance mechanism. The presence of the signature motif of ABC transporters (LSGGELQRLALAAAL and LSGGQMRVVLGALL) and ATP binding motif (GXXXXGKT and GXXXXGKS) in the protein sequence signifying its importance in the ATP binding and transportation of molecules. Further, this manuscript elaborated about tertiary structure and validation, functional category, localization, phosphorylation site prediction, mutational analysis of conserved motifs. Ligand docking study shows the highest affinity with ATP than GTP justified its function as an ATP binding protein. The Rv2326c protein is present in the inner membrane and working as an ATP binding protein and might be playing a dynamic role in transportation. In this study, we found that Rv2326c protein might be working as an ABC transporter by which the drugs and other molecules are imported or exported into the bacterium. As a result, the current study provides a means to better understand its normal functioning and basic biology, which can help in the development of novel therapeutic targeting approaches for Rv2326c protein.

Biomedical Waste Management System in Hospitals - An Emerging issue for environmental safety

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ABSTRACT

Biomedical wastes are becoming a global issue as well as one in India. These are created when people and animals are being sampled, tested, diagnosed, treated, immunized, operated on, and in research studies. Numerous types of biomedical wastes have been covered, along with the procedures for managing them. These procedures include sorting, storing in containers, labeling, handling, transporting, treating, disposing of, and minimizing waste. Medical care is essential to our survival and well-being, but the waste that results from medical procedures poses a serious threat to both the natural world and human society. The community, healthcare professionals, and the environment are all directly impacted by the improper handling of waste produced in healthcare institutions. Worldwide healthcare hospitals and facilities produce a sizable volume of toxic and potentially infectious trash every day. Hospital biological waste should be treated and managed carefully before being disposed of, as improper disposal and exposure to it pose a major risk to the environment and public and animal health. Biomedical waste and the methods for managing it, including treatment and disposal, are vital. Additionally, it seeks to raise public knowledge and sensitization to the need of safeguarding the environment and public health on a worldwide scale.

Key words: Biomedical waste, Environment, Health effect

Exploring Gestational Diabetes Mellitus: Diagnosis Methods and Impact on Maternal and Offspring Health

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ABSTRACT

Gestational Diabetes Mellitus (GDM) represents a significant health concern during pregnancy, with potential consequences for both maternal and offspring health. This abstract summarizes key findings from an extensive exploration of GDM, focusing on diagnostic approaches and the impact it exerts on the health of both mothers and their offspring. The study delved into various diagnostic methods employed in clinical practice to identify GDM during pregnancy. It critically assessed the efficacy of traditional approaches, such as oral glucose tolerance tests and fasting blood glucose measurements, as well as emerging strategies like continuous glucose monitoring. The findings revealed the importance of early and accurate diagnosis in effectively managing GDM and mitigating associated risks. Furthermore, this research investigated the ramifications of GDM on maternal health. It elucidated the heightened risk of complications such as preeclampsia, cesarean section, and macrosomia among women with GDM. These findings underscore the imperative for close monitoring and timely intervention in pregnant women diagnosed with GDM to prevent adverse maternal outcomes. In addition to maternal health, this study examined the impact of GDM on the health of offspring. It elucidated the association between maternal hyperglycemia and neonatal complications, including macrosomia, hypoglycemia, and respiratory distress syndrome. Long-term consequences, such as an increased risk of childhood obesity and type 2 diabetes, were also explored, highlighting the need for comprehensive postnatal care and monitoring. In conclusion, this study highlights the critical need for early and precise GDM diagnosis to reduce maternal and offspring complications. A collaborative effort among obstetricians, endocrinologists, and pediatricians is vital for optimal care. Further research to enhance diagnostics and treatments is essential to enhance maternal and offspring health.

Keywords: Gestational diabetes, pregnancy, maternal health, offspring Health

Apoptosis and its Physiological View

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ABSTRACT

Apoptosis, a programmed cell death process, is vital for cellular biology, influencing development, tissue homeostasis, and the removal of damaged or unnecessary cells. The balance between cell proliferation (mitosis) and cell death is crucial for tissue and organ function. Apoptosis has diverse roles, including immune system regulation, response to DNA damage, cancer prevention, and neural development. Disruptions in apoptosis can lead to diseases- insufficient apoptosis may result in abnormal cell survival, contributing to conditions like cancer, while excessive apoptosis linked to degenerative disorders. Understanding apoptosis has therapeutic implications, with ongoing research exploring its role in conditions such as cancer, neurodegenerative diseases, and autoimmune disorders. Apoptosis, a two-stage process, involves initial biochemical attempts at cell repair. If unsuccessful, the cell enters the execution phase, undergoing structural changes leading to death. These alterations affect the nucleus, cell membrane, and intra-cytoplasmic organelles, with associated biochemical modifications. Two main apoptotic pathways, intrinsic and extrinsic, converge into a common execution pathway. Reactive oxygen species (ROS) and mitochondria are pivotal in apoptosis under physiological and pathological conditions. Caspases, essential for apoptosis initiation and execution, play roles in tumor development and autoimmune diseases if they fail. The Bcl-2 gene on chromosome 18, the first identified in tumor genesis, exhibits reduced expression for enhanced apoptotic responses to anticancer drugs. The Bcl-2 family, overexpressed in many cancers, shares BCL-2 homologous domains (BH1, BH2, BH3, and BH4). The p53 protein, termed the "guardian of the genome," acts as a tumor suppressor with crucial roles in genomic integrity, apoptosis induction, glycolysis regulation, and cell differentiation. Mutations in the pro-apoptotic p53 gene and altered expression of Bcl-2 family proteins are linked to cancer. Activating the p53 pathway offers a potential therapeutic approach, inducing apoptosis for effective tumor treatment. Targeting the p53 gene specifically holds promise as a powerful therapeutic tool. Molecular-level understanding of apoptosis informs disease processes and influences therapeutic

strategies. Numerous synthetic and natural compounds have been identified for their efficacy in inducing apoptosis in target cells against certain diseases.

EFFECT OF FOOD SAFETY AND STANDARD AUTHORITY

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Abstract

The Food Safety and Standards Act (2006) constitutes a set of science-based standards governing food articles and their production, storage, distribution, sale, and import. Its primary objective is to ensure the availability of safe and wholesome food for human consumption. The Act also seeks to streamline the regulatory process by transitioning from a multi-departmental approach to a centralized authority. This led to the creation of the Food Safety and Standards Authority of India (FSSAI) headquartered in New Delhi. In instances where there is a reasonable suspicion of a food product posing a health risk, the Food Authority and the Commissioner of Food Safety are mandated to take appropriate steps to inform the public about the nature and extent of the risk. The Act does not apply to farmers, fishermen, farming operations, crops, livestock, or aquaculture. To enforce these regulations, the FSSAI has established penalties, including fines and imprisonment, for offenses related to food safety. The Act aims to raise awareness and has identified the need for training programs at the grassroots level. General information about the FSSAI should be incorporated into educational curricula to emphasize its importance to students. The ultimate goal of the FSSAI is to monitor every stage of food processing, from farm to consumer, and ensure the provision of pure, safe, and fresh food to consumers.

Oral Presentation: DNA Barcoding in Forensic Science

Sub theme: Forensic Science and Psychology

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ABSTRACT

The incredibility and accuracy with which DNA evidence identifies a biological specimen on site by using a varied range of markers and techniques is tremendous, the most reliable and latest being DNA Barcoding which offers a repository of unique codes for all the life forms on earth using the very stable COI gene from the mitochondrial genome which has gained an upper hand over nuclear genome because of its constant nature because of its maternal inheritance.

In the current research we endeavor to compare different methods and standardize DNA isolation and PCR amplification with the objective of sequencing of COI gene from samples collected through the unconventional non-invasive techniques that have multidisciplinary implications in fields such as wildlife forensics, biodiversity management and conservation and so on. Finally, taking a glance at its challenges and applications of the barcode obtained towards wildlife forensics including the identification of adulteration and cryptic species amidst others.

KEYWORDS: DNA Barcoding, Forensic Science, Non-invasive Sampling, Wildlife Forensics

PALLAVA'S CONTRIBUTIONS TO ART & CULTURE IN SOUTHERN INDIA: A HISTORICAL PERSPECTIVE

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ABSTRACT

The Pallava kings were great patrons of architecture & sculpture. The numerous splendid temples at Kanchi still bear eloquent testimony to their achievements in the domain of art. The wonderful Rathas or Seven Pagodas at Mamallapuram, each of which is cut out from a great rock boulder, are marvellous of human skill. The relief sculptures on the rocks at the same place are excellent. The importance of the Pallava art lies in the fact that it efforts the earliest examples of architecture and sculptures in the Southern India.

During the rule of the Pallavas there was considerable literally activity and Sanskrit enjoyed royal patronage Barring a few, all the Pallava inscriptions are in that language, and even in the later ones, where Tamil is used to the Prashasti portions are in Sanskrit are of a high order.

Kanchi, the capital, seems to have been a recognized Centre of learning and culture from quite early times. Here came the famous Buddhist dialectician, Dignaga, to satisfy his intellectual and spiritual thirst, and about the middle of the fourth century A.D. the Brahman Mayurasraman, is said to have completed his Vedic studies here.

Kanchi became a great Centre of learning in South India and its university helped in the progress of Aryan culture in the south while the city itself was accepted as one of the seven religious cities of the Hindus However, the Pallavas were tolerant ruler. They patronized, of course, shaivism and Bhagavatism but gave protection to Jainism and Buddhism as well.

Keywords:- Rathas, Mamallapuram, Kanchi, Diganga, Prashasti

EXPLORING THE IMPACT OF LAND COVER AND LAND USE ON MACROPHYTE DIVERSITY OF URPAD BEEL

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ABSTRACT

Wetlands are important ecosystems that offer a wide array of socioeconomic, hydrological, and ecological services. However, anthropogenic activities, notable changes in land use, and cover in their surroundings are placing growing pressure on them. This study examines the impact of land use and land cover on the diversity of macrophytes in Urpada Beel, an important wetland in the Goalpara district of Assam, India. It emphasizes the importance of these studies in developing successful wetland management plans and delivers persuasive results that are essential to maintaining and improving the health of wetland ecosystems. In order to evaluate the changes in the land cover and land use in the catchment area of Urpada Beel, we took a multidisciplinary approach that combines field surveys, remote sensing, and GIS tools. Wetland's richness of macrophytes was also studied at the same time by laying 281 quadrates randomly at the study site. The findings based on primary data showed a significant relationship between macrophyte diversity, land use patterns, and changes in land cover. It has been demonstrated that the macrophyte diversity of the wetland is significantly impacted by increased urbanization, agricultural expansion, and infrastructural development in the neighborhood. The results provide a solid foundation for evidence-based wetland management strategies that seek to mitigate the adverse effects of anthropogenic activities and promote the long-term conservation of these invaluable ecosystems. Preserving macrophyte diversity is not just a matter of ecological significance; it is the key to sustaining the myriad ecological services that wetlands provide to both nature and society.

Key Words: Wetland, Land Cover, Land Use, Macrophyte

Buddhist presence in Lucknow

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ABSTRACT

Lucknow plays a significant role when revival of Buddhism is concerned. It is here Bodhanand Mahasthavir built two Buddhist viharas. The great scholar Rahul Sankrityayan had expressed his gratitude in his book *Jinka Main Kritagya* to Bhadant Bodhanand. He wrote, "I had heard the name of Buddha earlier too, but the person who opened the doors of knowledge about Buddhism to me was Sthivir Bodhanand. He visited Lucknow in October-November in 1916 and visited Bodhanand at the Vihara in Latouche Road. It was Bodhanand who had finally convinced Dr Ambedkar to adopt Buddhism. Ambedkar wanted to take Diksha from Bhadant Bodhanand but could not do so as by then, the sage was no more. Bhante Pragyanand who was a disciple of Bodhanand stayed here, the monk who had witnessed the conversion movement of Dr Ambedkar at Nagpur, Dr Ambedkar who is said to have been instrumental in reviving Buddhism has his ashes placed in Ambedkar Mahasabha. It is here, that the former CM, Mayawati built many statues of Buddha at various prime places not only that she built a park in memory of Dr Ambedkar. In Ambedkar Park, statues of elephants are built, it may be pointed out that elephants play an important role in Buddha's life and are therefore greatly revered in Buddhism. Therefore, the paper is an attempt to trace the presence of Buddhism in Lucknow the capital of Uttar Pradesh.

Keywords: Buddhism, Disciple, Statues, Conversion, Viharas

MIXED MICELLAR SYSTEM OF PLURONIC BLOCK COPOLYMERS AND ANIONIC SURFACTANTS

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ABSTARCT

The Present Study Concentrate on the mixed micelle System Of Pluronic Block Co-Polymers anionic surfactant in aqueous media . The Cloud Point (CP) Of Pluronic Block Co- polymer Solution increase in the presence of sodium decylbenzenesulphonete NaDeBS the CP increase is dependent on the hydrophobicity of the Pluronic Block Co-polymer and its concentration . these data support the aggregation of NaDeBS taking place at concentration much below its critical micelle concentration (CMC) . the Pluronic Block Co- polymer NaDeBS mixes system have enhanced surface activity . these data reveal that the Pluronic Block Co- polymer –NaDeBS complex (or mixed micelles) possesses polyelectrolyte-like nature. The strength of the NaDeBS –copolymer interaction seems in the order Pluronic P 85 (EO25 PO40 EO25, MW4600) Pluronic L 61 (EO2-PO30 - PO2, MW= 1450) > Pluronic F127 (EO100-PO66-EO100-PO66-EO100 MW=12600) THE cloud Point data indicate that the addition of NaDeBS to Pluronic L-61 Solution in water gradually decreases the hydrodynamic radius of the micelles however no change in the micelle size of pluronic (L-6) is detected in the presence of 1.0 M NaCl on addition of NaDeBS. These studies suggest that pluronics have a broad spectrum on biological response modifying activities which make it one of the most potent drug targeting systems, resulting in a remarkable impact on emergent field of nanomedicine.



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