7th Go Green Summit
14TH - 15TH OCTOBER 2021 | PHILIPPINES

7th GoGreen Summit-2021

14th - 15th October 2021

Manila, Philippines

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Integrating Medicos...Incubating Research !!!!

ISERS
INTERNATIONAL SOCIETY OF ENVIRONMENTAL RELATIONSHIP AND SUSTAINABILITY

Organized by

- International society of Environmental Relationship and Sustainability
- Philippine Normal University Visayas -The Environment and Green Technology Education Hub
- Faculty of Earth science, Universiti Malaysia Kelantan Jeli Campus
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ISERS

7th GoGreen Summit

" Unfolding the Concepts of Green Technology to achieve Zero Emission"

Manila, Philippines

14th - 15th October 2021

BioLEAGUES Worldwide

Organized by:

ISERS

Faculty of Earth Science

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Preface

This book reports the Proceedings of the ***"7th GoGreen Summit"*** held on ***October 14th and 15th, 2021*** organized by ***BioLEAGUES Worldwide***.

The publishing department has accepted more than 250 abstracts. After an initial review of the submitted abstracts, 190 papers were presented at the conference and were accepted for publication in the Conference Proceedings. The topics that are covered in the conference include Green Energy, Environmental Chemistry and Engineering, Environmental social studies and Sustainability, Agriculture and Plant Biology, Waste Management, Pollution Control etc. We would like to thank all the participants for their contributions to the conference and the proceedings.

Reviewing papers of the **7th GoGreen Summit 2021** was a challenging process that relies on the good will of those people involved in the field. We invited more than 15 researchers from related fields to review papers for the presentation and the publication in the **7th GoGreen Summit** Proceeding. We would like to thank all the reviewers for their time and effort in reviewing the documents.

Finally, we would like to thank all the proceeding team members who with much dedication have given their constant support and priceless time to bring out the proceedings in a grand and successful manner. I am sure this **7th GoGreen Summit 2021** will be a credit to a large group of people, and each one of us should be proud of its successful outcome.

7th GoGreen Summit 2021

From BioLEAGUES Director's Desk…

On behalf of **BioLEAGUES Worldwide**, I am delighted to welcome all the delegates and participants around the globe to the ***"7th GoGreen summit"*** which is going to be held on **14th and 15th October 2021.**

This conference will revolve around the theme ***"Unfolding the Concepts of Green Technology to achieve Zero Emission".***

It will be a great pleasure to join with Environmentalist, Research Scholars, and climate activists all around the globe. You are invited to be stimulated and enriched by the latest innovations in all the aspects of Environmental science while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the Chairperson, Organizing Secretary, Committee Members, coordinator BioLEAGUES and all the people involved for their efforts in organizing the **7th GoGreen Summit 2021** and successfully conducting the International Conference and wish all the delegates and participants a very pleasant conference.

A. Siddth Kr

A. Siddth Kumar Chhajer
Director
BioLEAGUESWorldwide

Welcome Message from Conference Chair

Good morning, it is a big pleasure to me that Bioleagues Worldwide as Organizing Committee organized for two-days conference in October 2021 is 7th GoGreen Summit International Conference with Theme: Unfolding the concepts of Green Technology to Achieve Zero Emmission.

Brings the biggest joy, pride and fullfilment. It is great pleasure to welcome all the keynote speakers, invited speakers, speakers, delegates, and participants of this conference held at St Giles Hotel, Makati, Manila, Philippines on October 14th and 15th, 2021.

As stated in the title, the scope of the conference covers about Green Technology, Management, and Social Sciences, for the smart living, which are in a fact, requires many disciplines.

This conference may also give opportunities to under and post graduate students, faculty members, practitioners, industrialists, and researchers alike to take an active part and present research papers.

I am certain that the conference will prove to be a healthy point of academic interaction and so the students, faculty members, practitioners, and industrialists as well will not only give but also benefit and draw inspiration also networking from the talks and presentations from the distinguished guests.

I would like to express my deep appreciation to keynote speakers for the efforts to present the ideas and methods in a lively and accessible way.

Finally, but not least, I would like to thank those who have responded to our call to take part and to contribute to this conference. We have a big hope that all of you enjoy, and get more knowledge and fruitful experience through the conference.

Dr. Bambang Sugiyono Agus Purwono
State Polytechnic of Malang – Indonesia
Manila, October 14th, 2021

REPUBLIKA NG PILIPINAS
Republic of the Philippines
PAMANTASANG NORMAL NG PILIPINAS VISAYAS
Philippine Normal University Visayas
ANG PAMBANSANG SENTRO SA EDUKASYONG PANGGURO
The National Center for Teacher Education LUNGSOD NG CADIZ
City of Cadiz

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MESSAGE FOR THE 7TH GO GREEN SUMMIT

We are in a geological period where human activity has been the dominant influence on climate and the environment. As humans, we enjoy changing and transforming our surroundings to suit our needs and desires because that is part of our human nature: to live and interact with the environment.

However, the frequency and severity of our tendency to tear down forests in order to build skyscrapers, cities, and roads, plus our inclination to burn fossil fuels, throw garbage into our rivers and oceans, practices that we have grown accustomed to, has now reached a state where they become unsustainable.

But this is not to say that human activity is only designed to destroy the planet. While it is a fact that we are the dominant contributor to the Anthropocene, we also have the potential to help heal the planet by focusing our attention on using renewable sources of energy and technologies that will greatly decrease our carbon footprint and implement mechanisms to make our activities more sustainable and eco-friendlier.

The Philippine Normal University Visayas, the Environment and Green Technology Education Hub (EGTEH), is at the forefront of the University's goals to achieve a more sustainable future through education and teacher training. Since being designated as EGTEH, PNU Visayas has conducted several projects and initiatives to integrate its instruction, research, extension, and production programs with UNESCO's vision of Education for Sustainable Development (ESD). The integration of the ESD in PNU's culture and practices is just the first step toward crafting a teacher education curriculum that will pave the way for a more sustainable future.

PNU, as the National Center for Teacher Education, is serious in its role in shaping the future to be enjoyed by humanity. For this reason, we are grateful to be part of the 7th Go Green Summit organized by Bioleagues Worldwide and the International Society of Environmental Relationship and Sustainability. We are confident and optimistic that through this summit, our institutions will be able to facilitate an exchange of insights and practices regarding environmental sustainability and proliferate these ideas to our stakeholders.

On behalf of the Philippine Normal University System, I would like to congratulate everyone who made this summit possible and for providing us with the opportunity to share our experiences and expertise.

Together, we shall build a sustainable future.

BERT JAZMIN TUGA, PhD
President

Assalamu Alaikum Wr Wb and Gooday everyone

It is great privilege to welcome all keynote speakers, presenters, participants, and sponsors from all over the world to the 7th Go Green Summit which to be held on 14th - 15th October 2021 in Manila, Philippines and as well as virtual.

This Go Green Summit 2021 in collaboration with Bio LEAGUES and Universiti Malaysia Kelantan (UMK) has strengthened the event to be a premier gathering of all renowned researchers, eminent scientist, academicians, and NGO's from different countries to share their innovative researches in all aspects of environment science. I strongly believe all the sharing and discussion from eminent speakers will give a new perspective and new strategies on all aspects of environmental sciences in our daily life.

The theme of 7th Go Green Summit is "Unfolding the Concepts of Green Technology to achieve Zero Emission". As stated within the theme, the topics of dialogue at the event will revolve completely around green technology strategies and methodologies that have yielded real results over the past few years after being implemented during a careful and well-thought-out manner.

The aim of this event bringing the advancement within the field of natural science, global climate change, ecology, GIS and Remote Sensing and also plays a special emphasis at educating and informing environmental researcher, industry professionals with the newest knowledge of technologies which will be applied to counter the economic under-evaluation practitioner may face in their practice.

Now it is the time for all of us to be more innovative rather than peripheral and conventional. The 7th Go Green Summit is a platform to share resources and solutions within a regional economy and connect people working towards similar goals. Our focus is on sustainable systems and practices, which we believe are foundational to the success of individual organizations as well as our cities, states, nations, and all over the world. So, I encourage all participants of this summit to do best to achieve the set goal of this conference.

Lastly but not least, I would like to take this opportunity to thank all committee for spending their valuable time to bring the 7th Go Green Summit 2021 to great success. My sincere thanks go to supporters and sponsors. I look forward to receiving you at 7th Go Green Summit 2021.

With Best Wishes

Assoc. Prof. Ts. Dr. Mohamad Faiz Bin Mohd Amin

Co-Chair Go Green Summit 2021

Associate Professor and Dean,

Faculty of Earth Science, Universiti Malaysia Kelantan, Malaysia

Welcome Message from Organizing Secretary

On behalf of the BioLEAGUES' organizing committee and International Society of Environmental Relationship and Sustainability (ISERS), I gladly welcome all the participants, environmentalists, green earth warriors, nature enthusiasts, meteorologists, professors, climate scientists and other attendees of the 7th GoGreen Summit which is scheduled on October 14-15, 2021 at Manila, Philippines with the theme "Unfolding the Concepts of Green Technology to achieve Zero Emission". Green Technology gives us an opportunity to create products that are more environmentally friendly in order for us to protect our environment and even help repair and restore past damages done to the environment.

I am looking forward that at the end of this summit, all participants can develop or even increase self-awareness about the concepts of environmental science dealing with pollution control, waste treatment, recycling, climate change, and finding ways and solutions how to preserve and conserve the earth's natural resources.

I am self-assured that through the implementation of concepts gained from this conference about green technology, change may happen, and that humanity is bound to receive economic rewards for the job well done.

Let us therefore join hands and focus on sustainable systems and practices which I believe are the pathway to success of every individual, organizations and nations around the world.

Have a satisfying Green Technology Conference and bring back with you a wonderful experience.

Archel Amit Bedaure, ED.D
Associate Professor IV
Carlos Hilado Memorial State College, Philippines
archelbedaure98@gmail.com

From BioLEAGUES CEO's Desk…

It is indeed a privilege to acknowledge and thank all the supporters and organizers of the "***7th GoGreen summit*",** who contributed greatly to organize the conference successfully.

I would like to acknowledge and thank the Chief Guest for his/her valuable contribution in the ***7th GoGreen summit.***

My special thanks to all our Special Guests who so graciously accepted our invitation to participate in the conference. I also wish to acknowledge and thank the sponsors of the conference whose financial support was extremely grateful.

I would like to specially thank our Advisory Committee Members from various Organization whose continuous support have helped us plan and execute the conference successfully.

I am highly indebted to the contribution given by all the Scientists, Doctors, Research Scholars, Environmentalist, and students to the conference.

Mr. R. B Satapathy
CEO
BioLEAGUES Worldwide

Keynote Speakers

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14th – 15th October 2021

Green Technology and Sustainable Design towards Zero Emission

Er. Dr LOCK Kai Sang
Professor & Head, Energy Efficiency Technology Centre, Singapore Institute of Technology
Emeritus President, the Institution of Engineers, Singapore
Deputy Chair, the Washington Accord

Abstract

Sustainable design is now a key requirement for engineering education. Engineers are required to incorporate sustainability in their design of products, processes, and infrastructures with the objectives of optimizing the use of natural resources and with minimal degradation or disruption to natural ecosystems. Sustainable design with incorporation of green technology is key to address global climate change.

Engineers must incorporate green technology in the design and development of renewable energy sources into power generation and the decentralized grid system. They design green buildings, efficient and reliable power distribution networks, energy efficient motor-driven systems, HVAC services, and innovative energy efficient industrial processes, among others. Increasingly, ICT professionals are required to embrace Green Computing that encompasses all facets of computing lifecycle from the design and manufacturing of computing hardware to software architecture and computing algorithms, materials utilization and recycling, system operation and management.

This paper examines the sustainability competency requirements by looking at the challenges and solutions in implementing Green Technology, drawing examples from Singapore's experience.

ISBN: 978-81-951121-4-2

Biography

Dr Lock is a Professor (Engineering) and Head of the Energy Efficiency Technology Centre (EETC) at the Singapore Institute of Technology, the 5th government-funded university in Singapore. EETC conducts authentic energy audits for the industry and applies green technology to improve energy efficiency. He plays an active role in sustainability drive in Singapore, particularly in training and competency certification. He is the Chairman of Accreditation Committee for Energy Service Companies (ESCOs) and the Co-Chair of Steering Committee of Singapore Certified Energy Managers (SCEM) Scheme.

He is passionate about quality assurance of engineering education and is presently Deputy Chair of the Washington Accord (WA), an international agreement formed in 1989 among signatories responsible for accrediting engineering degree programs. WA is collaborating with the World Federation of Engineering Organisations to incorporate more structured sustainability topics in engineering education.

He is an Emeritus President and an Honorary Fellow of the Institution of Engineers Singapore (IES), a Fellow of Academy of Engineering Singapore, a Senior Fellow of ASEAN Academy of Engineering and Technology, and an Honorary Fellow of the ASEAN Federation of Engineering Organizations.

He has a unique blend of practicing and academic experience acquired through a career equally split between the industry and the academia. He received both his B.Sc. (1975) and Ph.D. (1979) degrees in Electrical Engineering from the University of Strathclyde, UK. He was a faculty at the Department of Electrical Engineering, National University of Singapore for 17 years when he left to set up his consulting practice in 1997. He returned to the academia as a Professor at SIT in 2016 after 20 years in the industry

ISBN: 978-81-951121-4-2

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Implementations of Proper Disposal Treatment Technology for Waste Plastics and the Development of Waste Collection Protocol in Covid-19 Pandemic

Dr.Songpol Boonsawat
RigorTech Sdn Bhd Malaysia

Abstract

Why is plastic waste a huge global problem? Because there isn't yet available implementation of proper waste disposal treatment for plastic. Plastic waste could be considered as our secondary resource not just waste since it has been produced, used and ended up in our nature e.g. landfill, soil, ocean and etc. Technology implementation and technology adoption is not just yet the right and only answer for this huge global problem, policy alone is not also. It has to be a perfect mixture among right and proper waste management, waste collection, waste operation, waste collection, waste handling policy and also importantly with the right waste disposal technology. The pandemic in past 2 years creates more and more challenges for this global problem, it creates more difficulty and limitation on waste handling protocols. Generally, management of waste that is suspected or known to contain or be contaminated with COVID-19 does not require special precautions beyond those already used to protect workers from the hazards they encounter during their routine job tasks in solid waste and wastewater management. In this case study, let's discuss problems, opportunities, challenges and the possible solution for current global waste problem.

ISBN: 978-81-951121-4-2

Biography

Founder and R&D Director. Viro Solutions Group Pty Ltd (Australia), Viro group company (USA), Viro technology (CA,USA), Energy Else Co.,Ltd (Thailand), Siam Pollutech Co.,Ltd and NOW opening NEPAL Pollutech or Siam Pollutech Nepal, Rigortech Malaysia. Currently Harvard Business School-HBS PhD Fellowship (Major Strategy) and DBA Marketing. Completed PhD in Environmental Engineering. Master degree in Industrial and Manufacturing Engineer from Asian Institution of Technology, Thailand. Bachelor of Materials Science from Khon Kaen University, Thailand. Received awards from 2016 SHARK TANK (First Asian passport holder on the show), 2016 Best Technology Innovation Award War Plastic Uk And 2017 World Wide Tech Developing USA, China, Malaysia, Thailand, Fiji, India

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Whole School Approach to Environmental Sustainability Education: The PNU Visayas Experience

Bert J. Tuga
Philippine Normal University, Philippines

Abstract

Environmental sustainability is defined as dutifully interacting with the planet to maintain and preserve natural resources and avoid endangering the ability of the future generations to meet their needs (Evans, 2020). Educating for Environmental Sustainability has become a priority of many educational institutions because of the global demand for sustainable development. However, there are issues that have been identified in relation to Educating for Environmental Sustainability such as fragmentation of themes in the various subjects, inadequate instructional materials, inadequate training of teachers, lack of learning facilities and laboratories, lack of leadership and administrative support, and gaps in relation to community participation and relevance. Whole school approach to Environmental Sustainability is perceived to capture and address the aforementioned issues in a systemic manner and ensure that learning goals are achieved through the formal and informal curriculum, and other school practices.

Biography

Dr. Bert J. Tuga is the 11th President of the Philippine Normal University, the National Center for Teacher Education. Prior to his current post, he has occupied the following positions in the University: Vice President for Finance and Administration, Vice President for University Relations and Advancement, and Campus Executive Director & Provost. Outside PNU, Dr. Tuga serves as Executive Director of the United Nations Association of the Philippines, Board Member of the Philippine Association for Teachers of Educational Foundations, and a member of the Core Team of the Asia-Pacific Network on Global Citizenship Education.

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Integrated Farming Systems – A Scientific Way of Farming for Circularity and Carbon Neutral/Negative

Dr. N. Subash

ICAR-Indian Institute of Farming Systems Research, India.

Abstract

Food and Agricultural Organization in its latest report on "The future of food and Agriculture: Trends and Challenges" described that high-input, resource-intensive farming systems, which have caused massive deforestation, water scarcities, soil depletion and high levels of greenhouse gas emissions, cannot deliver sustainable food and agricultural production. GHG emissions from farming systems is dominantly due to improper crop management practices, livestock population and improper diet usage, deforestation, non-forest land use changes and over use of inorganic fertilizers which can result in loss of soil organic matter. There is an opportunity to achieve climate-friendly agriculture by both sequestering carbon and reducing emissions through different interventions viz. enriching soil carbon by agronomic practices, livestock production technologies, balanced use of fertilizers, planting boundary plantations and agroforestry etc. The author discussed two research outcomes in this presentation, 1) Under the aegis of AICRP-IFS at ICAR-IIFSR, developed an GHGs emission estimation tool, which represents Indian farming scenario/situation with possibility of all the components/ enterprises of integrated farming system, so that any stakeholder can use without any hindrance to identify/quantify the GHG emission potential of their farming system, so that they can assess the C-footprint of their system and also modify their system according to C-neutral/negative concept. 2) Under NICRA, the flagship program of ICAR, we have measured GHG emission from rice-wheat system under different management practices vs source of nitrogen fertilizer.

Biography

Dr. N. Subash, presently working as Principal Scientist in Agricultural Meteorology at ICAR-Indian Institute of Farming Systems Research, Modipuram, Meerut, Uttar Pradesh. He is having more than 100 publications in peer reviewed National/International Journals which is having high impact factor/NAAS ratings. He worked as Lead Principal Investigator of AgMIP - ICAR Collaborative Project, ICAR-University of Nebraska-Lincoln Collaborative Project on Yield Gap Atlas, NICRA Project etc. He developed excel based software for estimation of GHG emission from Integrated Farming System. He visited more than 20 foreign countries and provided invited talk in ASA, AGU, AgMIP and GYGA Global workshops etc. At present, his research areas include impact assessment of climate change impact at farm/household level using multi-models, measurement of GHG emission from IFS and agro-advisory services.

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Hydrogen Technologies on Maritime Application

Dr. Sofoklis Makridis

Director in Materials, Energy, Electrification and Hydrogen Systems Manufacturing Lab. Associate Professor, University of Patras, Greece

Abstract

Maritime shipping is a key factor that enables the global economy, however the pressure it exerts on the environment is increasing rapidly. In order to reduce the emissions of harmful greenhouse gasses, the search is on for alternative fuels for the maritime shipping industry. In this work we will study the usefulness of hydrogen and hydrogen carriers as a fuel for sea going ships. Due to the low volumetric energy density of hydrogen under standard conditions, the need for efficient storage of this fuel is high. Key processes in the use of hydrogen are discussed, starting with the production of hydrogen from fossil and renewable sources. The focus of this diploma thesis is different storage methods, and in this work we discuss the storage of hydrogen at high pressure, in liquefied form at cryogenic temperatures and bound to liquid or solid-state carriers. A theoretical introduction to different hydrogen storage methods precedes an analysis of the energy-efficiency and practical storage density of the carriers will be performed. In the final section the major challenges and hurdles for the development of hydrogen storage for the maritime industry are discussed. The most likely challenges will be the development of a new bunkering infrastructure and suitable monitoring of the safety to ensure safe operation of these hydrogen carriers on board the ship.

Biography

Director of the Laboratory in Materials, Energy, Electrification and Hydrogen Systems Manufacturing. Obtained research and developments on materials and processes for hydrogen energy and environmental applications and taught courses on relevant fields. He has used multidisciplinary approaches related to materials, technology and innovation. Expert in Virtual Companies' development in UK and Europe. Consultancy in Hydrogen-Renewable Energy & Green Technologies Investments. Oil & Gas Industry. Foresight Management and Innovation in Hydrogen Sector. Materials and Bioclimatic Architecture. Blue Green Buildings in collaboration with Michalakakou (Santamouris) Group. Grantholder at European Commission on low carbon policies. Editor-in-Chief and Editor (Chemistry, Physics, Materials Science and Technology, Engineering) of STM publishers. Specialties: Experimental and Theoretical Approaches regarding Materials Science and Engineering, Hydrogen Technologies: Electrolyzers-storage-compression-Fuel cell systems, Innovation Processes, Materials Technology for Energy Policy, Smart Grids, Phase change materials, Energy storage materials, Heat exchangers. Magnetic materials, ferrites, composites. Rare-earth transition metals, Intermetallics, Polymer Composite Matrices, thermoelectrics (experimental and modelling of modules). Crystallography, Microscopy-SAED analysis, Magnetometry, Chemisorption, laser ablation, CVD, Rietveld Analysis, 3D printing, experimental setup developments and real time analysis, CFD modelling. He has experience as a supervisor of traditional and practice-based PhDs in the UK and Europe, and of PhD by published works, and as a PhD examiner. He has also participated in the editorial board of well-established journals covered by ISI, co-chaired conferences and involved as Editor-in-chief in open access.

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With New Mindsets and Paradigms, the World can resolve its Go Green Issues

Johann Breytenbach

Sustainable Natural Resource Utilisation & Community Enablement, Netherlands

Abstract

The existence of the Millennium Development Goals, the Agenda 2030 Sustainable Development Goals and the Aichi Biodiversity Goals, serves as an indictment of mankind's failures. It highlights our inabilities to address the issues raised. I review the existing paradigms that underpin these failures and propose new integrated paradigms that enables us to resolve the problems.I then review the application of Biomass as a feedstock, which if implemented within the suggested frameworks and paradigms, will enable us to resolve most of the major issues we face at present. Finally I present an analysis of the contribution the suggested projects make to the SDG's and Aichi goals.

ISBN: 978-81-951121-4-2

Biography

Qualifications BA MSc. Game Ranger Natal Parks, Game and Fish Preservation Board (5 years). Technical assistant and Junior lecturer University of Pretoria, South Africa. (5 years). Mountain catchment research with a focus on the impact of fire on biodiversity and water yield in the fynbos biome. Saasveld Forestry research Station (10 years). Headed up the Saasveld Forestry Research Station (2 Years). Programme Manager of the conservation management programme in Forestek CSIR. (3 years). Corporate Programme Manager Technology for Development, CSIR, South Africa. (7 Years) Director Sustainable Development in 6 Companies (11 years). Consultant community alignment and sustainable development (20 years).

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Sustainable Wastewater Treatment – Waste Water Or Water Wasted?

Rami Elias Kremesti

Kremesti Environmental Consulting Ltd, UK

Abstract

Wastewater has an environmental impact and can cause serious environmental damage as well as impact health by transmitting disease thus technology is used to treat it to minimize this impact. We look at various sustainable technologies for waste water treatment in which waste water is treated as a resource not a waste product. The goals for sustainable waste water treatment is to use as little energy as possible in the process and to recycle or recover the resources in the waste water such as sludge which can be converted into methane and thus electrical energy with the ultimate goal of creating a Net-Zero process. Other nutrients that can be potentially recovered are N and P as well as fibres and humus. We will be looking at future waste water treatment processes that will be needed to remove Persistent Organic Pollutants and Endocrine Disrupting Chemicals.

Biography

Rami Elias Kremesti is a UK chartered water and waste water treatment specialist with over 15 years of experience working on EPC clean and waste water treatment projects. He holds a M.Sc. degree in industrial chemistry from the USA specializing in silicon surface science and ultra-pure water contamination detection and control. For 10 years, he worked internationally on ALSTOM power station projects managing the clean and waste water treatment systems and currently manages contracts for sewage treatment in the UK. He specializes in RBC technology and has experience in MBBR as well.

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The Healing Earth (A Global Initiative to cure the mother planet Earth)

Shri. Shreegumi Dharman Vijeyen
Minister of Environment & Climate change, World Parliament Government, Delhi, India

Abstract
Being The Founder of "The Healing Earth" (A Global initiative)me and my team's efforts are focused on creating more and more Employability through Environment, to arrange basic resources available to all, by connecting all with the Nature …
Nature is the best Employer and the best Paymaster, to make Earth a Green Planet having enough food for all. Under Healing Earth project we have initiated to plant one billion of trees throughout India in coming years.
We are working on restoring ecology to natural state by rejuvenating the water bodies, in the process we depollute the water, air, and soil. Having successful completed various projects in different states of India, we are interacting with Delhi government, MCD and DDA to get more than 1024 water bodies in Delhi. and with various other state governments in india and have initiated the process in various other countries too… we are making claim to de pollute Delhi just by rejuvenating the water bodies. Through our Cownomics Technology there will be no need of chemicals and fertilizers, agricultural production won't be affected, aqua culture production can grow up too 100 times too, this is our claim, if it grows 10 times also , it is substantial growth... when all would be in pure or less polluted form, need of pharmaceuticals would be less, global warming can be reversed... Health, mental health all would improve...We are making lots of tie ups world wide...We can revive the planet which we humans have almost killed.... We are only players on the planet who own this Vedic technology to rejuvenate the water bodies…..

Water is next OiL and Economics in Ecology is a multi trillion Dollars Opportunity.....
Cownomics is the best way to Make Money with Water and contributing to social cause simultaneously..... as you are reviving the Planet, so Money is the byproduct, and social cause is inbuilt....
Undermentioned are few areas will directly benefitted through water rejuvenation work
1) Natural Water Bodies Rejuvenation
2) Proper treatment of Sewage and better Management

3) Underground Aquifers Rejuvenation
4) Air Pollution, soil pollution, water pollution will be controlled and mitigated…
5) Drinking Water Scarcity can be undone
6) Agriculture production without fertilizer, chemicals, and pesticides... Without compromising the yield…
7) Aquaculture production can be increased manifold.
8) Animal Husbandry
9) Dairy Farming
10) Carbon Sequestration , which can be a huge revenue generation process…
11) Reversing the Global warming
12) Affectively flood control can be managed
13) can lessen the intensity of Earthquake as by recharging the underground aquifers will absorb the shocks by acting as cushion shock absorber….
14) water bodies will retain water round the year, no overflow during rains, no dry water bodies in summer.... as water flows from high density to low density, to during rains it will go underground aquifers and would come up to surface water bodies in hot season
"Ecological Economics for Sustainable Future"

Biography:

Minister of Environment & Climate change, World Parliament Government, Founder director of creatron technologies pvt ltd. Consultant at D Fence Electronic Fencing and security systems Ltd. Director India, Middle East, South east Asia, Africa. Director of Global Middas group.
Served in multi-national companies for 10 years now who is world leader in global food industry, It was then I was exposed the risk consumers face and the high responsibilities of the food industry. Regulatory Affairs role embarked the food knowledge in me. Starting off by providing review & approval from regulatory perspective i.e. Country Compliance, Diet Suitability, Legal Declaration for APAC region. Also provide technical advice on legal, compliance, and scientific restraints to related business unit or other departments as when requested. Working within these roles gave me the chance to identify the needs of my company, design solutions and implement them, while maintaining an eye on minimizing cost (initiated by procurement), without compromising regulatory compliance and therefore customer satisfaction. Legislation differs from country to country particularly in APAC. My role ensures that food manufacturers & traders stay up-to-date with the vast array of legislation and standard-setting as it applies to their operation without compromising customer requirement where possible.

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Stock Enhancement For Artisanal Fishing To Improve Catch Rates

Saif AlGhais
Environmental Protection and Development Authority, Ras AlKhaimah, United Arab Emirates

Abstract

Development of artificial reefs as well as fish size limits for heavily fished stock, positively reflected on the protection of fish stocks. In view of the accelerating demand for marine products, coastal countries must put in place references to protect and develop their marine resources for the purpose of sustainability. Therefore, it is extremely important to implement the correct measure and regulation such as close season and fishing effort. However, higher fish recruitment on the artificial reef will results in significant catch rates due to aggregation of fish population. Accurate estimation of fishing mortality will depend on the methodology of data collection. It is concluded that habitat alteration in coastal environment is beneficial if the constraints measure were implemented.

Key words

Artificial Reef, Reef fishes, Fish recruitment, Ras Alkhaimah.

Biography

Saif AlGhais, Ph.D. – is a marine biologist dedicated to the cause of environmental conservation and sustainable management of natural resources in the Arabian Gulf.

Currently, Dr. AlGhais is the Director General of the Environment Protection & Development Authority in Ras Al Khaimah, UAE. In addition, he is an Adjunct Professor at Western Washington University, U.S.A. Earlier he had been working in the UAE University as an Associate Professor in the Department of Biology and Head of the Marine Environment Research Section. He has also served as the Secretary General of the Abu Dhabi Environmental Authority from 1996 to 2001.

Dr. AlGhais received B.Sc. in Biological Science from Seattle Pacific University, U.S.A. and Ph.D. in Marine Biology from the University of Liverpool, U.K. He has published over sixty research papers in peer- reviewed journals and participated in over 100 national and international symposiums/conferences. He has the honor of being Fulbright scholar and visiting scientist/faculty at several academic institutions around the world. He has been invited by the National Marine Fisheries Service, Southwest Fisheries Center Honolulu Laboratory and Battelle Pacific Northwest Laboratory at Sequim, Washington to undertake collaborative research programs in marine sciences. He is well known for his contribution to some pioneer projects in the UAE such as characterization and compilation of fish species inhabiting the UAE waters, the rehabilitation and conservation of mangrove ecosystem, the conservation of sea turtles and Dugong and the impact assessment of environmental pollution. Dr. AlGhais serve as Vice-chairperson of the UNESCO Intergovernmental Oceanographic Commission Regional Committee for the central Indian Ocean (IOCINDIO) he has been also contributing to the environmental protection and management efforts of other government and non-government organizations on the national and international level. He serves as the Vice-Chair for Western Indian Ocean IUCN/SSC Marine Turtle Specialist Group, and Adjunct Professor at Western Washington University, USA and Odessa State Environmental University, Ukraine.

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To GrowGree – GoGreen
Next Generation Perspective to minimize adverse impact of agriculture on ecosystem

Dr. Purushottam Dewang, M

Founder MD and Chief Scientific Officer, India

Abstract

On the occasion of 7th GoGreen Summit, Dr. Purushottam Dewang, Founder MD and Chief Scientific Officer of CropG1 Agro Research & Development Private Limited Bangalore, will stir the storming discussion to bring to forefront how the agricultural practices affect the ecosystem. He will bring in the recent perspective on what are next generation strategies to minimize the adverse impacts of current agricultural practices. Not a single human being living on the globe, and for that matter not a single living organism, can isolate himself/herself or itself from the agricultural practices even if involved in agriculture directly or not. Every living being is affected by the impact of agricultural practices. Methodology that is used today for spraying pesticides is like shooting randomly in the air hitting everyone that comes in the way, killing innocents (beneficial) insects and microbes while the actual target is only a few harmful insects and microbes. This lecture, emphasizing need to GoGreen while Growing Green, will put forth thought process if this classical age-old practice of blanket application of agrochemicals, fertilizers, insecticides, fungicides or herbicides, can be fine tuned in the sustainable practices of next generation of agricultural practices. Agriculture, in short growing plants (and animals too), is the backbone of complete ecosystem. Not only human beings but almost all living organisms depends for its survival on food and oxygen. These essential elements, food and oxygen, basically do come from plants and animals. Hence, when we consider environmental aspects dealing with pollution control, waste treatment, recycling and climate change, we must seriously think over and agree to change the culture of doing agriculture for sustainable, clean and green tomorrow.

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Biography

Dr. Purushottam Dewang has completed M. Sc. (Chemistry) and Ph. D. (2002) on design and synthesis of natural products (monoterpenoids) based biologically active molecules. His specialty lies in design, synthesis and development of novel molecules/formulations. After completing Ph. D., he worked as a scientist in foreign countries for about 8 years, returned back to India in August-2010, then worked with American companies on drug discovery projects in the capacity as a senior level scientist with Bangalore-based biotech company-Jubilant Biosys Ltd. His career as a scientist has been very successful, he is co-author of 30+ research papers and 10+ patents on development of novel bioactive molecules. It is proud to emphasize that Dr. Purushottam is co-inventor of two new anti-cancer drug candidates namely ASN001 and ASN007, that are approved by USFDA for clinical trials in USA. Dr. Purushottam founded CropG1 Agro Research & Development Pvt. Ltd in Bangalore in 2012 with the aim to develop organic alternative to chemical inputs for pest, disease and nutrition management in agricultural practices. The company CropG1 has been working towards development of novel agricultural-inputs aimed towards reduction of use of toxic carcinogenic chemicals in agriculture. CropG1 has developed several effective and unique organic agricultural-inputs for pest, disease and growth management. CropG1's innovative products include - capsules of the biofertilizers, sustained release powder formulations for pheromone lures, new biostimulants, biopesticides, plant growth promoters, bio-fungicides, anti-viral formulations etc. CropG1 has been recently awarded with the research grant of 5 million Indian rupees by department of biotechnology under BIRAC-BIG for development of innovative product for sustainable and eco-friendly agriculture.

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7th GoGreen Summit
14th – 15th October 2021

Legal Initiatives for the Effective Environmental Governance and for the Sustenance of Sustainable Development in India

S. Ganapathy Venkatasubramanian
Centre for Environmental Studies, Anna University, Chennai, India

Abstract

The word, Sustainable Development, has come in to existence from Rio Declaration (1992). But, if anyone could trace the history of the Indian culture, it can be observed that the practices we have been doing from time immemorial are towards Sustainable Development. Unfortunately, due to the introduction of western culture in to our system, it has slowly changed into consumerist culture: from the repair to remove, replace to use and throw culture. To speak strictly and judicially, even though the Sustainable Development principle has come into existence since Rio Declaration (1992), it wasin the form of soft law only, which is judicially non enforceable and non-obligatory on the part of signatories. It is needless to say India was also a partner for the Declaration; the soft law was given hard law status in India by Hon. Supreme Court in its land mark judgement in the Vellore Citizen Welfare Forum vs Union of India case in 1996. For the effective Environmental Management three "E's" are essential vide Engineering, Education and Enforcement. In Engineering point of view, to attain the sustainable development we have to have a comprehensive look and control of all the sources and types of pollution through technological input and ways and means. It is highly imperative to blend the scientific principles into the engineering and develop technology to control and manage the pollution both at the source and end pipe treatment with clean development mechanism where it is possible. The second "E" is Education –namely creating an awareness and sensitizing the people the importance of pollution control, changing the life style and behaviour of the people and practice more eco-friendly methods. In fact, Hon. Supreme Court, in one of its land mark judgements made Environmental Education as one of the compulsory papers in college and University curriculum irrespective of the branch of study, with the same syllabus throughout the length and breaths of the country. Finally, with reference to third "E"namely Enforcement the laws play good amount of role in managing and controlling the Environmental pollution and Environmental Protection. Laws are the tools in the hands of the enforcement agencies to control and combat the pollution. Again, for the purpose of enacting the laws the Constitution has given room for the legislature. In this connection it can be very proudly said that India is one among the few countries in the world where the Environmental Protection is given the Constitutional status. We have enacted a plethora of Environmental

Legislations in the last two decades in addition to the Indian Penal Code for the effective environmental management. Apart from this Legislature, Executive, the third arm and pillar of the democracy namely Judiciary, also played a very active role and paved the way for the emergence of environmental Jurisprudence. In my paper, I am going to discuss how far the Sustainable Development has been given a hard law status by the Judiciary; and more so, the higher judiciary innovatively interpreting the Constitution elevated the Environmental Right in to a Constitutional Right from the ordinary simple public nuisance under the IPC. Apart from that the judiciary, certain principles and doctrines have been ingrained into our Environmental
Jurisprudence. In spite of all these, we could not achieve the requisite or expected target, why? Apart from this, the global concern for environmental crisis has led to the evolution and remarkable growth of international environmental Law.
The analysis has been made under twelve headings:
The different principles of International Environmental Law;
The Legal Status of General International Environmental Principles;
The various concepts and Principles of Sustainable Development;
Right to Development - Human Right;
Role of Human Rights Law in the Protection of Environment and the advantages and disadvantages of Human Rights Approach;
Treaties concerned with Third Generation Rights;
International Law and the Indian Constitutional Scheme;
International Law and the distribution of Legislative power;
International Law and the Constitutional Duty;
and International Law and Indian Courts
The Judicial adoption of international environmental law into domestic law in India has not been done overnight. In order to understand the Judicial process of such adoption, it is important to understand a blend of technological solution with Economic, ecological and legal regime together with political will, public participation and professional ethics. Together, they can solve the Environmental problems effectively and for the sustenance and effective management of Sustainable Development.
Keywords: Environmental governance, waste management, environmental laws and legality.

Biography

Have 30 years Teaching Experience. Involved in Several Environmental Impact Assessment related Consultancy works in my department. Guided 35 Students for M.E Project Work. Guided 20 Students for M.Sc. Project work. Guided 35 Students for M.B.A Project work. Appointed as Expert Member in the Monitoring Committee for Sand Quarrying operations by the Hon. High Court of Judicature, Madras, Writ Petition No 262 of 2020 for sand quarrying at Uthiramerur village , Kanchepuram District, Tamil Nadu vide Judgement dated 25.02.2021. 12. Nominated as Member of Honorary Board of the Centre for Environmental Law, Policy, Education and Development (CELPED)by the ICFAI Law School, ICFAI University, Dehradun on 25th March 2021. Received various awards, prizes in academics. Published more than 50 International and 50 national journals and written various books and chapters

7th GoGreen Summit

14th – 15th October 2021

The Vision

Dr. Wafik Noseir

Member of World Congress for Environment, Egypt

Abstract

The Environment has many branches on our planet Earth. Having mentioning the planet Earth will make me go through an overview about how we have progressed in knowing our earth, the solar system and the Universes of our horizon/Multiverse. In this presentation as well, I will discuss the main items that our Environment is affected by and the relationship of the current virus and the viruses that we will face in future apart of the other nature disasters that we have faced to the dilemma that would be occuring in the future if we don't act now

Biography

Member of World Congress For Environment , Environmental Engineering Consultant has many publishes in the sustainable development especially with the environment, worked in the first Solar Energy Corporation at Egypt that was established by company "Honeywell" since 1983 , Petroleum sector Planning & follow up manager at 3 main companies at Egypt , and many international companies such as Arthur And Centre consultant firm and Coca-Cola as a projects & Environmental Manager Project manager of the National project of Egypt on year 2000 called "Toshka", have participated in many International Conferences inside & outside Egypt especially the World Congress for the Environment that have represented Egypt as a free lancer 9 times lately was at Washington DC, California, Portland and Florida USA & France & Turkey & UK & Denmark, Dubai, China and Thailand .... etc founder & owner of Egyptian Modern Center (EMC), which is an Environmental Engineering Consultation firm that is trying to find its way in a polluted environment

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7th GoGreen Summit
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The Climate Emergency: Impacts to the Philippines and Local Adaptation Initiatives

Ludwig Oscuro Federigan
Environmental Advocate in Philippines, Executive Director of the Young Environmental Forum, Philippines

Abstract

The presentation tackles the impacts of climate change to the Philippines and the adaptation initiatives that our local government units are taking. The Philippines is currently in a state of public health emergency due to the Covid-19 pandemic. As we all work together towards recovery from this crisis, there is a bigger and even deadlier threat to humanity, which is climate change and the risks it brings. The Sixth Assessment Report of the Working Group 1 of Intergovernmental Panel on Climate Change provides new estimates of the chances of crossing the global warming level of 1.5°C in the next decades, and finds that unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or even 2°C will be beyond reach. The Philippines, being a vulnerable country, faces the constant risk of weather-related disasters like storms, floods and heatwaves exacerbated by warming temperatures. Moreover, climate change has a major impact on various areas and sectors of the society, which include agricultural productivity at food security; water security; human health; marine ecosystems; economic growth; as well as the impacts of Sea level rise to the coastal communities.

In response to this crisis, the Climate Change Act of 2009 was enacted to systematically address climate change in the context of development. The law mandates the formulation of the National Climate Change Action Plan (NCCAP), which outlines a long-term program and strategies for adaptation and mitigation. In line with the NCCAP, the local government units (LGUs) are tasked to formulate, plan, and implement local climate change action plans (LCCAPs) in their respective areas. As part of LCCAP, some of the LGUs have implemented adaptation programs and projects, considered as good practices, and should be emulated by the rest of the LGUs in the country to achieve a safer, sustainable, and climate-resilient country for the Filipino people and for the next generations to come.

Biography:

He is a graduate of Bachelor of Science in Engineering at Don Bosco Technical College (Philippines) as top five of the graduating class and president of the college student council. He completed his master's in business administration (MBA) at the University of San Carlos (Philippines), topping the USC Graduate School Comprehensive Examinations and as
president of the graduate students' organization. He finished his Strategic Business Economics Program (SBEP), graduating with merit, at the University of Asia & the Pacific (Philippines). He completed his Diploma in Supply Chain Management under the Business & Training Linkage Program of the PUM Entrepreneurs for Entrepreneurs (The Hague Netherlands). In the same year, he was awarded the ACE Chairman Scholarship to attend the ACE Ashridge Executive Development Program at the Ashridge Business School (United Kingdom). He expects to finish his Executive Master in Disaster Risk and Crisis Management at the Asian Institute of Management (Philippines) this December 2021.

He is a recipient of several scholarships to attend executive programs on climate change. he completed his executive program on sustainability leadership vii at Yale University (USA). In 2018, he was selected as the only Filipino and one of the 10 Asians to attend the Academy of Change, an 8-month program designed for 50 future leaders working for climate change and sustainability. He represented the Philippines in the 2021 G20 Global Leadership Program at the KDI School of Public Policy and Management (South Korea) viii. A Climate Reality Leader and twice Mentorix, he is the Executive Director of the Young Environmental Forum, and a Non-Resident Fellow x of Strat base ADR Institute, one of the country's respected think tanks. As a fellow, he wrote the occasional paper on "The Interconnectedness of Health, Climate Change and Society"xi during the peak of the COVID-19 pandemic in 2020. He also heads the Information and Knowledge Management Division of the Philippines' Climate Change Commission. He also maintains a weekly column, All About Choicesxii, in the business section of The Manila Timesxiii , and has written over a hundred and seventy articles on environment, climate change, resilience, and sustainability. He was recently appointed by The International Institute of Knowledge Management xiv as the Country Representative for the Association for Environment Management and Sustainability xv. He was part of the external assurance panel that examined and reviewed the environmental aspect of the Maynilad Water Services Inc.'s Sustainability Reports on Expanding Horizonsxvi (2017) and Rising to the Challengexvii (2018). He was formerly the Treasurer and Vice-President for Business Operations of the Worldwide Fund for Nature (Philippines) and has served the World Wide Fund for Nature (WWF) Asia-Pacific Finance & Operations Group.

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ABSTRACTS

Modeling of Swelling and pH-Dependent Nutrient Release Kinetics of HPC/CMC/Alginate Hydrogel Blends for Agricultural Applications

NALZARO, Paul Jake B
Department of Chemical Engineering, University of the Philippines , Philippines
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Department of Chemical Engineering, University of the Philippines , Philippines
TUMOLVA, Terence P
Department of Chemical Engineering, University of the Philippines , Philippines

Abstract

The swelling and nutrient release behaviors of a novel hydrogel blend of Hydroxypropyl Cellulose (HPC), Carboxymethyl Cellulose (CMC), and sodium alginate (NaAlg) was investigated to determine its applicability as an agricultural soil conditioner. Hydrogel swelling and nutrient release data were obtained over time at varying temperatures and pH conditions. The experimental data were fit into the power law, Tsai and Strieder, and Johansson's models to determine the kinetic parameters for the swelling behavior and nutrient release. Under the experimental swelling conditions, the maximum and minimum swelling capacities of the hydrogel blend were 322.9245% and 228.0483%, respectively. The data fit to the power law suggested that a pseudo Fickian behavior describes the diffusion mechanism. The data fit to the Tsai and Strieder and Johansson's models provided the experimental values for the a and temperature correlation as 3.69×10^{-5} and 0.0278, respectively, which implies that the diffusion behavior within the hydrogel does not vary significantly within the temperature range. Lastly, the inconsistency observed in the nutrient release behaviors at varying pH

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suggested that additional trials may be required in order to establish a clearer relation between pH and nutrient release behavior.

Biography

Paul Jake Nalzaro is an assistant head of the Green Materials Laboratory at the Department of Chemical Engineering of the University of the Philippines Diliman. He recently obtained his degree in Master of Science in Chemical Engineering last July 2021. His current research topics are on bio-based polymers and their novel applications (agricultural and biomedical).

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The impact of *Piper nigrum* plant extract on biochemical changes in larvae of *Aedes aegypt*

M. Sakthivel

PG & Research Department of Zoology, Kamaraj College, Affiliated to Manonmaniam Sundaranar University – Tirunelveli,Thoothukudi, Tamil Nadu, India.

C. Parthiban

PG & Research Department of Zoology, Kamaraj College, Affiliated to Manonmaniam Sundaranar University – Tirunelveli,Thoothukudi, Tamil Nadu, India.

Abstract

Bio control is often viewed as a progressive and environmentally friendly way to control pest organisms. Bio control can provide essentially permanent, widespread control with a very favourable cost-benefit ratio. Every year the millions of people living the tropics are affected by a verity of insect borne diseases, like malaria, filariasis, yellow fever and other arboviral diseases. Attempts are being made throughout the world to control these diseases, many of which are fatal by spraying conventional insecticides. The heavy and indiscriminate use of pesticides culminated in contamination of total environment including soil, air, water, food commodities and human health pest resurgence, distraction of natural enemies and beneficial insect. Toxicity studies on impact of *Piper nigrum* plant extract on *Aedes aegypti* mosquito larvae were carried out. Effect of *Piper nigrum* plant extract on bio chemicals changes during glycogen and protein metabolism in *Aedes aegypti* mosquito larvae. Normally tissue proteins in aquatic animals under toxic stress are known to play a vital role in the activation of compensatory mechanism. Further the protein contents were decreased in *Piper nigrum* of plant extract treated mosquito larvae from 113 ± 7.2 µg/mg to 96.4 ± 6.1. The glycogen content of control organism found to decline from 6.23 ± 0.7 µg/mg to 4.784 ± 7.33 µg/mg treated organisms. Similarly the enzyme activity was also affected by *Piper nigrum* extract in experimental organisms. The present investigation showed 53.00% decrease in the Acetyl cholinesterase (AchE) level in treated larvae.

Key Words

Piper nigrum, Aedes aegypti, Acetyl cholinesterase

Biography

35 years of teaching and research experience in the field of zoology with special focus on fishery science. Published 28 research papers in reputed journals. Seminar and symposia attended for paper presentation in various international conferences are 17. The seminar and workshops conducted 15. Books published 3. Ph.D., produced 4. The research projects undertaken from CSIR (1993), ICAR (1993-96), DOD-OSTC (2000-03), DST (2009-12 & 2015-17).

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Identification and Development of SSR and SNP Molecular Markers from RNA-Seq Data of Ornamental Ginger (*Curcuma alismatifolia*) Inflorescences

Sima Taheri
Centre for Research in Biotechnology for Agriculture (CEBAR), Universiti Malaya, Malaysia

Abstract

Curcuma alismatifolia, is an Asian crop from Zingiberaceae family, popularly used as ornamental plant and in floriculture industry of Thailand and Cambodia. Different varieties with a wide range of colors can be found in species. For further genetic improvement, however, little genomic information and no specific molecular markers are available. We carried out RNA-seq and *de novo* transcriptome assembly of two *C. alismatifolia* cvs, 'Chiang Mai Pink' (CMP) and 'UB Snow 701', (UBS) to identify and develop genic simple sequence repeat (SSR) and single nucleotide polymorphism (SNPs) markers for genetic diversity studies. In total 62,105 unigenes were generated and 48,813 (78.60%) showed significant similarities versus six functional protein databases. In addition, 9,351 expressed sequence tag-SSRs (EST-SSRs) were identified with a distribution frequency of 12.5% total unigenes. Out of 8,955 designed EST-SSR primers, 150 primers were selected for the development of potential molecular markers. Among these markers, 17 EST-SSR markers presented a moderate level of genetic diversity among Curcuma and Zingiber species. Additionally, in total 162,840 and 225,354 SNP markers were identified in CMP and UBS cultivars, respectively. It is expected that these markers will be effectively applied in molecular breeding programs and will also be useful for studying population genetic analysis of Curcuma and Zingiber species.

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Biography

Dr. Sima Taheri is currently senior lecturer in Centre for Research in Biotechnology for Agriculture (CEBAR), Universiti Malaya (UM). After completed her PhD in plant biotechnology at the Universiti Putra Malaysia (UPM), she was employed by UPM and UM as a postdoctoral fellow for five years before took up the role of senior lecturer. Over the years, she was involved in several research projects on breeding of ornamental ginger through mutation breeding and RNA- seq technology, as well as projects on genomics and transcriptomics analysis of Pandan and tomato under abiotic stresses. Dr. Sima has published her research outputs in more than 30 articles in peer-reviewed ISI journals.

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Study of Growth and Productivity of Wheat (*Triticum aestivum L.*) under Precision Nitrogen Management

Md. Naiyar Ali
Birsa Agricultural University, India
Tajwar Izhar
Birsa Agricultural University, India
Akhilesh Sah
Birsa Agricultural University, India

Abstract

A field experiment was conducted during *rabi* season 2017-18 and 2018-19 at Research Farm of Birsa Agricultural University, Ranchi, Jharkhand, INDIA with the objective to evaluate the growth, productivity of wheat under Green Seeker guided nitrogen management. The experiment was laid out in Randomised Block Design replicated thrice. The soil of experimental plot was sandy loam in texture having low nitrogen (175.6 kg/ha), medium in phosphorous (15.38 kg/ha) and potassium (183.46 kg/ha) with slightly acidic having soil pH 5.5. The eight treatments comprised of: T_1- absolute control, T_2-75kg basal+37.5kgN at CRI and Tillering T_3-60kg basal+30Nkg at CRI and tillering, T_4-30kg basal+30kg at CRI+ green seeker based N application ,T_5-30kg basal+60kg at CRI+ Green seeker based N application , T_6 -75kg N basal +75kg N at CRI,T_7- 50 kg N basal and 50kg at CRI and tillering and T8-90kg N basal and 90kg N at CRI. Application of 140 kg N in three split doses i.e. 30 kg N as basal, 30 kg N at CRI and Greenseeker guided nitrogen application of 50 kg at 45 DAS (second irrigation) and 30 kg at 65 DAS (third irrigation) recorded the highest number of (410.56), dry matter accumulation (1307.49 g/m2), crop growth rate (8.14 g/m2 /day), effective tillers/m2 (410.56), spike length (12.96 cm), spikelets per spike (21.66), filled grains per spikes (32.90), unfilled grains per spikes (2.56), thousand grain weight (42.0g), grain yield (5.3 t/ha), straw yield (7.2 t/ha), net return (Rs 62895/ha) and B:C ratio (1.80).

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Biography:

Dr.Md.Naiyar Ali,
Scientist-cum-Assistant Professor, Department of Agronomy, BAU., Ranchi
Experience: Sixteen years teaching and research
Publications: More than 50 in national and International Journal
Specialization : Nutrient management, weed management, water management and organic farming of crop.

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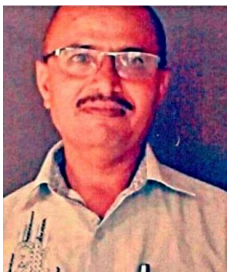
Protective Effects of *Millingtonia hortensis* Linn. On Chloramphenicol-Induced Oxidative Stress and Nephrotoxicity in Mice



DR. Laxman Landge
Department of Biology, K. J. Somaiya College of Science and Commerce,Vidyavihar, Mumbai, India

Prof. Ajit T. Kalse
Zoology Research Laboratory, Department Of Zoology, Nanasaheb Y. N. Chavan, Arts, Science and Commerce, College Chalisgaon, Dist. Jalgaon, Maharashtra, India

Abstract
Chloramphenicol is an important antibiotic commonly used in undeveloped as well as developing nations in treatment of life threatening bacterial infections. However chloramphenicol at high concentrations results in renal-toxicity (**Saba et.al., 2000**). It is studied that the damaged in kidney caused due to the free radicals generated in the kidney and other body organs also. The effect of *Millingtonia hortensis* Linn. extract was examined by estimating blood urea nitrogen, serum creatinine, lipid peroxidation, glutathione, catalase and SOD activities. In present study, chloramphenicol-induced nephrotoxicity characterized by significant elevation of serum markers levels, raised LPO levels, reduced SOD, GSH and CAT levels. Co-administration of methanolic extract with chloramphenicol was significantly prevented the renal injury protection both functionally and histologically. It meant according to the Ayurveda, the kidney are made up of the "Rakta and Medha"dhatus. Protective effect of methanolic extract of *Millingtonia hortensis* Linn. was studied against chloramphenicol induced oxidative stree and nephrotoxicity in mice. It is concluded that the phytogenic antioxidants play an important role in the ameliorating action in the recovery of damaging effects caused by the chloromycetin.

Keywords
Antioxidants, Chloramphenicol, Flower extract, *Millingtonia hortensis* Linn, Renal profile parameters.

Biography

I pursued my M.Sc. Zoology from K.B.C. N.M.U. Jalgaon in 1999. Ph.d. from K.B.C.N.M.U., Jalgaon in 2016-Topic-"Protective role of medicinal plants against chloramphenicol in Mus musculus", I published 13 Research Papers in High Indexed International Research Journals, 5 Seminars, given 5 Oral Presentation, Be the Judge in Science Exhibition in Higher Secondary School.

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Curcumin Nanoparticles: A Potential Therapeutic Agent for Liver Diseases

Suman Shekhar
Sister Nivedita University, India

Abstract

Liver damage are caused by oxidative stress induced by different kinds of factors like drugs, alcohol, environment pollutants, viral infections and dietary components. Although the management of liver diseases has reached great advancements, millions of peoples are still suffering from acute or chronic liver diseases. Curcumin is a bright yellow-colored phenolic compound that was initially isolated from Curcuma longa L. (turmeric) rhizomes. Curcumin has been found to be anti-diabetic activity, anti-inflammatory activity, anticancer activity, anti-aging, anti-fertility, hepatoprotective activity, anti-HIV, ophthalmic activity, antioxidant activity, antibacterial activity, antidepressant activity, cardiovascular and neurodegenerative diseases. Results have shown that curcumin exhibits remarkable protective and therapeutic effects of oxidative associated liver diseases through various cellular and molecular mechanisms. Nanoparticle of curcumin have shown to have enhanced activity through increased capacity of penetration. In this review, the method of synthesis and potency of the curcumin nanoparticle and their application as protective and therapeutic agents for several liver diseases have been discussed.

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Biography:

I am Suman Shekhar from Dhanbad, Jharkhand, India. I have completed my bachelor's in Biotechnology with distinction marks in the year 2020. I have worked on a project 'RNA isolation from SARS -CoV-2' during my last academic year of bachelors. Currently I am following my inner call and pursuing Masters in Biotechnology from Sister Nivedita University Kolkata, India. I aspire to hold a degree of PhD and do some significant research works in the field of Immunology, Drug delivery, nanomedicines, Genetics (Gene editing, CRISPR) and in Molecular Biology. These subjects have fascinated me a lot and I want to work on them to make human's lives easier.

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Using Homosoil to Enrich Sparsed Soil Data Infrastructures Globally

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Sakshi Shastri
Deptt. Of Agricultural Extension, Indra Gandhi Agricultural University,India.

Abstract

Numerous areas in the world is suffering from sparse soil data availability. This results in inefficient implementation of soil related studies and an inadequate recommendation to improve the soil management strategies. Commonly this problem is tackled by collecting new soil data which are used to update legacy soil surveys. We use homosoil to obtain the new soil data for the area of interest. Homosoil are the soils that can be geographically distant but with similar soil forming factors. We identified that homosoil for the area of interest by using distance metrics in the space spanned by the environmental covariates depicting the soil formation. We consider the areas as homosoil and test the transferability of the digital soil data by calibrating a digital soil mapping models using data within the homosoil area. The soil maps produced with homosoils data have a similar pattern than the existing maps. The approach developed here shows that opportunity of transferring soil data across the globe to populate areas with relatively sparse soil data. The concept of homosoils is promising and we envision future applications such as transfer of agronomic and experimental results on soil management practices between areas considered as homosoils.

Keywords

Homosoil , Soil data, Soil management, Areas, Sparse.

Biography

I am Miss. Drishty Katiyar, pursuing Phd. in Soil Science & Agricultural Chemistry from Chandra Shekar Azad University of Agricultural and Technology, Kanpur (U.P.). My nationality belongs to India, Hindu religion. Citizenship status is single. I am able to handle multiple tasks on a daily basis. I use creative approach to solve problems. I wrote many articles, abstracts, chapters, research papers etc. I attended many conferences, seminars, workshops National and International. I have done training and Internship from ICAR affiliated Institutes, National service Scheme and also IIT Hyderabad. I am dependable person who is great at time management. I am always energetic and eager to learn new skills. I am flexible in my working hours, being able to work evenings and weekends. Always coming up with new innovative ideas. Co-workers rely on me to be on time.

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Identification and expression analysis of *MYB* transcription factor genes in Tomato (*Solanum lycopersicum*) in response to fungal pathogens *Sclerotinia sclerotiorum*

Purabi Mazumdar
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Wong Gwo Rong
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Abstract

MYB transcription factors are widely implicated in several plant regulatory process, including defence responses. However, little is known about the role of *MYB* genes associated with *Sclerotia sclerotiorum* defence response in tomato. In this study, we identified 10 tomato *MYB* genes (*SLMYB*) with predicted defence function using phylogenetic analysis. The responses of 10 selected *SLMYB* genes to the infection of *Sclerotinia sclerotiorum* were analysed in three tomato cultivar (cv. Redrock, tropical and Superstar) with high to moderate susceptibility by quantitative real time-PCR (qRT-PCR) and defence enzyme analysis. *SLMYB* genes showed differential expression in response to *S. sclerotiorum* infection. Transcript abundance of 10 *MYB*s showed a positive association with the activity of defence enzyme including phenylalanine ammonia-lyase, chitinase, ß-1-3-glucanases and polyphenol oxidases. The activity of defence enzymes was observed to be higher in 21 days post inoculation (dpi) compared to 7 and 14 dpi. This study provides information on *MYB* genes associated with fungal defence in tomato, which can serve as candidates for developing resistance lines in tomato or other host plants against *S. sclerotiorum*.

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Biography

Dr. Purabi Mazumdar is a senior lecturer at Centre for Research in Biotechnology for Agriculture (CEBAR), University of Malaya, Malaysia. She obtained her PhD from Indian Institute of Technology Guwahati (IITG), India. Her lab investigates the abiotic and biotic stress response mechanism in crop plants such as banana and tomato using bioinformatics, biochemical, molecular and functional genomic approaches. Her current research focuses on ultraviolet mediated plant protection against plant pathogen and understanding the response mechanism of the plant to UV exposure. Her research interest also lies in smart farming.

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Isolation of Plant Growth Promoting Rhizobacteria in Paddy Rhizosphere

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SRM Institute of science and technology, India
Dr.S.Iyyapan
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Abstract

TPlant growth-promoting rhizobacteria (PGPR) are bacteria that can support the growth of host plants besides living in the rhizospheric region through a variety of mechanisms. The goal of this study was to determine the effects of indigenous plant growth-promoting rhizobacteria (PGPR) isolated from rice rhizosphere on rice plant growth at the early stage. By 16S rDNA sequence analysis, isolates with the ability to produce ammonia and antifungal activity against plant pathogens, as well as phosphate solubilizing activity, were obtained and identified.

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Biography

I am completed B.Sc., degree in Biotechnology and Msc., degree in Biotechnology from SRM Arts and Science College, Kattankulathur, Tamil nadu. My Msc., project "Isolation of Bioactive Compound From Soil Microbial Community Enriched With Vercompost And Determinination Of Antibacterial Activity Against Clinical Pathogens". Currently Doing Phd in Biotechnology from SRM Institute of science and technology College, Kattankulathur.

Irrigation Management in Crop Production

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Dr. K. Prabhavathi
Horticulture Polytechnic College, Sri Konda Laxman Telangana State Horticultural University, India

Abstract
Irrigation is an artificial application of water to crops or plants, especially when an agricultural field does not get enough water through rains. Having perhaps the largest irrigated area in the world, India faces acute water scarcity. According to the Food and Agriculture Organization of the United Nations, irrigation contributes to about 40% of the world's food production on 20% of the world's crop production land. Approximately 95% of the irrigated land is surface irrigated in India and China. The United States and Pakistan each have about 20 Mha of irrigated land. All other countries each have less than 10 Mha of irrigated land. We need to adopt irrigation methods that help in not only in saving freshwater, but also provide sufficient water to plants for growth.Irrigation is one facet of the inputs which need to be carefully managed so that profits are maximised. If there is no water, there is no growth. Method of application of irrigation is an important part of the management process. Despite the importance of water to production, there has been minimal care taken to maximize the efficiency of irrigation, and hence, crop yield and quality. Maximizing efficiency need not be simply maximizing yield for every litre of water applied. The timing, frequency and quantity of application can all have a marked effect on crop yield quality and time of harvest. Irrigation practices can be improved if a range of important factors are taken into account. These are: crop type, crop water requirements, climatic conditions, soil type, water quality, method of irrigation.

Keywords
Efficiency, Crops, Irrigation, Production and Management

Biography

Dr. G. Chandrashekhar is a lecturer in Horticulture Polytechnic College, SKLTSHU. Published more than 10 'Full Length Research Publications' (Author and Co-Author) in various Journals (> 4 NAAS rating). Published more than 5 'Book Chapters' in various Publications (Author and Co-Author). Published various 'Popular Articles' in Telugu and English (Author and Co-Author). Published various 'Abstracts' (Poster and Oral) in National and International Seminars. Attended various 'Online Webinars' (National and International) and received participation certificates. Attended various 'Online Training Programmes' (National and International) and received participation certificates. Received Best Research Scholar Award in 2019 in IX World Food and Agriculture Congress (WFAC-2019), Best Oral Presentation Award in 2019 in IX World Food and Agriculture Congress (WFAC-2019 , Innovative Article Award in March, 2021 in Agriculture & Food: e-Newsletter, Kalp-Best Ph.D Thesis Award, 2021 in 4th National Annual Conference on ATTAHEBS-2021, Bharath Jyothi Shishank Pratibha Samman Award, 2021 in MVLA Guru Samman Conference & Awards-2021 and India Prime Top 100 Teacher Award, 2021 in Foxclues India Prime Top 100 Professors, Teachers and Reseaarchers Awards – 2021. He is the reviewer in International Journal of Creative Research Thoughts and have Membership in United Lightening Vision Association.

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Observation on Foraging Hymenopterans of Vegetable Crop Species across West Bengal, India

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Abstract

Bees are known to share an old and intimate relationship with flowering plants. Pollination success of the hymenopterns are known to contribute towards the developing a healthy and sustainable ecosystem. Importantly, bee pollination contributes towards 1/3rd of global food production. Vegetable crop species are known to serve as profitable resource base for a majority of such pollinators. Thus the present study was attempted to document the foraging hymenopterans on vegetable crop species (*Solanum melongena*, *Solanum lycopersicum, Abelmoschus esculentus, Brassica oleracea* var. *capitata*, *Capsicum annuum*, *Raphanus sativus*, *Allium cepa, Cucurbita maxima, Luffa acutangula, Momordica charantia, Trichosanthes anguina, Coccina grandis*) across West Bengal, India. hymenopteran species were observed foraging on crop species during this entire study period. A synchrony between peak blooming period of flowers and maximum number of foraging hymenopterans was noted. Greater visitation rate of *Xylocopa, Bombus orientalis, Apis* and *Megachile* on flowering plant species were observed. Additionally, *Xylocopa* and *Apis* spend longer duration of time foraging on flowers of crop species. Importantly, some amount of information is said to be transmitted from the flowering plant species to the hymenopterans during their foraging behaviour. Significantly, quantification of information content of such communication (interpreted using Shannon index and Brillouin function) would constitute an important aspect of this study.

Keywords

Brillouin function, hymenopterans, Shannon index, vegetable crops

Biography

Dr. Panchali Sengupta had completed her PhD in Zoology from West Bengal State University in 2016. Her thesis topic was related to the resource utilization and distribution of butterflies in West Bengal. Her research interests include Insect-Plant Interaction, Enviromental Biology and Conservation. She has participated in a number of International and National Seminar and Webinars and has more than 10 publications.

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Genetic Evaluation and Nutritional Study of Baby Corn and Green Ear for Fodder Purpose

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Department of GPB, BAU, Ranchi and Jr-Scientist cum-Asst , India

Abstract

Green forages are rich and cheapest source of carbohydrates, protein, vitamins and minerals for dairy animals. To meet out the needs of the ever increasing livestock population the production as well productivity of fodder is to be increased. Maize crop has an important place in the food grain basket of our country and is the third most important versatile food grain crop due to its importance in food, feed, specialty corn, starch etc. In this experiment, twelve inbred lines were crossed with each of five testers in a line×tester design to evaluate combining ability and heterosis to identify promising hybrids of green cob and baby corn for fodder purpose with various characters like, 50% tasseling, 50% silking, 75% dry husk, grain yield, no. and weight of green ears, green fodder yield, dry weight, pericarp thickness and various quality parameters. The resulting F_1s along with three checks and seventeen parents were evaluated in two environments during *kharif* 2010 and *rabi* 2010-11. Crosses excelled their perspective parents in performance for most of the traits studied. BQPM-2 among the parental lines and BAUIM-2 among the testers were identified as the best general combiners for grain yield and green fodder yield. Whereas among the hybrids, BAUIM-4×HKI-163 and BQPM-2×HKI-163 were identified as potential cross combinations for grain yield and green fodder yield. However for quality parameters, BQPM-2×BAUIM-2 exhibited the highest magnitude of economic heterosis for calcium, crude fibre, dry ash and reducing sugar contents while for iron and phosphorus contents, BAUIM-4×HKI 163 exhibited the most desirable value of heterosis. So the crosses (BAUIM-4×HKI 163) and (BQPM-2×BAUIM-2) can be utilized for developing high yielding hybrid varieties as well as for exploiting hybrid vigor. While for baby corn as feed for animals, several quality parameters like moisture, calcium, iron, phosphorus, total soluble sugars, crude fibre and dry ash contents) baby corn yield were studied. The inbred line BAUIM-4 followed by BQPM-2 was a good general combiner for all

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the quality traits and baby corn yield. Single cross BQPM-2 × BAUIM-2 had positive significant specific combining ability effects for all the quality traits and baby corn yield

Biography

Presently working as Asst Prof-cum-Jr Scientist, Forage Breeding, LPM, RVC, BAU, Ranchi, Jharkhand, India. Received University Topper and Best Student Award" in MSc.Ag.(PBG) on the topic: Correlation and path analysis studies in hybrid rice (*Oryza sativa* L.). Received Department of Science and Technology Fellowship for PhD. Programme under the "INSPIRE Scheme for 1st Rank Holder of the University" on the Topic: Genetic Evaluation of Hybrids for Baby corn, Green ear, Yield and Quality of Maize (*Zea mays* L.). Received "Chancellor's Gold Medal" for highest O.G.P.A. for PhD. Programme during Convocation of BAU, Ranchi in 2015. HOPE Fellow of Japan Society of Promotion of Science (JSPS) at 5th HOPE Meeting with Nobel Laureate organized by Japan Society For Promotion of Science (JSPS), Tokyo, Japan during 26th Feb to 2rd March, 2013.

Research Publications: 25

Books: 2

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Yield Potential, Quality Characters and Economic Efficiency of Sunflower Hybrid *(Helianthus annuus L.)* as Influenced by Pressmud Based Vermicompost and Foliar Nutrition

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Department of Agronomy, Faculty of Agriculture,Annamalai University, India
S. Elankavi
Department of Agronomy, Faculty of Agriculture,Annamalai University, India

Abstract

Field investigation was carried out at the Annamalai University Experimental Farm, Department of Agronomy, Annamalai Nagar, Tamil Nadu, India to study the Yield potential, quality characters and economic efficiency of sunflower hybrid *(Helianthus annuus L.)* as influenced by pressmud based vermicompost and foliar nutrition. The experiment was laid out in randomized block design (RBD) with eleven treatments *viz*., absolute control, recommended dose of fertilizer alone and graded dose of fertilizer along with different sources of vermicompost with foliar nutrition of zinc and boran. The effect of integrated nutrient management (INM) practices on growth attributes, yield attributes and yield of crop was critically studied under sunflower hybrid. An effort was also made to study the quality characters of sunflower *viz*., oil content, crude protein and oil yield kg ha^{-1} and economic efficiency of sunflower. The growth and yield components of sunflower hybrid *viz*., plant height, leaf area index, dry matter production, number of days to fifty per cent flowering and head diameter, number of seeds $head^{-1}$, percentage of filled seeds $head^{-1}$ and seed yield were strikingly impressive by 75 % RDF + pressmud vermicompost at 2.5 t ha^{-1} + foliar spray of $ZnSO_4$ @ 0.5 % + Borax @ 0.2 % on 40 and 60 DAS. The same treatment also significantly registered higher values of oil content, crude protein content and oil yield kg ha^{-1} and return $rupee^{-1}$ invested. It was followed by 75 % RDF + FYM vermicompost @ 2.5 t ha^{-1} + foliar spray of $ZnSO_4$ @ 0.5 % + Borax at 0.2 % on 40 and 60 DAS. Significantly lowest values for growth attributes, yield attributes and seed yield and quality character of sunflower and return $rupee^{-1}$ invested was recorded in the control (No fertilizer and no organic manure).

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Keywords
Organic manures, Vermicompost, Sunflower, Growth, Seed yield, Oil content, Oil yield and Return rupee^{-1} invested

Biography
Dr. S. Ramesh, Associate professor, Department of Agronomy, Faculty of Agriculture, Annamalai University, Tamil Nadu, India. I have 18 years of experience in both Teaching and research in Agricultural field. I also 6 years of experience in NSS Programme Office, Annamalai university. I have published 25 research papers in National and International journal. I also written four books and I have completed two research projects. I also participated and presented many research papers in National and International seminar and conference.

Studies On Genetic Variability and Character Association for Seed Quality Parameters in Wheat [Triticum aestivum L. Em. Thell]

Jay Singh
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Abstract

The present investigation was carried out for wheat (Triticum aestivum) in the laboratory department of Seed Science and Technology (GPB), Acharya Narendra deva University of Agriculture and Technology, Kumarganj, Ayodhya (U.P.). The 33-wheat germplasm/varieties including three checks from Completely Randomized Design (CRD) with three replications during 2020-21. The study was conducted for thirteen seed quality parameter 1000-seed weight (g), seed length(mm), seed width (mm), shoot length (cm), root length (cm), seedling length (cm), speed of germination, seedling dry weight (mg), first count, final count, germination (%), vigour index-I and vigour index-II. The magnitude of genotypic and phenotypic coefficient of variation were detected for vigour index-I, shoot length (cm), seed width (mm), root length (cm), seedling length (cm) indicating there by substantial scope for improvement in seed quality and subsequent selection and high estimate of heritability with high genetic advance in percent of mean were detected for seed width (mm), shoot length (cm), root length (cm), seedling length (cm), 1000-seed weight (g), seed length (mm), speed of germination, seedling dry weight (mg). The lowest and highest mean performance for vigour index-I detected in AKAW-4901(1540) and DM-7 (3637.00), respectively. The general mean for this character was found 2106.44. the highest and lowest mean performance of vigour index-II observed for TL-3012 (14507) and AKAW-4901 (10824) general mean performance was observed 12631.55. The vigour index-II showed highly significant positive genotypic correlation with the final count (1.165), root length (0.867), first count (0.552) and highly significant positive phenotypic correlation with root length (0.828), final count (0.564).

The direct effect studies were originated for phenotypic path with vigour index-I highly significant direct association with seedling length (0.3182), shoot length (0.2944), root length (0.2671) final count (0.1423). The highly significant direct effect for genotypic path with vigour index-I was found in seedling length (0.3296), root length (0.2823) and shoot length (0.2257). The highly significant positive phenotypic direct effect for vigour index-II with seedling dry weight (0.7022), shoot length (0.4782) and first count (0.1903). The highly significant positive genotypic direct effect for vigour index-II was

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observed with the seedling dry weight (0.7545), germination percentage (0.3572) and shoot length (0.3399). high significant indirect phenotypic and genotypic path observed in shoot length and root length with vigour index-I and seedling length, seedling dry weight observed with vigour index-II. The above results apparent that some information considered here will use in future for improving wheat genotypes and developing new varieties.

Biography

Jay Singh, I am live in India. I have completed High School at Nehru Memorial Inter College Bhilwal Barabanki U.P., Intermediate at Gramyanchal Inter College Haidergarh Barabanki U.P., Graduation Degree at Sri Mahesh Prasad Degree College Bindauva Mohanlal Ganj Lucknow U.P. (University of Lucknow, Lucknow) and Post-Graduation in Seed Science and Technology at Acharya Narendra Deva University of Agriculture and Technology Kumarganj Ayodhya Uttar Pradesh. I attended training on National training on Seed production techniques in Agronomical and horticultural crops and many other short courses like Integrated Pest management, From Climate Science to Action, Discover best practice farming for a sustainable 2050.

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Commercial Production of in Vitro Regenerated Dendrocalamus Hamiltonii Bamboo to Combat Environmental Issues

Neha Rafique

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Abstract

Bamboos are known to mitigate climate change, have enormous capacity to reduce the usage of fossil fuels resulting into the safeguarding of available forests and gradually increasing the green coverage. The species of *Dendrocalamus hamiltonii* is best known to restore degraded lands. The inherent characteristic of bamboo to grow at the fastest rate leads majorly in reduction of carbon emission. Besides multifarious commercial utilities of bamboos, it is known to sequester maximum carbon, undoubtedly sustainable source of energy owing to its renewable nature. In order to procure *D. hamiltonii* bamboo shoots as sustainable resource, its commercial production is required. The technique involves incubating sterilized explant on synthetic culture medium. The abiotic conditions are fixed with certain variations for the proper growth of *in vitro* raised plantlets. Periodic transfers of microshoots are performed. Adventitious rhizogenesis and acclimatization were the challenging stage, however, our protocol has been refined for its commercial production. Primary hardening of plantlets is performed in Green house wherein high temperature and humidity is needed. The root trainer mixture employs cocopeat, vermiculite, soilrite, organic compost or FYM. The seedlings are further transferred to polybag and stored in (50%) Net/shade house for further hardening.

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Biography

I have completed my post graduation from University Dept. of Botany, TMBU, Bhagalpur, Bihar and was Gold medalist. I have been working as research scholar in Plant Tissue Research-cum-Production Laboratory, TNB College campus, TMBU. The standardization of protocol for the commercial production of D. hamiltonii has been accomplished with the help of my supervisor. The successful regeneration of thousands of *D. hamiltonii* bamboo seedlings has been performed.

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DSR Method: An Eco-Friendly Approach For Paddy Cultivation

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Archana Verma
Department of Soil Science and Agricultural Chemistry, BAU Sabour, India
Ajmul Hasan
Department of Agronomy, IARI, India

Abstract

As we know population increasing day by day, consequently demand of food also increasing and we have limited natural resources. Rice is staple food of more than 50%world population. About 30% world rice harvest in South Asia. Conventional method of paddy cultivation i.e transplanting after puddling, not only deal with intensive water use, but also cumbersome and laborious, lowering water tables scarcity and deteriorating soil health. Now days DSR method in which direct seeding of rice seed are sown in the field, rather than transplanting seedling from the nursery. It aims to sow short duration and HYVs with help of DSR machine and gaining acceptance due to low input demand. It have certain advantages like saver labour, less drudgery, easily maturity crop, low production cost, better soil physical property and less methane emission which is part of GHGs. Although DSR method can help in reducing CH_4. But aerobic soil condition also increases N_2O Emission. Developing water management practices in such a way that redox potential remains in -100 to -200Mv this can minimise emission of both CH_4 and N_20. An overall effect of DSR Method on Global warming potential depend on the total amount of greenhouse gases i.e CO_2, CH_4, N_20. DSR method can helpful in reducing one source of GHG emission. Therefore DSR method is technically, economically feasible, eco-friendly for environment by reducing greenhouse gases which have harmful impact on human beings, vegetation etc.

Keywords

Direct seeding rice (DSR) method, Greenhouse gases, Transplanting, Redox potential, Emission.

Biography

Kushal Sachan is a PhD. Research scholar at C.S Azad University of Agriculture & Technology, Department of Soil science and Agricultural Chemistry.

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Entamopathogenic Nematodes as a Biological Agent against Insects Pest

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Iruthaya Kalai Selvam. S
Assistant Professor of Zoology, Post Graduate and Research Centre of Zoology, Jayaraj Annapackiam College for Women (Autonomous), India.

Abstract
Due to the negative impact of pesticides on environment, agriculture need for biological alternatives to control the pest in the field. Chemical pesticides are more restricted, costly and less effective. The discovery of EPN act as a good biological solution for the control of variety of insects pests in the agriculture. The EPN's Heterorhabditis and Steinernema carries symbiotic bacterium Photorhabdus and Xenorhabdus respectively. Injective juveniles of EPN's attack the host and release the bacteria. In the host blood bacteria multiplies and release the toxic substances with kill the insect within 24-48 hours by septicemia. EPN species are lethal and simple to use which can be mass produced either by in-vivo or in-vitro (solid or liquid). High virulence of nematodes is produced only by in-vivo method. Galleria mellonella is used as a host insect to culture EPN's via the white trap method. This is low-cost technology method with low start-up costs which involves the production of EPN's by using live insects, which are highly susceptible and easily available at a lower cost.

Keywords
Galleria mellonella, Entamopathogenic nematodes, white trap method

Biography

A.Vinothini doing Ph.D from Jayaraj Annapackiam College for Women (Autonomous), Affiliated to Mother Teresa Women's University Kodaikanal.

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Characterization of natural seed fibers obtained from Cochlospermum Religiousm Plant - An innovative future material

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Department of Botany, Yogi Vemana University, India

Abstract

The present study reports an innovative endeavor to study the physical, chemical, and microstructure characterization of cochlospermum religiosum seedpod fiber. Fiber morphology is analyzed using scanning electron microscopy at an accelerating voltage of 10 kV. It place on carbon tape attached to a 1cm diameter holder. The density of fiber is determined by 25ml of specific gravity bottle, xylene is used as a immersion liquid. XRD result shows that the fiber nature is semi-crystalline, and it shows, the presence of cellulose is Iß with a crystallinity index value of 48%. Microstructural analysis shows these fibers had hollow structures with thin fiber walls and large lumen. Differential Scanning Calorimetry (DSC)and Thermogravimetric(TGA)analyses reveal that fiber has unique properties specifically capable of withstanding high temperature. It has good thermal insulation and low density, lightweight, utilized for various technical applications towards textile product development, absorbent material for oils, metal ions, dyes, and sound-absorbent insulating material for future generations.

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Keywords
Cellulose/Lignocellulose fiber, Cochlospermum religiosum fiber, low density, lightweight material, Natural seed fiber, Thermal insulation.

Biography
Completed B.Tech in Civil Engineering From CEC Engineering College (JNTUK affiliated), Ponnur, Guntur, A.P and M.Tech in Structural Engineering from Vignan's Foundation For Science, Technology & Research- Vadlamudi, Guntur, A.P. Pursuing Ph.D in Civil Engineering from Vignan's Foundation For Science, Technology & Research- Vadlamudi, Guntur, A.P.Worked as Assistant Professor in Department of Civil Engineering at St. Mary's Group of Institutions, Guntur. One year Worked as Assistant Professor in Department of Civil Engineering at Vignan's Lara Institute of Technology& Science, Guntur. UG projects handled: 02. Her area of research interest is Material Science, Composite Materials, Microstructure Characterization of Fiber Reinforced Composites, Innovative Natural Fiber Materials. Published 4 papers in National, International and ASCE India Conference 2020.Published 5 papers in Scopus Indexed Journals.Published one Indian Patent on innovative bio fiber material.

Evaluation of Anticancer activity of *Rotheca serrata* in MCF-7 and Neuroblastoma SH-SY5Y Cancer Cell Lines.


Jayashree Pandurang Gadade
Shivaji University, India.
Swaroopa Amit Patil
Shivaji University, India.

Abstract

Rotheca serrata (Lamiaceae), a highly medicinal plant is used as an antidote for snakebite and the plant possesses medicinal properties like hepatoprotective, antitussive, antioxidant, anticancer, neuro-protective, used in rheumatoid arthritis and is also a α-glucoside inhibitor. This work aimed to study the anticancerous effect of Rotheca serrata (root and leaf) on cancer cell lines MCF-7 and Neuroblastoma SH-SY5Y. The results indicated that the Methanolic extract of Rotheca serrata (root and leaf) showed high anticancer activity. Different concentrations of plant extracts (25, 50, 100, 200, 400 µg/ml) were used to study the anticancerous activity, amongst which the significant results were obtained for 400 µg/ml concentration (both root & leaf). Effective anticancer activity against MCF – 7 breast cancer cells was shown in methanoilc extracts (leaf and root both) as IC 50 values, in root (IC 50 value= 61.8259 ± 7.428 µg/ml) and in leaf (IC 50 value = 78.1497 ± 6.316µg/ml). The MTT assay in case of neuroblastoma (SH-SY-5Y) cell lines revealed that 400µg/mL concentration of leaf methanol extract showed effective inhibition of cancer cells with IC 50 value 37.8462 ± 2.957 µg/ml as compared to root methanol extract which showed 57.0895 ± 2.351 µg/ml.

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Biography

Ms. Jayashree Pandurang Gadade: Research scholar pursuing Ph. D. under the guidance of Dr. Swaroopa Patil (corresponding author). Have qualified the NET-JRF, SET, GATE examinations in 2017. Working in the area of Plant Tissue Culture in medicinal plants.

Dr. Swaroopa Amit Patil : M. Sc. Ph.D. working as an Assistant Professor in the Department of Botany, Shivaji University, Kolhapur. Engaged in the research related to Plant Tissue Culture, Plant Biotechnology.

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Consumption Pattern of Exotic Vegetable Consumers- A Comparative Study between Dharwad and Hyderabad Cities of India

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University of Agricultural Sciences, India
Shobha Nagnur
University of Agricultural Sciences, India
Geeta Tamgale
University of Agricultural Sciences, India

Abstract

Vegetables constitute an important component of the human diet and play an important role in food and nutritional security of the ever growing population of our country. The word exotic vegetables connote that which is not native to our country. The common exotic vegetables in India are Broccoli, Lettuce, Bok Choy, Brussels sprouts, Parsley, Leek, Zucchini, Kale, Cherry Tomato, Celery, Asparagus, Chinese cabbage, Red Cabbage, Coloured Capsicum etc. The present study was carried out in the year 2019-20 in Dharwad (Karnataka) and Hyderabad cities (Telangana) with a sample of 120 consumers (60 - Dharwad and 60- Hyderabad). Structured interview schedule was used to collect the data. The results revealed that most of the consumers consume broccoli, lettuce, coloured capsicum and cherry tomato as salads, on pizza toppings, curries and pulav forms. Respondents cook these vegetables mostly by boiling and sauting method. The data also showed that there was a significant difference in consumption pattern between UAS staff (Dharwad) & PJTSAU staff (Hyderabad) and PJTSAU staff (Hyderabad) & Hyderabad outliers. Source of information and source of motivation were positively significant in consumption of these vegetables by consumers.

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Biography

I am Navya an extension student doing my PhD in Extension Education and Communication Management from Professor Jayashankar Telangana State Agricultural University (https://www.pjtsau.edu.in/) which is one of the top 10 Agricultural Universities in India which is accredited by ICAR, New Delhi, Government of India that works on the guidelines of Land Grant Institutes. I had completed my masters in Extension and Communication Management (Community science) which comes under social science from University of Agricultural Sciences, Dharwad, India (http://www.uasd.edu/) and secured gold medal in my department.

Morphological characterization, genetic variability and divergence studies in okra [*Abelmoschus esculentus* (l.) moench.] under valley conditions of Garhwal Himalayas

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Abstract

Okra is a member of the malvaceae family and is one of the most traditional and popular vegetables in India which is extensively cultivated in summer and rainy season. The present investigation was carried out during the summer season, 2019 to evaluate 26 genotypes of okra including one check cultivar Arka Anamika for different horticultural traits under valley conditions of Garhwal Himalayas. The experiment was laid out in Randomized Block Design with three replications, and the data was taken from 5 randomly selected plants of each replication. A good amount of variation was found in Morphological Characterization analysis (22 qualitative traits studied), among the different traits under study, green leaf colour between veins, yellow flower petal colour and erect fruit position showed 100% frequency. Seventeen genotypes were found superior then check cultivar in terms of yield. Among them, Hisar Naveen, Hisar Unnat, Kashi Kranti, Kashi Mohini, Kashi Pragati, Kaveri, LC-6, Pusa A-4, Pusa Sawni, and VL Bhindi-2 recorded higher fruit yield and also performed better for other yield attributing traits hence, these genotypes can be recommended for cultivation in the valley conditions of Garhwal, Himalayas, or they can be involved in the further breeding programme for the development of superior varieties or hybrids of okra. The phenotypic and genotypic coefficients of variation were found high for the number of primary branches per plant, yield per plot and yield per hectare. High heritability estimates coupled with high genetic gain were observed for plant height, number of primary branches per plant, internodal length, pedicel length, number of seeds per fruit, yield per plot, yield per hectare, total soluble solids and shelf life indicated that these traits are under additive gene

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effects and are more reliable for effective selection. The correlation analysis showed that the number of fruits per plant, average fruit weight, fruit length, moisture content, fruit diameter, seed index and petiole length were significantly and positively associated with yield per hectare both at the genotypic and phenotypic level. Path coefficient analysis revealed that plant height, pedicel length, fruit length, days taken to first fruit set, number of primary branches per plant, pedicel diameter, petiole length, days taken to first germination, petiole diameter and average fruit weight had a positive direct effect on yield per hectare. Further, based on D^2 analysis the twenty-six genotypes were grouped into six divergent clusters and hybridization between cluster VI and II can be utilized for getting the superior recombinants in segregating generations by crossing between the genotypes of these clusters.

Keywords
Okra, Morphological characterization, Genetic Variability, Correlation, Path and D^2 analysis.

Biography
My Name is Udit Joshi I have done my graduation in Horticulture from Veer Chandra Singh Garhwali Uttarakhand University of Horticulture and Forestry, College of Horticulture Bharsar Pauri Garhwal, and post graduation from H.N.B. Garhwal University (A Central University) Srinagar (Garhwal) Uttarakhand, India. I have a good experience in article, research and review paper writing and have written some of them in peer reviewed journals as well in different agriculture and allied fields. I have also attended a lot of national and international conferences and worked in a few International collaborations as well. Currently I am working as a Senior Research Fellow in the Plant Pathology Division College of Forestry Ranichauri V.C.S.G.U.U.H.F Bharsar Uttarakhand. My long term goal is to do some activities by making a society in welfare of farmers particularly of hilly regions of the country keeping sustainable goals in mind. I also want get enrolled in doctoral programme in a reputed university and gain some research opportunities at foreign universities and do some brain-gain activities. I am also actively involved in guiding undergrad students for their skill development and career development aspect.

Application of 28-Homobrassinolide in NaCl stress management in chick pea

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Abstract

Brassinosteroids (BS) constitute a class of steroidal plant hormones, which are implicated in diverse physiological and metabolic responses in plants. They also play an ameliorative role in plants under various abiotic and biotic stress conditions. In this study, the impact of one of the most stable BS analogues i.e. 28-homobrassinolide (HBL) on growth, nodulation and N fixation in chickpea was investigated. The seeds of chickpea (*Cicer arietinum* L.) cv. KPG-59 were treatment with sodium chloride (NaCl) (1.0 or 10 mM) and/or HBL (10^{-8} or 10^{-6} M) for 8 hours each. The seeds were sown in earthen pots and the plants were allowed to grow under natural conditions in a net house. The plant samples were collected at 60 day stage to assess different parameters namely plant dry weight; number, fresh and dry weight of nodules; leghemoglobin content and nitrogenase activity of nodules; N and sugar content in nodules; nitrate reductase activity in leaves; GS, GOGAT and GDH activities in nodules and leaves, and seed yield (at harvest). The plants resulting from the seeds soaked in NaCl exhibited a reduction in these parameters proportionate to the concentration of the salt. HBL treatment, in absence of the salt stress boosted the parameters under consideration and also mitigated the inhibitory effect of NaCl, where the higher concentration (10^{-6}) was more effective, both in presence and absence of stress. Moreover, seed yield was also increased upto 25% compared to the control, at harvest.

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Biography

Dr. Barket Ali is working as assistant professor in higher education department of Jammu and Kashmir government. He obtained M. Sc., M. Phil. and Ph. D. in botany (Specialized in plant Physiology) from the renowned Aligarh Muslim University, Aligarh. He was selected by Jammu and Kashmir Public Service Commission as assistant professor in 2007. His thrust area are Phytohormones, abiotic stress physiology and management. He has published 35 research articles in the national and international journals of repute. He has also contributed ten chapters in edited books by renowned international publishers and also edited one book. He has presented research papers in a large number of symposia and conferences. He was also given young scientist award by Department of Science and Technology, Government of India under fast track young scientist scheme.

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Weed Management in Rice-Wheat Cropping System in Vertisols under Conservation Agriculture

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Abstract

food crop production. The weeds were kept under control by less than two hand weeding at the stage of 25-30 and 60 DAT respectively to control weed in rice crop and in wheat combination of pre-emergence herbicide pendimethalin Post-emergence herbicide @1 kg a.i.ha^{-1} and Glyphosate @1.23 kg a.i. ha^{-1} was applied. Post-emergence application of Imazethapyr @ 100 gm a.i. ha $^{-1}$ was done at 30 DAS to control weeds emerged after sowing. Hand Weeding and weed puling also control weed infestation when weeds are less effective. The dominant weed flora of transplanted rice crop field was like wild rice (*Echinochloa colonum)*, Barnyard grass (*Echinocloa crusgalli*), Motha (*Cyperus rotundus*), false daisy (*Eclipta alba*), and Bermuda grass (Cynodon dactylon), Hazrdana (Phyllanthud niruri), Badi dudhi (Euphorbia hirta). And wheat Bathua (*Chenopodium album*), Krishnneel (*Anagallis arvensis*), Chatari matari (*Lathyrus aphaca*), Satyanashi (*Argemone maxicana*) etc. Likewise, monocot weeds viz., Gehusa/Gullidanda / Gehun ka mama (*Phalaris minor*), wild oats (*Avena fatua*), doob (*Cynodon dectylon*) is a major weed. Rice-wheat system in Vertisols produced higher rice (Pusa basmati-1) yield (5495 kg ha-1) with higher net monetary returns (NMR) of 111346.5 Rs ha-1. Field experiments with 6 reapplications and 4 treatments were evaluated during 2018 to 2019 on Vertisols having clay loam texture, medium to deep black in color Soil at Indian Institute of Soil Science Bhopal, Madhya Pradesh, India during *Kharif* (June to September) and *rabi* (Oct to Jan). The cropping systems were evaluated for their productivity, and to assess their effect on the soil organic carbon content and soil available nutrient. Rice in the cropping system improved the soil physical condition, increase bulk

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density in soil. While most rice is grown in the kharif (wet-season, roughly July-December), rice is also grown in the Rabi (dry-season, roughly January-June) in many states of India.

Keywords
herbicide, Post-emergence, Vertisols

Bibliography
My name is Mrs. Bharti Parmar. I am pursuing PhD in agronomy from the RVSKVV, Gwalior (M.P.). Currently doing my research work form ICAR- IISS Bhopal (M.P.) under the project Conservation Agriculture. I am from Gwalior, I had completed my schooling from Chanderi (M.P) and graduation and post graduations from Gwalior, (M.P)

Milicompost: A Natural Hidden Treasure in Vast Measure for Organic Farming

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Abstract

Soil macrofauna contribute an important function of disintegration and decomposition of dead plants and animal litter into rich organic matter in the ecosystem by natural process. Among the macrofauna, invertebrates like earthworms, millipedes etc., are found to be major saprophagous fauna involved in process of decomposition. They participate in many ecological functions *viz*., soil turnover, aeration and conversion of nitrogen and phosphorous, incorporation of organic matter into the soil, *etc.* When compared to vermicompost, millicompost is not explored much, but recently it is identified as a potential source of organic matter. Present work is carried out in the University College for Women, Koti in order to study the morphological behaviour of millipedes available in the campus as well as physical and physiochemical analysis of millicompost in different zones during the monsoon 2019-2021. The millipede identified as *Trigoniulus corallines* and they found in aggregates in abundance throughout the sprawling campus. Physical and physiochemical analysis were done with the compost pellets and compared with the normal compost of different zones. The growth of the saplings, height of the plant and length of the plants after 3 weeks of germination were measured and recorded. Physicochemical characters were significantly higher in millicompost than the normal compost.

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Increase in concentration of N, P, K, Ca and Mg was observed in compost produced with the help of millipede than normal compost. The narrow C/N ratio was also observed in millicompost than normal compost. Keeping in view of the above functional attributes, millicompost can be explored as an alternative to both normal compost as well as vermicompost. As there is richness in species biodiversity in millipedes and also because of availability of raw materials in the form of weeds rich with nutrients, paves the way for enrichment of soil fertility in a natural and lucid manner.

Key words
Millipedes, *Trigoniulus corallines,* Millicompost, Physiochemical characters, Compost pellets.

Biography
Dr.P.R.Sushama working as Assistant Professor in the department of Botany at University college for women, koti, Hyderabad, Telangana State. I did my Post Graduation in cytogenetics as specialization and achieved distinction . ph.D programme in Plant Biotechnology with area of specialization as Plant Tissue Culture. Publications in National journals and Abstracts published in various Seminars and Conferences. Chaired and Co-chaired certain science sessions during Conferences and Seminars . Worked as Convenor Women's Cell,Ladies Hostel Warden, NSS Programme Officer ,presently as Director Green Belt. Served at various levels as a Mentor for sessions, and as Jury member for Inspire science programmes both at state and district levels. Project evaluator and Jury member for Telangana state council of Science and Technology(TSCOST) both state and district level. As a keynote speaker for Wipro earthian programmes and Project evaluator. Associated with(Telangana State Biodiversity Board TSBB) participated and organized various programmes as Program Co -ordinator.

Conservation Of Agrobiodiversity for Sustainable Agriculture

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Abstract

Diversity plays a major role in sustainable development of Agriculture. Since domestication of plants started for food by man, many of the plant species are domesticated, acclimatized. The genetic base of the crops is narrowed to attain uniformity and stability according to the specific environment habituated. Artificial selections by man are made in development of the varieties suitable to our needs. Homozygosity and homogeneity are aimed in most of the technology employed in development of crop varieties. Utilization of diverse germplasm is the back bone of any successful plant breeding programme in development of sustainable and stable varieties. The diversity in germplasm available in present crops are becoming narrow now-a-days. Natural selection, mutation is a continuous process leading to new variations. The hilly areas with forest are a good source where natural selection takes place frequently due to uninterruption of humans. The hilly areas are to be explored and wild germplasm have to be conserved. Strategies are to be taken up to conserve the wild germplasm ex-situ and in-situ. The local tribal communities conserve the wild germplasm from age old. These communities are to be supported to conserve the natural in-situ germplasm. Explorations are to be extensively made to conserve the germplasm in Agriculture, Horticulture, medicinal plants, tree crops etc. The natural habitats uninterrupted by humans are much to be tapped to conserve the Agrobiodiversity. The conserved bio-diverse germplasm to be evaluated for the qualitative, biometric, nutritional, biotic and abiotic stresses. The strategies to be worked out with the recent biotechnological tools, to utilize the useful parameters of the germplasm for sustainable development. The biotechnological tools may be helpful in breaking the barriers of the wild germplasm to get them into utilization useful for mankind. Many of the medicinal properties of the species are untapped in the natural wild habitat. There is danger of losing the biodiversity with the changing climate. The

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sustainability of the present agriculture only depends on the development of the varieties and technologies which sustain the changing climate. The utilization of diverse wild germplasm is one of the strategies for sustainable agriculture technology suitable to climate resilience. Tapping of the agrobiodiversity is the need of the hour for the sustainability.

Biography

Dr.A.B.M.Sirisha (* corresponding author) author of abstract working as plant breeder (scientist) in the Acharya N.G.Ranga Agricultural University at Agricultural Research Station Yellamanchili, Visakhaptnam Dt.531035;Andhra Pradesh. The university mainly works for the welfare of the farmers in developing the agriculture technology. The university works with three wings of Research, Teaching and Extension. I am working under Research wing in Genetics and Plant Breeding department working in oil seeds Sesame and groundnut. I worked in collecting, maintenance and utilization of the diverse germplasm in the breeding programme.

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Enhancement of Fruit Shelf Life by Suppressing N-Glycan Processing Enzymes

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Abstract

In a globalized economy, the control of fruit ripening is of strategic importance because excessive softening limits shelf life. Efforts have been made to reduce fruit softening in transgenic tomato through the suppression of genes encoding cell wall–degrading proteins. However, these have met with very limited success. N-glycans are reported to play an important role during fruit ripening, although the role of any particular enzyme is yet unknown. We have identified and targeted two ripening-specific N-glycoprotein modifying enzymes, α-mannosidase (α-Man) and ß-D-N-acetylhexosaminidase (ß-Hex). We show that their suppression enhances fruit shelf life, owing to the reduced rate of softening. Analysis of transgenic tomatoes revealed ≈2.5- and ≈2-fold firmer fruits in the α-Man and ß-Hex RNAi lines, respectively, and ≈30 days of enhanced shelf life (Figure-1 A & B). Overexpression of α-Man or ß-Hex resulted in excessive fruit softening. Expression of α-Man and ß-Hex is induced by the ripening hormone ethylene and is modulated by a regulator of ripening, rin (ripening inhibitor). Furthermore, transcriptomic comparative studies demonstrate the down- regulation of cell wall degradation and ripening-related genes in RNAi fruits. It is evident from these results that N-glycan processing is involved in ripening-associated fruit softening. Genetic manipulation of N-glycan

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processing can be of strategic importance to enhance fruit shelf life, without any negative effect on phenotype, including yield.

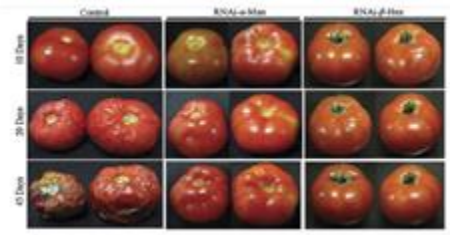

Fig- 1(A): Transgenic (T0) and wild-type (control) fruits were harvested at pink stage and stored at room temperature (22–24 °C in 55–60% relative humidity). The progression of fruit deterioration was recorded by time-lapse photography.

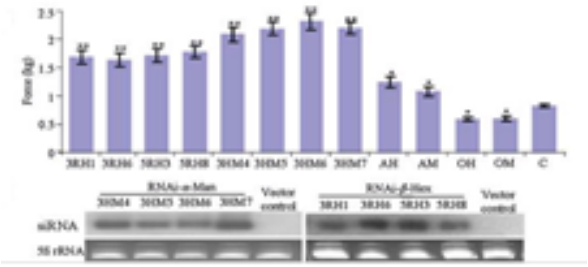

Fig- 1(B): Texture analysis of α-Man and ß-Hex suppressed or overexpressed T0 generation transgenic fruits, done at 10 days after pink stage. 3RH1, 3RH6, 5RH3, and 5RH8, RNAi lines of ß-Hex; 3HM4, 3HM5, 3HM6, and 3HM7, RNAi lines of α-Man; AH and AM, antisense lines of ß-Hex and α-Man, respectively; OH and OM, overexpression lines of ß-Hex and α-Man, respectively; C, wild-type control.

Biography

Mr. Koushik Halder is currently pursuing his Ph.D. in Biotechnology (2018-present) from Jamia Hamdard University, New Delhi, under the supervision of Prof. Asis Datta and Prof. M. Z. Abdin. The main focus of his research is on how to reduce the post-harvest losses to secure the food security of the nation. He is the recipient of 'Gold Medal' for securing first position in his master's degree (M.Tech in Biotechnology) from Maulana Abul Kalam Azad University of Technology (Formerly known as West Bengal University of Technology) in 2016. He has also been awarded with the DST-INSPIRE Fellowship for his Ph.D. program. Before that he had been working as a Junior Research Fellow in Prof. Asis Datta's lab for two years (2017-2018) in the project entitled "Expression analysis and construction of RNAi cassette of Solanum lycopersicum ripening related gene III (SlRRGIII)"

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Potential of agro-organic formulations in enhancing growth of *Triticum aestivum*

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Arpita Gupte
School of Biotechnology and Bioinformatics, D. Y. Patil Deemed to be University, India.

Abstract

Indian economy has been positively impacted by the increase in production of cereal crops over the years. The use of organic fertilizers is recently being considered as a measure to control ecosystem health. Due to certain limitations, a combinational application approach of these organic inputs is preferred. The combined application of these organic formulations could stimulate enhanced growth, quality and yield of crops by contributing beneficial microorganisms, macronutrients, micronutrients, and metabolites. The current study focuses on evaluating the influence of four different agro-organic formulations (OF1 to OF4) on the growth of *Triticum aestivum* under (wheat) *in vivo* conditions. Two different methodologies like seed priming and direct application of these organic formulations at different concentrations (1:50, 1:100, 1:150 and 1:200) were used. Sterile distilled water was used as control for all the treatments. Controlled conditions like temperature 24 ± 2 ºC and light 1000 lux were maintained throughout study. Growth parameters like germination percentage, seed vigour index, shoot length and root length were estimated after eight days. Wheat seeds primed with agro-organic formulations showed highest germination percentage and seed vigour index (98% and 2216) for OF4 while, shoot and root length (13.10cm & 11.23) for OF1. In direct application method, maximum germination percentage, seed vigour index, shoot and root length (100%, 1205, 10.23cm, 11.23cm) was observed for OF1.Statistical analysis showed a positive correlation on utilization of agro-organic formulations on the growth of wheat.

Keywords

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Agro-organic formulations, seed priming, *Triticum aestivum*, germination, seedling length, vigour index.

Biography

Smita Jadhav is a PhD Student at School of Biotechnology and Bioinformatics, D. Y. Patil deemed to be University, India. She received a Bachelor's degree in Biotechnology from Elphinstone College, India and a Master's degree in Biotechnology from St. Xavier's College, India.

Climate change impact on soybean yield of NIK: Adaptation strategies through crop simulation model

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Abstract

Soybean [*Glycine max* (L.) Merrill] is known as 'golden bean' and 'miracle crop' of the 20th century. The global average surface temperature will increase by between 1.4 and 5.8 ◦C in this century (UNEP 2006), which could potentially have negative impacts on important agronomic crops, including soybeans. Climate change with rising temperature and erratic rainfall patterns is threatening the productivity and profitability of the crops. Hence modeling study was carried out to study effect of climate change on soybean yield and to find adaptation measures. Calibrated and validated model was run under current (1988-2018) and projected climate (2020-2050) of NIK. Under rainfed and potential (no moisture stress) conditions across 9 dates of sowing. The results showed that simulated yield under projected climate dropped by only 2 per cent as compared to rainfed yield under current climate but under potential condition the yield improved by 33 per cent indicating there is an opportunity to improve soybean yield with better management of water requirement and crops sowing on 2nd fortnight of June simulated higher yield.

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Biography

I am Lavanya P. M.sc (Agri.) graduate from the University of Agricultural Sciences Dhrawad, Karnataka. In Agricultural Meteorology as main subject. I received my Bachelor's degree in Agriculture from the University of Agricultural Sciences Raichur. Karnataka, India.

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Cadmium toxicity and tolerance mechanisms in bio-energy crop *Ricinus communis*

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Abstract
Cadmium (Cd) tolerant genotype of bio-energy crop Ricinus communis (castor) can be used for re-vegetation of cadmium contaminated land. In this study, Cd toxicity and tolerance mechanisms of castor were studied. Ten different castor genotypes were screened on the basis of fresh and dry biomass of leaves and roots. Seeds of these castor genotypes were germinated and then grown in vermiculite saturated with Hoagland nutrient solution at control and different Cd stress conditions. WM was the most Cd tolerant genotype whereas GCH2 was the most Cd sensitive one. Reduction in fresh and dry weight of leaves and roots of Cd treated GCH2 seedlings were observed compared to control whereas no significant change was observed in case of WM. The levels of different photosynthetic parameters were reduced significantly in GCH2 compared to the control whereas no significant change was observed in case of WM. An enhanced oxidative stress was observed in GCH2 genotype due to Cd treatment. Thus, it can be inferred that reduced level of photosynthetic parameters and increased oxidative stress could be responsible for sensitivity of GCH2 genotype whereas cadmium tolerant behaviour of WM could be due to maintenance of high level of photosynthetic parameters and lower oxidative stress.

Key words
cadmium, castor, fresh weight, dry weight, photosynthetic parameters, oxidative stress

Biography

Ms. Rini Rahul is pursuing her Ph.D. from Department of Life Sciences at Central University of Jharkhand, India. She is currently working with Dr. Manoj Kumar (Ph.D. & PDF), Associate Professor, Central University of Jharkhand. Her research is in plant molecular biology and biochemistry. She is studying the tolerance response of Ricinus communis in response to heavy metal stress. She has research experience in pulp and paper mill effluent treatment. Her area of interests in research are Phytoremediation, Plant molecular biology, Plant biochemistry, Plant stress biology, Bioenergy crops, and Effluent treatment.

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Effect of Natural compounds to stop Respiratory syncytial virus

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Abstract

Current COVID-19 effects are forcing us to think about other deadly viral disease. Respiratory syncytial virus (RSV) is one of them. Every year thousands of children lost their lives due to respiratory disease which is occur by this RSV. Now days, bioactive compounds shows enormous effect on many deadly diseases and shows excellent therapeutic effect. In this study, we have identified five bioactive compounds from plant which will be used in treatment of RSV. Molecular docking on protein was done by Autodock. Hydrogen was added and routable bonds were fixed in preparation time of protein for docking. All those compounds shows their non-toxic nature which are evaluated by Lipinski Rule of Five. Molecular docking on RSV matrix protein and surface glycoprotein with those bioactive compounds shows very promising results. Between all those compounds Baicalein appears as a lead compound. It shows -8.1 Kcal/mol in case of matrix protein and -7.9 kcal/mol in case of surface glycoprotein of RSV. Due to its availability and non-toxic nature it can be used in treatment of RSV. AS it derived from plant, it also has very less side effects than chemical drugs.

Keywords

Respiratory syncytial virus, Bioactive compounds, Molecular docking, Lipinski rule of five

Biography

Debanjan Mitra is a research scholar at Dept. of Microbiology, Raiganj University, India under the supervision of Dr. P.K. Das Mohapatra. He is currently working on bioinformatics (Structural biology, Protein analysis, molecular docking, quantum mechanics, immunoinformatics, cheminformatics and programming). He has more than 25 research publications as journal articles and book chapters. He has also received 4 international and 2 national awards.

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Effect of different levels of nutrients and plant Hormones on post harvest changes in GrandNaine

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Associate Professor Department of fruit crops Tamil Nadu Agricultural University Tamil Nadu India.

Abstract

Banana (*Musa Spp.*) is an important fruit crop in India. Bananas are grown in more than 150 countries, producing 105 million tonnes of fruit per year. The global production of banana is around 102028.17 thousand tons of which India contributes 29.19%. Main banana growing states are Tamil Nadu, Maharashtra, Gujarat, Andhra Pradesh and Karnataka. The large number of varieties grown in India, the triploid cultivar 'Grand Naine' belonging to the 'Cavendish' group (*Musa* AAA) is the most popular variety among growers and consumers, particularly in Gujarat and Maharashtra for domestic and export markets. The area under this variety has increased in Tamil Nadu in recent years due to its high yielding capacity of 75-100 t per ha as compared to only 40-60 t per hectare in traditional cultivars. While production technology to obtain high yield has been standardized, some challenges especially post-harvest losses, lack of scientific handling and packaging systems remain unsolved. Unfortunately, 25 to 30 % of the harvested fresh produce deteriorates due to spoilage each year, with losses being higher in the tropical regions (Magdaline *et al*., 1998). Since banana is a climacteric and highly perishable fruit, application of pre harvest and post-harvest treatments becomes necessary to extend the shelf-life with minimal post-harvest losses. Efficient and rational use of the fertilizers is imperative not only for obtaining more yields per unit area on a sustainable basis, but also to ensure safe food and conserve the environment. The study was undertaken at the Department of Crop Physiology, Agricultural College and Research Institute, Tamil Nadu Agricultural University, Coimbatore. The first field experiment was conducted at College Orchard. which is geographically situated between 11°02' N latitude and 76°57' E longitude at an altitude of 426.76m above MSL. Tissue culture planting materials of banana cv. Grand Naine were procured from M/s Jain Irrigations, Udumalpet, and planted at the spacing of 1.8 x 1.8 m during 4th week of September, 2012 in the field laid out with drip system. **Randomized Blocks Design**: For morphological characters and

physiological and biochemical parameters. **Split Plot Design**: For bunch yield and yield components, quality characters and post harvest parameters. The post harvest change in terms of fruit firmness was enhanced to the highest level of 8.02 and 8.04 kg cm^{-2} as the result of application of 300:50:300g NPK/plant/ year and bunch spray of brassinolide 2 ppm which also resulted in the lowest ethylene production of 2.18 and 1.96 µl $kg^{-1}h^{-1}$. Similarly lowest pectin methyl esterase activity of 1.20 and 0.30 mg protein min^{-1} and the lowest polygalacturonase activity of 3.04 and 3.27 mg protein min^{-1} were recorded in fruits. As the result of this effect, the shelf life of the fruit was extended remarkably.

Biography

P.Indhumathi has completed Ph.D in the department of Crop Physiology in Tamilnadu Agricultural University Coimbatore during the year of 2017. She has published in several national and international conferences and 7more articles published in national and international journals. She has awarded in Agricultural Sciences under Student Research Project Scheme sponsored by the **DBT** and **Tamil Nadu State Council for Science and Technology." –M.Sc Programme (2008-2010)** and **young scientist award in IRDP group of journals.** More Innovative person and implement the creative ideas. Positive attitude, Good leadership quality, Good communication skills Ability to work alone as well as in group Very much eager to work sincerely, Hard worker.

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Keep-It-Fresh – Innovation That Reduces Post Harvest Loss and Increases Shelf-Life of Fruits and Vegetables By 22% to Decrease Food Wastage Dramatically

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Director Technical, Hi- Tech International, India

Abstract

Ethylene is a hydrocarbon gas that has no odour and is invisible to the naked eye. Ethylene gas is a plant hormone that controls the growth and development of the plant. Fruit and vegetables release this hormone in the form of gas as they mature. Ethylene gas, commonly known as the "ageing hormone," affects the ripening of fruit and can also cause it to die, which happens when fruits, vegetables, flowers, and plants are injured in some way. When utilized to speed up the ripening of fruit, the ethylene gas can be beneficial, but it can also be harmful when it yellows fruits and vegetables, destroys buds, or promotes abscission in decorative specimens. The created ethylene gas acts as an auto catalyst for ripening, resulting in greater sugar levels and microbial deterioration of the fruits. The KIF Shelf life extension solutions are based on cutting-edge technology that absorbs damaging ethylene gas, excess moisture, and causes volatile bacterial inhibition (VBI), slowing the ripening and rotting process while also extending the shelf life of packed and stored fruit. All KIF solution types are environmentally safe and biodegradable, and they do not affect the environment because they are based on chemical-free technology. KIF is made up of natural minerals (clay) that dissolve fully on their own after 2-2.5 months due to natural phenomena hence minimizing the carbon footprint. The goal is to eliminate all post-harvest losses and set a new standard in the shelf life extension industry. The innovation increases shelf life, revenue, market reach and reduces post-harvest loss in turn promoting and improving the sustainable livelihood of the producers through them realizing a better price point.

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Biography

Mr. Sidharth Sareen is a Polymer & Chemical Engineer who has worked as a research scientist with Reserve Bank of Australia, Plastic Currency Notes Division, MontellPolyolefins (Shell Petrochemicals) & CSIR for Polymers in Australia and has invented the natural plant-based coating with virus reduction technology which is currently getting patented in the US.

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Adravya Chikitsa-Ayurvedic perspective for healthy life

Dr. Shivani Sanjeev Gavande

Professor – Kayachikitsa, Bhaisaheb Sawant Ayurved Mahavidyalaya, India

Abstract

TAyurved is science of life. *Ashtang* Ayurved tells us various important aspects of life. Those things which are not visible by our natural senses are also playing important role in the universe. Our body which is visible-*Moorta-Shtool*, needs the treatment as per *Samanyavishesh Siddhhant*, *Sthoolchikitsa*; but mind is *Sookshma* so it needs *Sookshmachikitsa*.This concept is well elaborated in Ayurved as Adravya Chikitsa, where no internal medicine as such is used to treat a disease but presence of some kind of things give nano- effect on mind and thus treat psychosomatic disorders of mankind. This Nano Technology of Ayurved became spiritual tradition since ancient time. We should be able to differentiate between superstitions and super spirituality and its use to cure the certain conditions which give pain - *Dukkha* to human beings.

Keywords

Ayurved, Nano effect, mind, spirituality, Adravya chikitsa, Health.

Biography

Dr.Shivani Sanjeev Gavande is Ph.D. in Ayurveda, Masters in Kayachikitsa-Ayurveda and a Bachelor of Ayurvedic Medicine and Surgery.

She has received Hari Ananta Gold Medal for her research work under Ayurvidya, New Delhi.

She is the Professor of Kayachikitsa at Bhaisaheb Sawant Ayurved Mahavidyalaya, Sawantwadi, Maharashtra, India and has been faculty and examiner of Maharashtra University of Health Sciences, Nasik. She has 20 years of clinical and academic experience.

Dr.Shivani Sanjeev Gavande has been resource person in various Ayurveda workshops and seminars. Also she has shared her valuable clinical experiences and Ayurvedic concepts in various national and international conferences. She has published her research articles in peer reviewed national and international journals. She was invested Ph.D. for her work in Enhancement of quality of life in patients having cancers of female genital organs.

She has been worked for teenagers since last 22 years and socially active for women empowerment and environmental awareness.

She is healer and councilor of mindfulness program, *satwavajaya chikitsa* also volunteer of Aniruddha Academy of Disaster management.

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Life Style Disorder : Dysmenorrhoea through Ayurvedic Perspective

Dr.Rakesh Nayak

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Abstract

In Present day life women are effectively facing challenges encountered by stressful life resulting in Mithya Ahar, Vihar, over exertion & malnutrition this may direct to vikruti in "Rutuchakra" leading to various vyadhi allied to menstruation. Ayurveda recommends rutucharya and dinacharya, diet modulation and yoga in the form of asanas, Pranayam and meditation on a regular basis so as to alleviate dysmenorrhoea effectively. Similarly, Uttarbasti,Garbhashya balyaaushadhi,anuvasan or matra basti can also be administered if necessary.

Keywords

Ayurveda, Kashtartava, Dysmenorrhoea

Biography

Dr. Rakesh Nayak, Lecturer, Department of Prasuti tantra evum Streeroga, Mandsaur Institute of Ayurved Education &Research,Mandsaur Madhya Pradesh 458001. 06 month experience as a Asst.Professorin PTSR Department at MIAER &Mandsaur Ayurved hospital ,Mandsaur , Madhya Pradesh. 02 Years 06 Month Experience as a Ex.Asst. Professor in PTSR department At G. J. Patel institute of Ayurvedic Studies & Research and S. G. Patel Ayurveda Hospital & Maternity Home, New V. V. Nagar Anand Gujarat . 3 Year Parul Ayurved Hospital and Parul Sevashram Hospital Training in PTSR dept. And Obstetrics and Gynaecology department Limda, Vadodara Gujarat.1 Year Experience Hospital Training in Govt. Hamidia Hospital, Associate with Gandhi Medical College Bhopal (MP). 2 Year Experience Medical Officer in Sparsh Multispecialty Hospital and Shukan Multispecialty Hospital Vadodara Gujarat.

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Biosorption of Heavy metals by *Bacillus cereus sys1* isolated from oil-contaminated site

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Dr Arpita Gupte
School of Biotechnology and Bioinformatics, D. Y. Patil Deemed to be University, India

Abstract

Elevated concentration of heavy metals in soil has been a major concern for the environmentalists. It not only causes risks to the environment but also to the human health globally. Bioremediation is one of the most studied method for reducing the accumulation of these hazardous metals. In the present study biosorption of copper (II) and cadmium (II) was studied using Bacillus cereus sys1 cells. The biosorption capacity of the cells has been studied as a function of pH, initial metal concentration, cell concentration and contact time. Batch studies showed that the *B. cereus sys1* cells could adsorb up to 90% of copper, with 100 ppm initial metal concentration at pH 5 with total contact time of 90 min whereas for cadmium also almost 90% of adsorption was observed in 180 min for 30 ppm initial concentration at pH 7. For both the studies 10 mg/ml cell concentration was used. The study demonstrated correlation with Langmuir model. The adsorption capacity was found to be 225 mg/g for copper and 34.67 mg/g for cadmium. As per the Freundlich isotherm, value of 1/n, was found to be 0.5114 for copper and 0.2492 for cadmium indicating a normal and favourable adsorption intensity. The surface adsorption of metals was confirmed using SEM with EDS. It revealed that the cells grown in the presence of oil have a better capacity for metal ion adsorption.

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Biography

Dr Sheetal Sonawdekar did her Ph.D. in Biotechnology from School of Biotechnology and Bioinformatics, D. Y. Patil Deemed to be University, Navi Mumbai. Her thesis title was "Bioremediation of oil and heavy metals from contaminated soils using *Bacillus cereus* culture isolated from contaminated soil". She is currently working as an Assistant Professor and have a working experience of 17 years at the University.

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Role of *Shallaki Niryas Ksharsutra* in the management of *Arsha* (hemorrhoids): a case study

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Abstract

Hemorrhoids are abnormal mass of dilated engorged blood vessels occur internally in the anal canal or around the anus. Hemorrhoids can be internal or external or protruding from inside to outside of the canal and having symptoms which include bleeding, itching and pain. Guda region (~anus) is Sadyopranahar Marma (~vital areas) and it is well known for its chronicity and difficult management. Arsha (Hemorrhoids) is being described by all the classics of Ayurveda. Acharya Sushruta even placed this disorder in the "Ashta Mahagada" (~eight fatal conditions). Vitiated Dosha localize in Gudavali (~folds), Pradhana dhamani (~vein) and Mansdhara kala (~layers) vitiates Twak (~skin), Mansa (~muscle), Meda (~fats) and Rakta (~blood) resulting in the Annavaha sroto dushti (~obstruction of digestive system). Acharya Sushruta mentioned four types of treatments in Chikitsa sthana of Sushruta samhita as 1) Bheshaj 2) Kshar 3) Agni 4) Shastrakarma. Snuhi kshira Ksharsutra (~medicated Seton) is considered as the standard Ksharsutra although it has been a landmark success but has certain drawbacks like pain, burning sensation and itching associated during therapy. So, through this study we find out a safe, simple, effective treatment without any complication. Present research work was planned to evaluate effect of Shallaki niryas Ksharsutra ligation in the management of Arsha. Study observed that Shallaki niryas Ksharasutra ligation gives relief in pain and burning sensation.

Keywords

Arsha, Marma, Ksharsutra, Hemorrhoids.

Biography

Shailesh dhenge Assistant professor, Shalya tantra, Om Ayurveda college and hospital betul Madhya Pradesh.

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Effects of Biochar on Soil Microbial Community Composition Using Plfa Profiling- A Review

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Variampally Sankar Harikumar
Department of Post Graduate Studies and Research in Botany, Sanatana Dharma College, India.

Abstract

Biochar is a charcoal like substance produced from organic biomass after pyrolysis. Biochar act as a good soil conditioner by increasing microbial activities, soil nutrition and soil structure. Soil microorganisms are involved in litter decomposition and soil nutrient mineralization which is important in the sustainable development of plants and trees. The functioning of an ecosystem is controlled by biogeochemical cycles driven by microorganisms. The cell membrane of all microorganisms is composed of phospholipids that are easily metabolized after the cell death. Hence, phospholipid fatty acid (PLFA) analysis of microorganisms can be used for the characterization of living microbial communities. PLFA analysis is a lipid based, culture independent biochemical technique. Therefore, PLFAs can be used for the characterization of soil microbial community structure that are not able to cultivated by the conventional methods. This profiling act as a biological register of soil health, and as an indicator of soil response to different field management systems like biochar.

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Biography

Myself Nivya Mariam Paul, Research Scholar, Research and Development Centre, Bharathiar University, Tamil Nadu. Currently I am working as HOD and Assistant Professor at Mar Athanasius College, Kothamangalam, Kerala. My area of research interest are microbial biodiversity, environmental and agricultural microbiology. Currently working on how biochars effect on microbial population in soil. I have worked on projects which involves isolating microorganisms from soil and plants. Screening and purification of enzymes, anti-microbial agents and other products from the microorganisms

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Degradation of perchlorate with phenol as a sole carbon source by a newly isolated strain pseudoxanthomonas sp. From acclimated sewage sludge

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Abstract

The hazardous effects of perchlorate anion on human health have been a concern of the environmentalists world-wide for last two decades. Though the chemical and physical techniques have been applied to remediate perchlorate anion from contaminated water and waste water, bioremediation has got several advantages over other methods being ecofriendly and because of the transformation of perchlorate to harmless chlorine gas through bacterial enzymes in anaerobic system. Though the bacterial transformation have been well studied, the choice of carbon source have been a key to make the process cost-effective. In the present work, phenol have been used as sole carbon source for the perchlorate biodegradation as reported for the first time. Newly isolated bacterial species *Pseudoxanthomonas* sp. isolated from a sewage sludge consortium was found to reduce perchlorate while taking phenol as electron acceptor. Therefore, phenolic industrial wastewater can be treated along with perchlorate contaminated water by the isolated strain, which makes the treatment process suitable for effluents emerging from two different industries. The growth as well as perchlorate degradation was analyzed in batch system along with degradation profile of phenol by the microbial culture. The effect of the co-pollutants (nitrate, chlorate, nitrite, phosphate) was also considered as part of the present study where nitrate was found to be the most significant. Perchlorate was significantly removed by the culture involving subsequent phenol degradation by the culture in a continuous packed bed system anaerobically from synthetic waste water.

Keywords

Perchlorate, phenol, *Pseudoxanthomonas*, biodegradation, co-pollutants.

Biography

Dr. Atreyi Ghosh was graduated from one of the esteemed Institution of Asia, Presidency College, Kolkata with Botany as the major subject. She was fortunate to be supervised by the supreme faculties of that time. She pursued her Masters from University of Kalyani in Molecular Biology and Biotechnology with population genetics as her special paper.

Her research interest started with Bio degradation of inorganic pollutants which she started at Indian Institute of Technology, Guwahati. Her research area was flourished under the guidance of multidisciplinary faculties from Science and Engineering stream at IIT, Guwahati. She also worked with researchers at NEHU (North East Hill University), Meghalaya, India and enriched her research work with heavy metal removal from contaminated wastewater.

Her research team here at SNU is dedicated in formulation of nan-based bio fungicide, identification of *Fusarium* suppressive soil, phytoremediation and cyanobacterial removal of textile wastewater and bio-leaching of rare earth elements.

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Biochemical and Physiological response of *Brassica juncea* and *Nephrolepis exaltata* in Mercury spiked soil

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Dr. S. Avudainayagam
Department of Environmental Sciences, Tamil Nadu Agricultural University, India

Abstract

The current study elucidates the physiological and biochemical variations in response to various mercury concentration in Indian mustard (*Brassica juncea*) and Boston Fern *(Nephrolepis exaltata)*. Results revealed a 17.3 and 10.4 per cent reduction in chlorophyll content of *B.juncea* and *N.exaltata* between the 20 mg kg^{-1} Hg-treated plants and the control suggesting reduced photosynthetic rate. Albeit these parameters were affected, plants tolerated 20 mg kg^{-1} without any visual phytotoxicity symptoms. Gaseous parameters were inversely proportional to the mercury concentration whereas oxidative stress indicators and antioxidant enzymes exhibited a positive correlation. An average increase of 38 per cent Proline was observed in both plants. In *B.juncea* and *N.exaltata*, Average catalase activity and peroxidase activity ascended from 2.35 to 5.12 min^{-1} g^{-1} and 3.26 to 6.80 min^{-1} g^{-1}, and 0.23 to 1.17 min^{-1} g^{-1} and 0.30 to 1.27 min^{-1} g^{-1}, respectively. Thus, an effective metabolic defense and adaptation assures the phytoremediation potential of these plants in mercury contaminated soils.

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Biography

Ph.D Scholar at Tamil Nadu Agricultural University. My doctoral research is on "Bioaccumulation, Bioavailability and phytoremediation of mercury in mercury spiked soil" under the guidance of Dr. S. Avudainayagam. Major research interest was to study the efficient and eco-friendly technique in heavy metal remediation and restoration of contaminated ecosystems. Awarded with Student-SRF and Student-JRF fellowship during my doctoral and masters program at TNAU, Coimbatore. Qualified in both UGC and ICAR-NET. Published papers in UGC approved journal. Acted as a resource person in scientific writing skill workshop organized by TNAU. Published a chapter in "Agriculture in a nutshell – A competition explorer".

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Anticancer Efficacy of Chitosan/Biogenic silver nanoparticle conjugate: An in vitro analysis on MDA MB cell lines

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Mar Athanasios College For Advanced Studies, India

Abstract

TCancer nanomedicine is an emerging area with an innovative approach towards cancer therapy. In this study, the anticancer efficacies of chitosan-stabilized biogenic silver nanoparticles (Ch/Bio-AgNPs) were evaluated by *in vitro* studies on MDA MB (human adenocarcinoma) cells. The IC 50 for Biogenic silver nanoparticles (BioAgNP) and Ch/Bio-AgNPs were studied by MTT assay, antiproliferative and cell apoptosis assay, ethidium bromide/acridine orange double staining assay, RO analysis, DNA fragmentation study, Caspase 7 and 9 assays and flow cytometry. The housekeeping gene ß-actin was used in the gene expression analysis by real-time PCR. On MDA MB cell lines the IC 50 values calculated towards Bio-AgNP and Ch/Bio-AgNP was 4.346±0.6381 µg/ml and 0.9851±0.0065 µg/ml, respectively. The results clearly depicted the efficacy of Ch/Bio-AgNPs as an anticancer agent with characteristic apoptosis and up-regulation of p53 and p38 genes.

Keywords

Chitosan/Bio-AgNP conjugate;MDA MB cells; Antitumor activity; RT PCR

Biography

Completed PhD in Microbiology from School of Bioscience, Mahatma Gandhi University and her thrust area of research was nanotechnology. She filed an Indian patent and received a start-up award offered by Mahatma Gandhi University. Published many well received research articles and book chapters in national and international journals. Currently working as an associate professor at School of Biosciences, Mar Athanasios College For Advanced Studies, Tiruvalla (MACFAST).

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Role of Gold Nanoparticles in Preventing Biofilm Formation

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Abstract

Biofilm formation has been reported for nearly two decades but the exact procedure of its formation is yet to be unraveled. Extensive studies have shown that biofilm formation is exhibited by microorganisms when they attach to and grow on surfaces and produces extracellular polysaccharides. The biofilm forming microorganisms include among others *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Staphylococcus epidermidis* and *Candida albicans*. Biofilms found on medical instruments causes serious infections. Urinary tract infection from catheter is a very common infection. Biofilm also form on tooth enamel that results in tooth decay. Proper treatment by antimicrobial agents is hampered because these biofilm-associated microorganisms form a very tough layer around the surface they are attached to which makes the antimicrobial agents impenetrable. Recently, nanotechnology is becoming a focus of interest in solving this problem. Metal nanoparticles (MtNPs) like gold nanoparticles (AuNPs), silver nanoparticles (AgNPs) are playing a vital role in the proper delivery of antimicrobial agents. Owing to their extremely small size, MtNPs can travel easily through the tough layer of biofilm and deliver the antimicrobial agent, thereby degrading the layer. In this review, we have summarized the application of AuNPs and antibiotic-conjugated AuNPs to prevent biofilm formation.

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Biography

Debanita Mandal is currently a Bachelor's student of the Department of Microbiology at Sister Nivedita University. She has previously worked on "Biosynthesis of gold nanoparticles by bacterial strains isolated from soil samples". She is enthusiastic in researching on the field of nanotechnology and its application in the microbial world. She plans to pursue a Master's degree in Microbiology after graduation.

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Production and Screening of enzymes by Polyethylene (LDPE) degrading bacteria

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Abstract

Biodegradation of synthetic polymers especially LDPE is of great importance and widely used in day-to-day life. Since environmental pollution with polyethylene and other plastics has become a severe global problem. The alternative plastic waste treatment method is enzymatic degradation. Enzymes are produced by microorganisms during the degradation process. The main objective of this work was to produce the enzymes from polyethylene degrading microorganisms. About eight bacterial and eight fungal cultures were identified and were potential for degradation. Out of these bacterial and fungal cultures, bacteria were selected for the study as they degraded the polyethylene completely.
Bacterial species could produce enzymes like lipase, esterase, amylase, protease, xylanase, and Dextranase with different levels of activity in the plate. With the observation of the results, we could conclude that bacteria are potential for polyethylene degradation.

Key Words

Polyethylene, lipase, esterase, amylase, protease, bacteria, biodegradation.

Biography

GEETA D is a research scholar in the Dept of Microbiology, at Davangere University, Davangere, Karnataka, India under the guidance of Dr. Ramalingappa. He has received his bachelor's degree from University of Mysore, Karnataka, M.sc and Ph.D. from Kuvempu university, shimogga.

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Biological Synthesis of Silver Nanoparticles by Vibrio Sp., and Its Applications

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Department of Microbiology, S.F.R. College for Women, India
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PG & Research Department of Microbiology, V.H.N. Senthikumara Nadar College,India

Abstract

TSilver nanoparticles are increasingly used in various fields of biotechnology and applications in the medicine in this work, we describe a cost effective and environment friendly technique for green synthesis of silver nanoparticles from 1mM AgNO3 solution through the *Vibrio sp*., MP10 culture produced through sewage sample. Synthesized nanoparticles are characterized under UV-Vis spectroscopy at the range of 350-420nm. The peak showed at 400 nmIn SEM micrographs, silver nanoparticles were almost spherical, single (200 nm) or in aggregates (2 µm), attached to the surface of biomass. The reaction mixture was successfully optimized to increase the yield of silver nanoparticles production. The chemical groups studied using FT-IR analysis. Microbial synthesized silver nanoparticle showed zone of inhibition against isolated Gram positive (*Bacillus sp.,)* and Gram negative (Enterobacter *sp., Pseudomonas sp., E.coli., Shigella.,*) bacteria.

Keywords

Silver nanoparticles; *Vibrio sp.*; Biosynthesis; antimicrobial activity

Biography

B. Harinathan working as Assistant professor, PG & Research Department of Microbiology, V.H.N. Senthikumara Nadar College, Virudhunagar, Tamilnadu, India.

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Biosynthesis and Various Application of Blue Green Pigment Pyocyanin

Ratnadeep Chowdhury
Sister Nivedita University, India

Abstract

Pyocyanin is a secondary metabolite of P.aeruginosa and also a redox active phenazine compound. In the synthesis of pyocyanin by P.aerusginosa there are seven genes amongst them only two genes phzM and phzS are responsible for the conversion of phenazine-1-carboxylic acid to pyocyanin. The pigment synthesis is dependent on the iron concentration as well as the low phosphate concentration within the medium which stimulates the synthesis of pyocyanin and other phenazine pigments. Pyocyanin is showed an antagonistic activity over pathogenic bacteria's like Salmonella paratyphi, E.coli, Klebsiella pneumonia. Pyocyanin can be used as natural suppressant for Fusarium wilt disease of tomato having antagonistic effect against wilt causing Fusarium oxysporum. In this review the biosynthetic pathway and the antimicrobial activity of the blue-green pigment have been discussed. Also, the potential of the bacterial pigment as plant growth promoter have been assessed.

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Biography

I'm a final year student from the Department of B.S.c Biotechnology Sister Nivedita University, Newton, Kolkata. In these three years of my B.S.c I have gained research experience on projects like biosynthesis of gold nanoparticles over Fusarium oxysporum and E.coliDH5α, isolation of bacterial strain producing pyocyanin and its antimicrobial activity. I am planning to work on research projects in the field of neuroscience in future.

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Ayurvedic management of Ashmari (Renal stone) - A case study

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Abstract

Ashmari (~renal stone) is one of the most common diseases of *Mutravaha srotas* (urinary system) which occur due to improper functioning of the filtration in the kidney gets formation of crystals such as calcium, oxalate, uric acid etc. Due to food and life style variations, it has become a global problem varying its incidence as per geographical distribution, sex and age group. It is highly prevalent disease with high recurrence rate. Passing renal stones can be quite painful, if stones become lodged in the urinary tract, it can associate with a urinary infection or cause complications and surgery may be needed. It is a single case study, a 25-year-old male patient with complaints of acute right flank pain in abdomen and back which was radiating from loin to groin region, associated with indigestion, nausea, vomiting, burning Micturation, dysuria and hematuria. He was already diagnosed before 1 month and taking modern medications for relief in symptoms. Later he observed again same problem then he was approached to MIAER hospital. The patient was administered with *Yoga Basti Karma* (~medicated enema therapy) and *Shaman Yoga Chikitsa* (~palliative treatment). Patient got 70% results in chief and associated complaints, and during or after the completion of therapy there was an improvement in the quality of life of the patient. Pain was markedly reducing with relief in all associated symptoms and also expulsion of calculus. Satisfactory relief in symptoms was seen in patient after 60 days treatment of *Yoga Basti Karma* and *Shaman Yoga Chikitsa.*

Keywords

Ayurved, Ashmari, Case study, Renal stone, *Shamana Yoga chikitsa, Yoga Basti.*

Biography

Astha Verma, MD Kayachikitsa, Ph.D Scholar, Assistant Professor of Kayachikitsa Department, Mandsaur Institute of Ayurved and Research Mandsaur, BR Nahata pharmacy campus, near krishiupajmandi, Mandsaur, Madhya pradesh, India

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Molecular Identification of Fungal Strains Isolated from Textile Effluent and Contaminated Soil using 16s rRNA Sequencing

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Hina Kousar
Corresponding Author, Department of PG Studies & Research in Environmental Science, Kuvempu University, India

Abstract

A study was conducted on isolation and identification of fungi in textile effluent and its contaminated soil. A total of four fungal strains were successfully isolated three from textile industry effluent contaminated soil and one from textile industry effluent. All the four isolates were identified based on 16s rRNA gene sequencing. They were identified as *Aspergillus flavus*, *Penicillium hetheringtonii*, *Aspergillus aculeatus* and *Aspergillus pseudonomiae*. The sequences were submitted to GenBank under accession number MZ544387, MZ574434, MZ569631 and MZ569632 respectively.

Keywords

Textile industry effluent, Fungi, NCBI, GenBank, sequence, BLAST, accession number

Biography

Chaithra C At present doing as Ph. D in the Department of Environmental Science Kuvempu University, Shankaraghatta, Karnataka, India.Bagged Gold Medal with 1st Rank in M.Sc, Environmental Sciences from Kuvempu University in 2018 and Got INSPIRE fellowship given by Department of Science and Technology (DST) Government of India to University first rank holder for doing Research Studies and published and attended various national and International conference.

Dr. Hina Kousar Working as Associate Professor and Chairperson in the Department of P. G. Studies and Research in Environmental Science, Kuvempu University. Under her supervision nine candidates have been awarded Ph.D and three candidates have been awarded M.Phil. Three candidates are currently pursuing their Ph.D, have research publications in National/ International Journals is 80. Total number of Conferences/ Seminars/ Workshops attended, and papers presented are 69. And written book (**Hina Kousar** and E.T. Puttaiah: "Environmental Engineering and Biotechnology". Published by Distance Education Council, Kuvempu University, Shankarghatta, Shivamogga Karnataka 2004 -05.)

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Role of Cyanobacteria as Potential Biofertilizer

Puja Nandi
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Abstract

A biofertilizer is a substance which contains living microorganisms which, when applied to seed, plant surfaces, or soil, colonize the rhizosphere or interior of the plant and promotes growth by increasing the supply or availability of primary nutrients to the host cells. Most common organisms which are used as biofertilizer includes bacteria , cyanobacteria, and fungi(mycorrhiza).Chemical fertilizer has got several disadvantages which includes bioaccumulation which leads to several health hazards in mammals and humans ,gradual deterioration of soil fertility which in turn can also encourage plant disease. Also ,the toxic chemical fertilizer can affect micro-organisms living in the soli which are beneficial for plant. Cyanobacteria plays a significant role as potential biofertilizers which increases nitrogen and phosphate content of soil and also have been reported to have a vital role as PGR(Plant Growth Regulators).Cyanobacteria being an autotroph is capable of drastic carbon – sequestration which adds on to the reduction of global warming. IN this review the potential of different Cyanobacterial strains which can be used as biofertilizers have been discussed along with their other probable contributions towards the development of sustainable green technology for small and marginal farmers in any developing country.

Keywords

Cyanobacteria, Biofertilizer, PGR, Carbon-sequestration.

Biography

I am PUJA NANDI ,I have completed my B.sc in Microbiology from Asansol Girl's College ,under Kazi Nazrul University, Asansol, India. Now I am doing my masters in Microbiology from Sister Nivedita University, Kolkata, India. I have interest in research filed, so I want to work in different research filed like environmental Biotechnology, Medical Microbiology as my further studies

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Isolation of Indigenous Multi Metal Tolerant Bacteria from Uttar Pradesh and Bihar, India

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School of Biotechnology and Bioinformatics, D. Y. Patil Deemed to be University,India
Sunita Singh
School of Biotechnology and Bioinformatics, D. Y. Patil Deemed to be University, India

Abstract

Heavy metals are a group of naturally occurring metals and metalloids that have relatively high density and are toxic even at low concentration. (Ppb). The unprecedented increase in the heavy metal contamination in last few decades due to anthropogenic activities has led to an adverse effect on both the crop quality as well as human health. The crop quality and productivity is unfavorably affected by the stress/toxicity caused by the heavy metal contamination of soil and water. The conventional methods of remediating heavy metal from soil and water are expensive, laborious and produce by product which in turn affects the environment. In recent times bioremediation by microorganism is seen as a cheap, environment friendly and a feasible alternative.

The present work is a study on the isolation of indigenous multi heavy metal tolerant bacteria from Bihar and Uttar Pradesh, India. For this study, a total of 50 isolates from the underground water and soil samples were isolated from these location. Out of these 50 isolates 46 showed co-metal tolerances to Cadmium, Arsenic, Zinc, Lead, Chromium and Copper. The Minimum inhibitory concentration and Antagonistic activity of these isolates was also studied. This preliminary study shows that the isolates are multi metal tolerant and further studies will be carried out to determine the efficacy of the isolates for plant growth promotion and bioremediation.

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Biography

Ruchi Dube is a Ph. D student at the DY Patil University, School of Biotechnology and Bioinformatics, India. She received a Master's degree in Biotechnology from DY Patil University, India.

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Medicinal Plants and Ethnomedicine in jeopardy: A Study from Kerala, India

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Centre for Research and Evaluation, Bharathiar University, Coimbatore, Tamil Nadu, India

Abstract

India is well known for its rich ethnic culture and ethnomedicinal practices from time immemorial. The state Kerala harbours a diverse array of tribal settlements that holds unique indigenous treatment modalities grounded on plant based formulations. Most of the tribal clutches solely relies on this indigenous treatment modalities as a primary health care system even now. The easy accessibility, affordability and minimal side effects of the ethnomedicines made it more reliable. Climatic alterations, habitat destruction, overharvesting, invasive species, bioprospecting and biopiracy guided irreplaceable outcomes in ethnomedicine. The climatic repercussions have resulted in the extinction of many medicinal plants, shifting of vegetation, interruption in the mutualistic relationships and transitions in the phytochemical and pharmacological attributes. Thus a study was conducted among the tribal hamlets across the State of Kerala to collect the ethnobotanical information and pattern of plant usage. A major jeopardy in the ground of ethnomedicine is the indigenous knowledge reservoirs are wholly marginalized on the elder communities of the tribal settlements. Transitions in the life styles of the ethnic communities shifted the selection of treatment approaches from herbal remedies to the modern allopathic medicine and have accompanied a gradation in the traditional indigenous information's concerned with the ethnomedicinal flora. To conclude, mitigation measures to conserve the rich ethnic flora, to document the available ethnobotanical information and to mould government projects to save the copious ethnic culture are recommended.

Keywords

Kerala, Ethnomedicine, Indigenous, Herbal remedies, Biopiracy.

Biography

Tojo Jose is the Research Scholar at Centre for Research and Evaluation, Bharathiar University, Coimbatore, India. He has more than 10 research publications as journal articles and book chapters and has presented papers at various national and international conferences on ethnobotany, plant taxonomy, climate change and phytochemistry. He received the Best Oral Presentation Award for the topic "Climate change and medicinal plants: An ethnobotanical perspective" in 2nd International conference on climate change held at Kuala Lumpur, Malaysia in 2021.

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Cyanobacterial Remediation of Azo Dye in Textile Industry Effluent: An Ecofriendly and Cost Effective Route of Wastewater Treatment

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Abstract

The release of unprocessed wastewater from Textile industries is one of the current environmental threats being faced worldwide. The Textile industry uses high volume of water throughout its operations, from the washing of fibers to bleaching, dyeing, and washing of finished products. The large volumes of untreated wastewater generated often contain residues of reactive dyes and chemicals. Some of the dyes present in these waste waters contains dyes such as azo dye that are toxic to aquatic life as well as carcinogenic to humans. Hence, these wastewaters needs to be properly treated before being discharged into the environment. Cyanobacteria (blue green algae) have been found to be very effective in removing pollutants from wastewater. In earlier studies it has been shown that they can act as bio sorbent to remove detrimental residues from the adsorbent. Based on available scientific reports these organisms are expected to be able to bio remediate the toxic dyes and chemicals in the waste waters from the textile industries. It is turning into a promising alternative to replace or supplement present treatment processes. This paper aims to determine the azo dye removal ability of different cyanobacterial strains in laboratory and as well as commercial scale.

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Biography

Parna Dey has done her Bachelor's in Microbiology from Lady Brabourne College under Calcutta University. She is currently pursuing her Master's Degree in Microbiology from Sister Nivedita University, Kolkata. She has interests in the study of microscopic life forms and their role in the Ecology. She is keen in exploring the special properties exhibited by the diverse sections of microorganisms that provide these microorganisms ability to positively contribute to the environment as well as to its inhabitants. Her long term goal is to engage in research and participate more in environment related activities. She is a nature lover and an avid traveler.

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Resuscitating Traditional Water Yielding System: Relieving Water Scarcity in Rajasthan

Dr Rashmi sharma
Associate Professor, Zoology SPCGCA AJMER, India

Abstract

India is facing fresh water crises due to increasing population, Global warming, Water pollution ,Industrial waste, Increasing Automobiles pollution cutting plants, Degenerating Hills and Mining and many other reasons. India has Himalayas in North , Aravallis in West, Bay of Bengal , Indian Ocean and Arabian Sea in east , South and West. Rajasthan has semi-arid and arid climate, specially adapted to survive in the dry waterless region of the state.
Water problem is the great problem of Rajasthan and INDIA. Due to Scarcity of Rains Interlinking of Rivers like Indira Gandhi canal and Luni River and Banas River can solve the water scarcity problem of Rajasthan.

Keywords

Traditional water harvesting, India

Biography

Dr Rashmi Sharma M.Sc PhD D.Sc DCA FSAS Associate Professor SPCGCA MDSU Ajmer, 8 students completed M.Phil under her supervision and 6 doing PhD. 1 student submitted thesis, Attended more than 99 conferences national and international. Organizing secretary and organizing committee member in many international conferences and Written 15 books and published 20 papers in national and international journals.

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Comparative Water Quality Assessment of Jeli and Tok Bok Hot Springs, Kelantan, Malaysia

Faculty of Earth Science

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Navina A/P Siva Sangkaran Nair
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Hafzan Eva Mansor
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Elvaene James
Department of Geoscience, Faculty of Earth Science, Universiti Malaysia Kelantan, Campus Jeli, Malaysia

Zameer Ahmad Shah
Geological Survey of India, Northern Region, India

Abstract
The present research is focused on geological mapping and water quality assessment in hot springs of Jeli and Tok Bok which are situated in Jeli and Machang districts in Kelantan, respectively. The objective of this research is to update the geological map of study area on scale of 1:25000 and to compare the hydro-geochemical data of Jeli and Tok Bok hot springs. The methodology for geological mapping is based on secondary data from previous researchers, websites and remote sensing to observe the geomorphological features, structures and drainage pattern of the study area. All these field related data were processed in GIS based platform to generate geological and other thematic maps. For the comparative water quality assessment, physical parameters studied include pH, total dissolved solid (TDS), dissolved oxygen, temperature and electrical conductivity (EC). In addition, few chemical parameters including chloride, calcium, sodium, magnesium, potassium, bicarbonate, sulphate, fluoride and iron were also analysed from both the hot spring water. Geologically, the study area mainly consists of granite and schist rock units in Jeli hot spring area.The granite was aged back to Cretaceous and known as Lawar Granite while the schist was Tiang Schist from the Silurian-Devonian period. Based on the water quality data, Jeli hot spring water represents the magnesium-bicarbonate

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type whereas the Tok Bok hot spring water represents the calcium- chloride type on Piper Trilinear Diagram.

Keyword
Geological mapping, water quality, hot spring

Biography
Dr. Mohammad Muqtada Ali Khan, Senior Lecturer, Department of Geoscience, Faculty of Earth science, University Malaysia Kelantan, Malaysia.

Bio-reclamation of Municipal Waste Water – Special Reference to Efficiency

Dr. Jayanthi Nagakumar
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Dr. Akshey Bhargava
Ex. Member Secretary, Rajasthan Pollution Control Board, Jaipur; and Professor & Industrial Advisor, CEPT University, India

Abstract

With the rapid increase of population coupled with industrialization and urbanization has resulted in huge generation of municipal waste water which at the present point of time is usually being discharged untreated by majority of the developing or undeveloped countries causing land, surface and ground water polluted to significant extent. This fact and an emerging scenario has been occurring due the fact that extensive money is involved in the treatment of such a huge quantity waste water in terms of capital as well as recurring cost. The authors of the present paper have thus addressed the problem referred to above by adopting bio-reclamation technology having energy efficiency concept for the treatment of municipal waste water to make the system environmentally sustainable associated with resource recovery and economic benefits. An attempt has been made by the authors to explain the biological conversions, mass flow and energy recovery in an up-flow anaerobic sludge blanket reactor (UASB) and compare this to the conventional activated sludge process. Moreover, focus has given to future wastewater treatment plants including the major challenges of the paradigm shift from waste removal to resource recovery along with technologies and processes to be applied, integrated sanitation system and management and policies coupled with governance model.

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Biography

1 Dr. Jayanthi Nagakumar has more than 25 years of total experience in Academics, Planning, Design and Execution/Implementation in the field of Environmental Sustainability /Protection. The author has worked for various National and International Organizations as a Key Environmental & Social Expert for the Project Development Initiatives in developing National & State Mega Infrastructure Development Projects and Industrial Projects funded by national and international agencies. The Author has a vast experience in design and execution of Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP), auditing and Institutional Strengthening in Construction Projects. The author has served in advisory capacity too.

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Nanoparticle-Based Biosensors for detecting infectious pathogens in Waste Water Treatment system: Special emphasis to the detection of SARS-CoV2

Arghya Nath
Sister Nivedita University, Department of Biotechnology, India
Dooja Singh
Sister Nivedita University, Department of Biotechnology, India

Abstract

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection originated from Wuhan city, China which was widely and rapidly spread throughout countries and reason is for the current ongoing global pandemic situation since December 2019. Around 3.3 lakhs peoples were passed away and around 2.8 core peoples were infected till now. So, today's global concern is about environmental contaminations and pollution's effects on health and hygiene as well as the scocioecomical growth of the human population. Rapid, specific, and highly sensitive detection of pathogenic microorganisms like bacteria, viruses, and parasites are the prime factor for public health, food, and water safety. The nanoparticle-based biosensor detection methods are considered as a dominant method for detecting those pathogens. SARS-CoV-2 spreads in our environment very quickly due to improper wastewater management, thus many peoples got infected without coming in contact with the COVID-positive patients. Waste management is critical to human development and health outcomes, especially during the pandemic situation. This work provides a distinct overview and summarizes the observed environmental effects of SARS- CoV-2 virus in wastewater and immune-based nanoparticle biosensor detection through optical, magnetic, electrochemical, and miniaturization methods. This could be a possible way to keep a surveillance on the outbreak of SARS-CoV-2 or other bacteria and viruses in global communities, thereby identifying the contentment zone and suppress the diagnostic costs of testing.

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Biography

Arghya Nath pursuing Masters in Biotechnology from Sister Nivedita University, Kolkata, India. She Completed his Bachelor in Science degree in Botany from University of Calcutta. He fully involved in various articles related to different areas of Environmental Science and has immense interest in the area of waste water management, medical waste, Microbes effects in metal removal etc. His future point of research domain is on waste management.

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Groundwater Quality of Shallow Wells in Gunong, Bachok, Kelantan, Malaysia

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Shinthurathi Myandran
Department of Geoscience, Faculty of Earth Science, Universiti Malaysia Kelantan, Jeli Campus, Malaysia
Mohammad Muqtada Ali Khan
Department of Geoscience, Faculty of Earth Science, Universiti Malaysia Kelantan, Jeli Campus, Malaysia

Abstract

This present study focuses on domestic shallow groundwater wells located at Gunong, Bachok, Kelantan. Bachok is one of the states in Kelantan which depended primarily on groundwater sources for their different domestic uses. Therefore, efforts must be taken to ensure the quality of groundwater, especially from anthropogenic pollutants. For accessing groundwater quality in the study area, twelve (12) groundwater samples were collected from shallow wells (dug and boring wells) for physical and chemical analysis. Several *in-situ* parameters were measured using YSI portable multi-parameter e.g. groundwater temperature, turbidity, electrical conductivity (EC), dissolved oxygen (DO), pH and Total Dissolved Solids (TDS). Chemical analyses were also conducted in laboratory by using APHA standard methods to determine the concentrations of major cations e.g. sodium (Na^+), potassium (K^+), calcium (Ca^{2+}) magnesium (Mg^{2+}); and anions e.g. bicarbonate (HCO^-_3), chloride (Cl^-), nitrate (NO^-_3), sulphate (SO^{2-}_4), and fluoride (F^-). The result of analysis indicated that Ca^{2+} is the dominant cation in most of the samples followed by Na^+, whereas Cl^- is the most dominant anion in all the samples. Two (2) groundwater facies were identified based on Piper Trilinear and Ludwig Langeliar (LL) diagram which are NaK–$ClSO_4$ and CaMg–SO_4. Chemical quality of groundwater samples was also assessed for drinking purposes by comparing with WHO and MOH standards. The results show that groundwater in the study area meets the norms of good quality drinking water, excepts few wells which show a high concentration of K^+, turbidity and hardness.

Keywords

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Groundwater, quality, domestic wells, Bachok, Kelantan, Malaysia.

Biography

Dr. Hafzan Eva Mansor (Dr. Eva) is a Lecturer of Geoscience Department, Universiti Malaysia Kelantan (UMK), Malaysia since 2012. She obtained her undergraduate master degree in geology (2007) from Universiti Malaysia Sabah (UMS). She received her Ph.D. in Petroleum Geology from the Universiti Malaya (UM), Malaysia in 2021. Her research focus is the stratigraphic record of sedimentary basins. A principal research area is the characterization of sedimentary processes and depositional architecture of a wide range of depositional environment (particularly on submarine deposits i.e. channel-levee, channel-lobe transition zone, and lobe systems) using outcrop, subsurface datasets, and modern systems. A second research focus lies in understanding groundwater chemical and physical characteristics. A third research focus is on geoheritage; particularly on geosite evaluation, conservation of geosites, as well as its interpretation through education, training, and tourism.

Using Plant Based Coagulants for the Treatment of Waste Water Treatment

Stephy Mathew
Maharaja Sayajirao university of Baroda ,India

Abstract

Waste water consists of many organic materials, biological components and toxic inorganic compounds which cause indirect effect on human health like Alzheimer. From decades, for the treatment of such water, chemicals are used for the purpose of coagulation. But these chemicals causes threats not only to ecosystem but also to human beings.so, plant based coagulants are the major progress in water treatment owing to their safety, biodegradability and availability. This will not only minimize ecosystem damage and threats but also foster the way toward an era of clean and sustainable environment. This present paper reviews work on most effective model plant based coagulants like MORINGA OLEIFERA AND BANANA STEM which is commonly available in India. They perform coagulation either by polymer bridging or charge neutralization and it can be extracted from various plant components. This coagulants will be eco-friendly, biodegradable, not affect adversely to human health and simultaneously do not induce charge in physio-chemical properties of treated water.

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Biography

Myself Stephy Mathew from third year of Bachelor of Science in environmental science from the Maharaja Sayajirao University of Baroda, India. I have participated in ample of activities from the university and won prize in 1 of them. Initially had participated in CPCB (Central pollution control board) for the air monitoring in 2019.In addition to that I have participated in bird rescue program organized by the wildlife protection foundation in 2019 itself. Furthermore, participated in poster making competition on the occasion of world environment day 2021 by bharat bhavya foundation. Recently won 2nd price in inter essay writing completion organized by SO-CLEAN foundation of Baroda in 2021.

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Quality Assessment of Groundwater for Irrigational Use in Parts of Lower Kelantan Basin, Kelantan, Malaysia

Zakiyah Binti Ainul Kamal
Universiti Malaysia Kelantan, Malaysia
Mohammad Muqtada Ali Khan
Universiti Malaysia Kelantan, Malaysia

Abstract

Hydrogeochemistry analysis of groundwater samples were carried out at the Lower Kelantan Basin to assess its quality for irrigation use. 39 groundwater samples of different aquifer layers with depth between 10 – 130 m were collected during pre-monsoon season (October 2020) from different wells (monitoring and domestic wells) that covers the Lower Kelantan Basin region. The samples were analysed for physical and chemical constituents: pH, temperature, electrical conductivity (EC), total dissolved solid (TDS), Ca, Mg, Na, K, Cl, SO_4, and HCO_3. The physical analysis were conducted using YSI Multiprobe parameter at the sampling site while the major ions constituents were analysed using atomic absorption spectrometry (AAS), HACH DR600 UV-VIS Spectrophotometer and titration method. The results show that all the groundwater samples are dominated by Ca-HCO_3 and Ca-SO_4 water facies. The sodium absorption ratio (SAR) and salinity hazard show that the majority groundwater samples fall in the C1-C3 (low to high salinity water) and S1 (low sodium hazard) section. This indicated that majority of the groundwater is suitable for irrigation use. One groundwater sample from the intermediate aquifer fall in the C4-S3 (very high salinity with high sodium hazard) section which is not suitable irrigation use.

Keywords

irrigation, groundwater, assessment, Kelantan, Malaysia

Biography

Zakiyah Binti Ainul Kamal is currently pursuing a PhD in Hygrogeology at Universiti Malaysia Kelantan under the supervision of Dr. Mohammad Muqtada Ali Khan. Her research interests are related to hydrogeology, seawater intrusion, stable isotopes and geology.

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Impact of SARS-CoV-2 in Water and Wastewater

Jayasmita Chakraborty
Department of Microbiology, Sister Nivedita University, India

Abstract

Phylogenetic estimation showed us that SARS-CoV-2 arose in October or November 2019. The first confirmed human infections were in Wuhan, Hubei, China. Approximately 17.1 Cr people are infected by this virus. The virus is transmitted mainly via the respiratory route, when people inhale droplets and particles that infected people release as they breathe, talk, cough, sneeze or sing. Due to the lack of proper waste management(i.e PPE kits, improper disposal of surgical masks, caps and other things) under this lockdown situation in various metropolitan cities, it has started making troubles and the Covid-19 virus present in these things starts transmitting in the environment specially with the ground water, waste water and air. The presence of SARS-CoV-2 in wastewater is predictable because it can infect the gastrointestinal tract and are shed through the stools of the patients and the virus comes contact with waste water and can survive long time under environmental conditions. In many countries, due to the lack of water resources, untreated wastewater used for irrigation of agricultural land. In addition, sludge from the treated wastewater is excellent fertilizer. The viruses contained in this wastewater and sludge is thus deposited on crops and on the soil where they are likely to survive. In this review, the probable contamination sources of SARS-CoV-2 in water and wastewater system have been assessed and also the prediction and detection method have been discussed.

Keywords

SARS-CoV-2, COVID-19, waste water, contamination.

Biography

I am Jayasmita Chakraborty, from North Tripura, India. I have done my graduation on Human Physiology from Degree college, Dharmanagar and pursuing my Post Graduation on Microbiology from Sister Nivedita University, Kolkata. I have done my project work on various chemical substances which cause environmental pollution during ramie degumming. I want to work on different topics i.e based on environmental science, Natural hazards, Virology and interdisciplinary topics in between Human Physiology and Microbiology.

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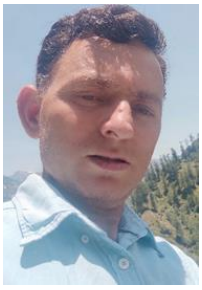
Plastic waste- The Big Challenge for 21st Century



Dr.Tanveer Hussain
Assistant Professor of History, Govt. Degree College, India

Abstract

In the current world scenario, plastic waste problem has peaked to enormous proportions. Plastic waste generation rates are influenced by economic development, the degree of industrialization, public habits and local climate. Generally, the higher the economic development and rate of urbanization, the greater is the amount of solid waste produced. Urban residents produce about twice as much waste as their rural counterparts. The marine ecosystem is threatened by huge dumps of plastic waste entering into the ocean. The green plastic industry is waiting for the young start ups to take India on the path of clean development using biodegradable or water soluble plastics. For example, a small start up called Envigreen is manufacturing water soluble plastic in Bengluru and is being supplied to most of the cities in Karnataka. The plastic waste problem has been recognized by most of the international organization as well as government of India. The Government of India has resolved to discord the use of single use plastics as it forms major portion of plastic waste. It is widely recognized that we are hugely overspending our current budget of natural resources at the existing rates of its exploitation, there is no way for the environment to recover in good time and continue performing well in the future. Everything on our planet is interconnected, and while the nature supplies us with valuable environmental services without which we cannot exist, we all depend on each other's actions and the way we treat natural resources.

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Biography

Dr. Tanveer Hussain, Assistant professor at History Govt. Degree college, Kilhotran, Doda, Jammu and Kashmir. I have my PhD in the History from Nainital University, Uttrakhand in 2005 area if specialization was medieval India. I live in Gandoh, Bhalessa, District Doda, Jammu and Kashmir_ 182203. During my graduation I have opted Science subjects.

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Bioaccumulation of Heavy Metals in Tuber Crops Growing In Wastewater Irrigated Soil around Kali River, Meerut, Uttar Pradesh, India

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Department of Environmental Science, School of Earth and Environmental Sciences, Babasaheb Bhimrao Ambedkar University (A Central University), India
Venkatesh Dutta
Department of Environmental Science, School of Earth and Environmental Sciences, Babasaheb Bhimrao Ambedkar University (A Central University), India

Abstract
Worldwide, an estimated 200 million farmers irrigate at least 20 million hectares of agricultural land with untreated or partially treated wastewater accounting for 8% of total worldwide irrigated land, of which two-thirds lies in Asia. In many areas of developing countries, untreated or partially treated wastewater flows through channels into rivers where it is diverted by farmers to irrigate their crops. The wastewater and soil samples have been collected from the selected sites at regular intervals for the physico-chemical analysis i.e., color, pH, DO, BOD, COD, TDS, EC has been done in the laboratory. Accumulation and translocation of toxic metals such as Cu, Cd, Cr, Zn, Fe, Ni, Mn and Pb were analyzed in various plant parts such as root, shoot, leaves and tuber has been reported. Results showed that the wastewater has a high amount of organic matter and nutrients which will increase the crop yield in comparison to well water. The consumption of vegetables contaminated with heavy metals carried a considerable risk to humans and their dietary challenges are discussed. The study of wastewater irrigation is intended to guide national planners and decision-makers, agricultural and municipal managers, field engineers and scientists, health and agricultural field workers, wastewater treatment plant operators and farmers. We discussed the major challenges associated with wastewater irrigation and its safe use to improve wastewater irrigation practices around the world.

Keywords
Kali River; Wastewater irrigation; Heavy metals; Vegetables; Physico-chemical analysis

Biography

I, Bhanu Pratap working as a research scholar under the supervision of Prof. Venkatesh Dutta, Department of Environmental Science, Babasaheb Bhimrao Ambedkar University (A Central University) Lucknow, U.P, India. I have done my Masters in Environmental Science from the same Department and University. Currently, I'm pursuing my Ph.D. research in the broad research area of wastewater irrigation, heavy metal contamination and its impacts on selected crops, human health and the environment.

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In situ-polymerized Aniline on Nanocellulose -with micro emulsion technique retreat composite for adsorption of agrochemical from water

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Hyderabad Zonal Laboratory, CSIR-National Environmental Engineering Research Institute, IICT Campus, Tarnaka, India and Department of Environmental Science & Engineering, Marwadi Education Foundation, India

Archana Sharma
Department of Environmental Science & Engineering, Marwadi Education Foundation, India

Shaik Basha
Hyderabad Zonal Laboratory, CSIR-National Environmental Engineering Research Institute, IICT Campus, Tarnaka, India

Abstract

Composite materials of polyaniline (PANI) and Nanocellulose (NC) were prepared by the chemical oxidative polymerization of aniline in the presence of SDS (Sodium dodecyl sulfate) in an aqueous solution of hydrochloric acid, using ammonium peroxydisulfate as an oxidant. Pre adsorption (Protonated as-synthesized) forms of the composites and post adsorption PANIs were characterized by scanning electron microscopy, FTIR analysis. XRD study carried out for NC and NC coated with PANI. The modified NC has hydroxyl group (O -H), stretching vibration of C = C present in benzene and stretching vibration of quinonoid (C = N) which indicates that polymerization has been successfully applied. Moreover XRD pattern showed benzoid and quinoid rings presences in composite. Adsorption properties of synthesized materials for removal of chlorpyrifos (CP) pesticide from aqueous solutions were studied, including effect of concentration, dose, and pH using HPLC technique. The obtained adsorption isotherms were analyzed using Langmuir, Freundlich, Redlich-Peterson (R-P), and Sips and Temkin equations. Protonated PANI/NC composites showed excellent adsorption capacity. Presence of protons in bridging hydroxyls in NC and in protonated PANI-ES chains is essential for excellent adsorption of CP via hydrogen bonding on all protonated composite samples.

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Biography

I am Pareshkumar from CSIR NEERI Hyderabad Zonal Centre, India. My research interest is the design, synthesis and functional aspects of conductive polymers for photocatalysis and adsorbents.

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Impact Assessment of Solid Waste on Ground water and Soil in and around of dumping site, Kasba Bawada, Kolhapur

Rahul.S.Shete
Shivaji University, Kolhapur

Abstract

This research paper includes a 6 months environmental study of impact assessment of solid waste at Dumping site on Ground water and Soil at Kasba Bawada, Kolhapur that includes a detailed study of the ground water and soil characteristics. The dumping and open burning practices will led to the percolation of waste into the soil and ground water which will eventually lead to various health and environment issues. In order to check the quality of the ground water and soil, assessment was carried out for the Ground water and Soil near the dumping and landfill site around the 1 km radius in ecosystem is indeed an important resource which has yet to be studied on a bigger scale to meet the ever increasing demand for the water and soil for their use as resources. 6 Ground water and 5 Soil sampling sites are selected in and around the dumping site. During the project, various physical, organic, inorganic and nutrient parameters were studied and also the detection of the heavy metals was carried out for soil and ground water analysis. Most of the ground water parameters are within the limit of BIS and WHO standards of drinking water except Total Solids which is higher in all sites and Nitrate which are higher than the limits in 2 sites when compared with the standards as these sites are near and around the dumping sites. The Nutrient parameters of Soil like Organic Carbon, Organic Matter and Available Phosphorous are present higher than the limit in all the sampling sites. The presence of high organic Carbon and the Organic matter with Available Phosphorous indicates the good fertility of the soil in and around the dumping site. The heavy metals are within the limit in soil when compared with the standards whereas in the ground water, Lead, Copper, Nickel and Cadmium are present higher than the limit when compared with the BIS and WHO standards of drinking water quality during the post monsoon of 2018 and pre monsoon of 2019.

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Biography

My Name is Rahul.S.Shete. I am from, India. I have completed my Post Graduation in Environmental Science in 2019 from Shivaji University, Kolhapur and currently working in the CSIR-National Environmental Engineering Research Institute (Hyderabad Zonal Centre). My scope of interest is in soil- sediment, solid waste management, ground water pollution study. I have 3 published Indian Patents with a topic of recycling of used microbiology media and other two of using the waste for energy generation and currently looking forward to use my experience for PhD and explore the environmental issues and their solutions.

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Fluctuational Analysis of Nighttime Ground Level Ozone Concentrations due to to Variations in Hourly Relative Humidity

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Faculty of Earth Science, Universiti Malaysia Kelantan, Malaysia

Abstract

Ground level ozone (O_3) is not emitted directly into atmosphere but resulted from photochemical reactions between precursors and sunlight under influenced by meteorological factors such as relative humidity and temperature. Therefore, this study aimed investigating the influenced of relative humidity and temperature in fluctuation and transformation of O_3. Hourly monitoring data of O_3, relative humidity and temperature in Shah Alam in 2010 were acquire from Department of Environment (DoE) which then was extracted for nighttime O_3 data. Monitoring for three days has been carried out in Shah Alam for primary data collect. Both primary and secondary data were analyzed using descriptive statistics, box and whisker plot, time series and diurnal plot. The result showed that negative correlation between O_3 concentration and relative humidity during nighttime. Meanwhile, a positive correlation between O_3 concentration and temperature during nighttime were established. The diurnal pattern of O_3 concentration has higher amount during daytime rather than nighttime. As conclusion, lower humidity allowed higher ground level ozone concentrations in the atmosphere as the pollutant deposition process being limited.

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Biography

Dr. Norrimi Rosaida Awang is the Deputy Dean of Academic and Student Development of Faculty of Earth Science, Universiti Malaysia Kelantan. Her research works is mainly focusing on variation of ground level ozone which is one of significant air pollutants in Malaysia utilizing secondary air pollutants data and statistical modelling. One of her breakthrough study was identification of critical transformational time of ground level ozone production in Malaysia. Currently, her work focusing on nightime ground level ozone phytochemistry and other factors that associated.

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Diversity of Zooplankton Community of Freshwater Lake Warangal District, Telangana State, India

V.Rajani
Department of Zoology, Kakatiya University, India.

Abstract

The present investigation deals with the study of seasonal variations of diversity of zooplankton in wardhannapet freshwater lake in Warangal district. The work was carried out for a period of one year from June 2019 to May 2020. The present study contained a total of 23 species of zooplankton belonging to four different groups of zooplanktons were identified in this study which include Rotifera, Cladocera, Copepoda and Ostracoda.11 species of rotifer,5 species of cladocera,4 species of copepod and 3 species of ostracoda. Rotifera group was found to be the most dominant among the other groups. The diversity and density of zooplankton species at wardhannapet freshwater lake during study period are as follows – Rotifera >Cladocera >Copepoda>Ostracoda. The various kinds of diversity indicate the Monthly and seasonal variation of zooplankton community and good quality of Lake Ecosystem. The total zooplankton population of this lake has Rotifera (45%), Cladocera (22%), Copepoda (18%) and Ostracoda (15%).Therefore it can be now concluded that this lake is highly potential to take up commercial fisheries.

Keywords

Zooplankton, Wardhannapet Freshwater Lake.

Biography

Vanga. Rajani am a Research scholar in department of zoology, Kakatiya university, warangal, telangana state, India.

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Zebrafish –A Materialize Vertebrate Model for Toxicity Screening

Manisha Pallavi
Department of Life Science, Central University of Jharkhand, India
Dr. Praveen Kumar Sharma
Department of Life Science, Central University of Jharkhand, India

Abstract

Environmental changes are gigantic challenges that put pressure on human and ecological health. Water quality is a major concern that needs to be monitored and evaluated to assess the harmful effects of contaminants on aquatic fauna as well as human health. Polluted wastewater effluent containing heavy metals and other chemicals reaches the aquatic system and affects the metabolic activities of the aquatic organisms. So, biological indicators or sentinels can be used to check the quality of minimal resources for quick evaluation. Zebrafish (*Danio rerio*) are superlative biological monitors in different fields for their wide distribution, easy availability, hardy nature, short breeding time with high fecundity rate as well as easily assessable development stages. Zebrafish is a persuasive vertebrate model to estimate the level of tolerance of drugs. Previously, Zebrafish have been used as an agrochemical toxicant model. Recently it has been also serving as an in vivo model for the evaluation of developmental defects caused by toxicants in the transparent zebrafish larvae in just 7 days and that is the best reason to choose this model for fast assessment. Furthermore, the toxic effect can be compared with mammalian assay too. Further investigations also divulge that not only developmental process can be evaluated by this model rather it can be used for the evaluation of cardiotoxicity, neurotoxicity, carcinogenicity, ocular toxicity, heavy metal toxicity as well. The present review is a brief synopsis of the importance of the zebrafish model as an eco-environmental monitoring toolkit and innumerable pollutant detectors for heavy metals toxicity, oxidative stress as well as organic pollutants.

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Biography

Manisha Pallavi is a research scholar in the Department of Life Science of Central University of Jharkhand. She is pursuing her PhD in neurobiology under the supervision of Dr. Praveen Kumar Sharma. Her areas of interest are Molecular biology, Type 2 Diabetes, epigenetic changes, neurobiology, behavioural science, waste water management, environmental impact valuation, Biodiversity and conservation.

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Aquaponics – A Viable & Sustainable Go Green Initiative

Rakhi Raveendran.K.K
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Abstract

Aquaponics is an innovative idea of soilless culture. It gives solution to the most pertinent issue of the growing world population - nutrition. Over exploitation of the resources have been done for a long time for the fulfillment of the needs of man. This has caused immense damage and pollution to the biosphere and continues to increase drastically from time to time. Hence, we need a sustainable development to solve all these issues, which include food production and environment protection. The fundamental theme of the objective to be achieved is "Go green with no emission".

Aquaponics techniques are the best method used to get nutritious food, a source of income, no wastage of resources and zero pollution. It conserves land, water and is environmentally non-degrading. Aquaponics techniques collaborates the ideas from techniques like aquaculture, hydroponics and integrated fish farming and it facilitates to grow substantial amount of food in locations where soil-based culture is not feasible. It is a clean and green way of food production. It is an enclosed system in which every requirement of each element in the system is fulfilled and balanced by the other and the waste or residue also gets utilized within the system, the result being that there are no emissions or waste that is left out to be managed.

The efficacy of the technique has improved by customizing them in accordance with the environment and by adding new innovations that attributes the system and had evolved as a perfect system of cultivation which can be used in every situation with assurance of no damage to the environment. Aquaponics system is an induced form of bio-diversity within a limited area and once installed it takes care of itself symbiotically and human intervention is mostly limited to system maintenance and protection from predators and considering the benefits the expense and effort for the same is paltry. Both experimental and doctrinal research can be done on this topic since it is possible to do this type of cultivation anywhere in the world and there are lots of researchers doing it and documenting it for the further research. This can be a wide area to do research by improvising each element of it, to make it the best way of sustainable food production and environmental conservation.

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Biography

I am Rakhi Raveendran.K.K, a Research Scholar at the Department of Zoology, Presidency College, University of Madras, Chennai. I have completed my post-graduation in Zoology from Queen Mary's College, University of Madras, Chennai. As an additional qualification, I have also acquired a Master's degree in IT from the Vellore Institute of Technology. Research writing is one of my recently acquired interests and the above is my earnest effort towards the same and the theme "GO GREEN INITIATIVE" has drawn my attention as one of my streams of research i.e. Aquaponics is one of the most viable options that could prove to be an answer to the rising nutritional scarcity with absolutely zero emissions.

Global Warming and Climate Change- An overview

Jigyasa Singh
Department of Biotechnology and Biosciences, Banasthali Vidyapeeth, India
Dr. Akshey Bhargava
Ex. Member Secretary, Rajasthan Pollution Control Board, Jaipur, Professor and industrial adviser, CEPT University, India

Abstract

"Climate change" and "global warming" are quite often used, subject to debate with interchangeably they have distinct meanings. Global warming is a phenomenon which has been occurring since the pre-industrial period due to human activities, primarily use of anthropological fuel sources such as fossil fuel utilization, which aggregates heat-trapping greenhouse gas stature in Earth's atmosphere. Due to various purposes and human activity global warming was taking place on such a massive scale due to our lifestyle and day to day needs . It is most considerably measured as the average surge in Earth's global surface temperature. Climate, on the other hand, pertains to the long-term regional or even global average of temperature, humidity and rainfall patterns over seasons, years or decades An attempt has been made by the authors of the present paper to highlight the causes of global warming and climate change along with existing status and futuristic scenario and also the mitigating measures to address these issues.

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Biography

I am Jigyasa Singh, Completed My masters in plant biosciences from Banasthali Vidyapeeth, Jaipur. As an emerging researcher I am interested to do research on global warming and climate changes and its impact on our future. Based on my research interest, to add more value to that recently I have worked on a couple of case studies where I have collected and compiled data about environmental impact on sewage treatment and converting it into value added products which are eco friendly in nature.

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Unfolding the Concepts of Green Technology to achieve ZERO Emission

Rajesh Kumar Kashyap
Climate Change & Environmental Livelihood Solutions (CCELS), India

Abstract

Earth was perfect once but man created Imbalance in nature through change in land pattern for their development activities. But in in last one century, man caused massive de-forestation**,** which resulted in surface heating and CO2 deposition**,** which is causing green house effect, which leads to global warming, the global warming leads to climate change and climate change leads to destruction.

CO2 Emission: Since past one century there is an increase of 20% CO2 in the atmosphere and its emission plays major role in increasing global warming. It act like catalyst, which accelerate in the overall temperature by trapping upheaval Infrared radiations and adds up in the global warming process. The global warming impacts the glaciers, ocean and climate change. Already the temperature has increased to 1 degree celsius and if it crosses 2.0 degree celsius, it will cause serious impact on the earth in form massive destructions, i.e. floods, storm, hurricane, rise in sea level, which will lead to submerge of low line areas, etc. If we fails rectify in time than it may damage our natural reflectors (Glacier & Clouds) and absorber (Clouds & Vapour) than global warming may increase in viscious cycle due to constant increase in global temperature.

But it is not too late, we can still check on CO2 emission and gradually can bring it to ZERO CO2 Emission. By doing so, we can thus be able to control on global warming.

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Biography

This is to appraise yourself that, 'Climate Change & Environmental Livelihood Solutions' (CCELS) is a start-up firm, which provides **Corrective Measures & Livelihood Solutions,** related to the Environmental Issues Impacted due to Climate Change. To resolve these issues, CCELS India is one stop point. We provide, tried and tested solutions as listed below.

Mr. Rajesh Kumar Kashyap, Director CCELS having a experience of 20 yrs in Environment and other Development sectors. He had worked on different project in eight (8) different states of India funded by European Union, EC, UNDP, World Bank, Japan Platform, JICA. His advice are well tried and tested and are:

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US-China Trade War: Impact on Sustainable Development in Developing Nations with special reference to South Asia

Ravi Kumar
Central University of Jharkhand, India

Abstract

This study mainly focuses on the US-China trade war and its impact on the economies of the developing nations with the special reference of south Asian countries. Meanwhile, this research work will also analyze its negative impact on the environment. The ongoing trade war between the US and China has devastating effects on the developing nations. The trade war is nothing but damaging the trade of another nation by imposing the tariff and trade barrier on others goods. The effect of this trade war is more intensive to the economy of those nations who are all more integrated with the global economy. It is the developing nations that are most affected by this ongoing trade war between the USA and China. Its effects are not only limited to economic slowdown but at the same time, it hampers the environment a lot. The trade war is affecting the forest reserve of the amazon basin as well as the sub-Saharan desert which is known as the lung of earth. At the same time, excessive industrialization causes wide-scale deforestation as well as desertification in developing and developed countries due to the rise of carbon.

Keywords

Developing Nations, Trade Barrier, Economic Slowdown, Deforestation, Desertification. Global Warming, Climate Change.

Biography

Ravi Kumar is Doctoral Research Scholar at the Department of Politics and International Relations, Central University of Jharkhand. He completed his Integrated B.A. B.Ed. from the Department of Education, Central University of South Bihar and M.A. from Department of Political Science and International Relations of the same University. He has presented in two National Level Seminar and participated in a one-week FDP on, "Environment Protection and it's Challenges in the 21st Century". Currently he is doing his research in South Asian Climate Security.

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Environmentally Sustainable Urban Planning- Conceptual Dimensions

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Vishakha Kumari
M.Sc Biotechnology, Banasthali Vidyapeeth, India
Dr. Akshey Bhargava
Ex. Rajasthan Pollution Control Board, Jaipur, CEPT University, India

Abstract

The urban areas are increasing on a time scale with the increase in population and corresponding growth of development to meet the demand of increasing population. Around 50 percent of the world population is living in urban areas and may increase to 70 percent over a span of next 20 years. Under such a scenario, urban areas are becoming hard pressed resulting into deterioration of the quality of urban environment and posing multidimensional emerging problems, particularly environmental problems in a broader context.

Under the context referred to above, there is an emerging need to evolve innovative conceptual dimensions in the process of integrated urban planning to impart environmental sustainability. Such an integrated urban planning coupled with innovative technological backup would be able to improve quality of urban environment, health of people and reduction of diseases, provide economic, and environmental sustainability and beautification of urban areas.

The authors of the present paper have described innovative dimensions to be infused in the integrated urban planning in the form of optimization between vertical to horizontal and concreting to non-concreting urban area, albedo effect, urban heat island effect, evaluation of urban atmospheric conditions, wind and atmospheric stability roses, natural air ventilation of urban area, aero-dynamics, carrying capacity of road network , environmentally sustainable sewage and solid waste management with economic inputs, green urban infrastructure, carrying capacity of water resources, eco friendly transport , green buildings and so on so forth. All these issues have been integrated and a well defined governance model devised by the authors to ensure effective implantation with success.

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Biography

I, Neel kamal, from Kanpur, Uttar Pradesh, India have done my M.Sc in biotechnology from Banasthali Vidyapeeth in 2016. I was involved in a dissertation work on the topic "Effect of Lead on Morphological and Biochemical parameters of *Moringa oliefera* Plant." I did my graduation in Biotechnology from Kanpur University in 2014, and earlier schooling from Kendriya Vidyalaya. I was a National hockey player during my school times, and I'm still a good athlete. I love to dance, travel, play, and spent time in valuable learning. Learning is my passion and involved in multidimensional innovative research.

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Carrying capacity of Urban Transportation Networks- A case study of designed ideal city

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Ex. Member Secretary, Rajasthan Pollution Control Board, Jaipur, Professor and industrial adviser,CEPT University, India

Abstract

With the rapid growth of urbanization, the population coupled with economy of most cities not only in India but globally is going through significant changes. One of the significant changes is relating to the fast development of transportation infrastructures in these areas which gives rise to a quick change on the travel behaviors. Changing life style along with the city's expansion, increasing population growth in urban areas and vehicular growth demand the design of new transportation system which is capable of meeting the free flow of traffic by assessing the carrying capacities of road network to accommodate increasing growth of vehicles on a time scale. Carrying capacity is a commonly used concept to represent the maximum flows that can pass through the roads without traffic congestion in transportation system. The authors of the present paper have designed a hypothetical ideal city having population of 10000 people with projected population up to year 2051 and corresponding estimation of increased vehicles through well-defined methods. The authors have also designed the road network to accommodate estimated vehicles to ensure free flow of traffic without any congestion by assessing the carrying capacity of such road network through compatible simulation models.

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Biography

I am Shruti Xess, a hardworking, dedicated and smart student at XIM University, Bhubaneswar, Odisha, India. I am pursuing my Batchelor in Science in Sustainable Development. I am taking small steps towards research work and writing. My hobby is writing pomes in Hindi and art and crafts. I have skills in digital marketing and quantum GIS and have participated in a Virtual Global Fellowship Program for Young Conscious Leaders organised by Engage and Y-East.

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Green buildings – A step towards environmental protection

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Abstract

Urbanization is growing on a faster pace throughout the world resulting into multifarious environmental problems of serious nature. These problems include air pollution, urban heat island, adverse health effects, water and noise pollution, waste disposal, social and economic. Usually the urban centre's and their growth are non-sustainable on account of lack of policy issues, vested interests and ignoring sustainable parameters along with lack of public awareness and transparent decisions. Environmental policy parameters in the form of heat island effects, albedo effect, ventilation coefficients, optimization between concreting to non-concreting urban surface and vertical to horizontal expansion, aero-dynamic effects, atmospheric stability, construction of green buildings, scientifically identified green space and so on so forth are either not being considered or not involved for want of technological solutions and compatible models. To address a portion of the problems referred above, the authors of the present have focused on green building concept in major urban area as a step towards environmental protection. The green building can be named economical building which deals with ecological issues within or outside the building premises. The authors have elaborated the importance of green buildings in terms of energy and water reduction, providing natural air ventilation in buildings and light, reduction of indoor air pollutants and providing aesthetic sense to people living in such green buildings. An attempt has also been made in the present paper to use alternate construction materials which are ecofriendly along with developments green roof, green walls and designing naturally air ventilated buildings.

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Biography

I, Dharshini G M, completed my Master's in "Construction Management and Engineering. I have a great passion towards academics, research activities and infusing innovative concepts. I participated in various conferences and published many papers. I love to teach students and bringing them value additions coupled with innovations.

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Conceptual Optimization of Concreting to Non-Concreting of an Ideal Urban City

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Ex. Member Secretary, Rajasthan Pollution Control Board, Professor and industrial adviser, CEPT University, India

Abstract

The world is going through an unprecedented change like never before. Rising population is leading to more urbanization, more rising opportunities, as a result, cities are becoming the epicenter of development and growth. More than 70% of the world's population is projected to live in cities by 2030. As a result, cities are facing the problem of rampant & un-organized utilization of land which becomes quite prominent especially in the developing countries. The high influx of population leads to more demand for buildings and infrastructure facilities which at some point would gradually lead to higher demand than the actual supply, hindering the carrying capacity. As a result, the concrete in the city not only impacts the climate of the area but also disrupts the comfort of living for people within the city making it challenging in the long run considering the climate change crisis. The authors of the present paper hypothetically conceptualize the optimization of concreting to non-concreting of an ideal urban area to help address the discomfort alongside contributing to a greener city to cope up with climate issues. A hypothetical city model with 5 lac population is assumed to calculate the optimum amount of green and built space as per World Health Organization (WHO) norms. A range of per capita green spaces from 9 sq. m to 50 sq. m depending upon the availability of space is looked upon to arrive at the maximum values of built spaces a region/block should have. Later, a conceptual ideal urban area model considering a satellite town at any place in the world is visualized along with the natural wind direction and speed as retrieved from its wind rose diagram. The conceptual analysis would result in deriving the minimal green spaces required for a city when planning for its development, alongside open paths for a simulation-based modelling approach. The process of going from a conceptual model to a detailed simulation-based modeling would help in critically looking at the underlying parameters and analyzing the city or space in a profound manner. And can be further be used as one of the prominent aspects and tools while planning a city by the respective development authorities.

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Biography

I am an Urban Planning professional with more than 4 years of work experience in subjects related to climate change, resilient cities, environmental management, stakeholder participation and policy making. I hold a strong interest in qualitative & quantitative research work and wish to create an impact with my skills and expertise. With an additional degree in architecture, I strive to work in the field of vernacular construction styles, climate friendly & design ideas and integrating the design process in accordance with environmental protection and climate safety. I am dynamic, creative and detail oriented with a flair towards unraveling different green concepts.

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Green buildings - Assessing tools and sustainable solution

Dr. Kankan Mukhopadhyay
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Dr. Akshey Bhargava
Ex. Member Secretary, Rajasthan Pollution Control Board, Jaipur, Professor and industrial adviser,CEPT University, India

Abstract

Dramatic change in modern lifestyle globally has created an undeniable challenge in the construction sector to achieve the triple bottom line concept of sustainability. Therefore, to overcome these challenges and making the construction more sustainable, the 'Green building' concept emerged in the field. 'Green building', now is a popular term worldwide as it implies the measurement necessary to mitigate significant impacts of the building stock on the environment, society and economy. Accurate site selection, building design and construction, proper planning about operation, maintenance, and removal throughout the complete building lifecycle with a reasonable cost are crucial factors to made sustainable 'green building'. In this context, assessing the green building performance, numerous green building rating tools have been developed and applied. But most of the certification procedure restricted in building design and planning while in reality the actual lifecycle of a 'green building' ranges beyond these initial phases and its full profits being more apparent during the operational stages of the building. The authors of the present have established a key credit criteria by evaluating all existing widely used eight 'green building' rating tools with application of innovative tools and technique to come up with a sustainable solution.

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Biography

I, Dr. Kankan Mukhopadhyay acquired my B.Sc. (Zoology (H), Burdwan University, West Bengal India) M.Sc. (Environmental System Management, Calcutta University, West Bengal ,India), M.Tech (Safety and Occupational Health Engineering, Bengal Engineering & Science University, Shibpur (BESU, now IIESTS West Bengal India) and Ph.D (Presidency University, Kolkata, West Bengal, India). I did my thesis on Efficacy Appraisal of Synthetic Bimetallic Nano-aggregates for Fluoride Removal from Drinking Water through Batch and Fixed-Bed Column Operation Technology. I have published 10 papers in national and international journals and conference proceeding with ISSN and ISBN No. I have put in 6.5+ years of experience of working in the Higher Education environment- a large part of which comprises of handling and accounting for project finance as well as scientific research in different environmental sectors. I am a scientific Researcher with a demonstrated history of working in the environmental services industry where I expertise in Nanomaterials, Water Treatment, Nano-filtration, Carbon Sequestration, and Environmental Awareness coupled with strong research orientation in contaminated geochemistry, groundwater treatment and nanotechnology.

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Green roofs for healthy living in Cities: A new normal since Covid 19

Dr Phibankhamti Ryngnga
North Eastern Hill University, India

Abstract

The concept of green roofs in developing countries have emerged long time back, but the sudden rise and drastic increase in volume was seen particularly since Covid 19. The pandemic has made urban residents to realize the importance of converting grey roofs to green roofs. Green roofs also serve several purposes for a building, such as absorbing rainwater, providing insulation, creating a habitat for wildlife, increasing benevolence and decreasing stress of the people around the roof by providing a more aesthetically pleasing landscape, and helping to lower urban air temperatures and mitigate heat island effect. Green roofs provide shade and remove heat from the air through evapotranspiration, reducing temperatures of the roof surface and the surrounding air. On hot summer days, the surface temperature of a green roof can be cooler than the air temperature. Green roofs can be easily installed either low cost or high cost on a wide range of buildings. They can be as simple as a 2-inch covering of hardy groundcover or as complex as a fully accessible park complete with trees. Green roofs not only add aesthetic appeal to the unused roof space that is available in most urban areas; they also provide many benefits: Improved human health and comfort, reduced energy use, reduced air pollution and greenhouse gas emissions, Enhanced storm water management and water quality, etc. Cities have been gradually been a better place since pandemic due to people's choice to opt for gardening due to lockdown. So, in order to kill boredom, the urban residents opted gardening like vegetables, trees, and flowers on their grey roofs which in turn contributed to healthy cities. Thus, this paper will accentuate the significance of green roofs which in turn betters urban environment that have contributed for healthy living in cities.

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Biography

Dr (Mrs)Phibankhamti Ryngnga received her doctoral degree from Jawaharlal Nehru University, New Delhi. At present she is a faculty of the Department of Geography, North Eastern Hill University, Shillong, Meghalaya, India. She specializes in Urban Development and Planning & Remote Sensing and GIS. She is also involved in various research and projects in the field of social sciences, remote sensing and GIS. Few of her projects were 1. Dynamics of Morphology of Shillong Urban Agglomeration, (2007) 2. Growth of Informal Sector in Shillong and its Repercussions (2008), Monitoring traffic flow in Shillong using RS & GIS (2010). A pioneer of an Urban Community Resilience group for Sustainable Development to combat Covid 19 through popularizing urban roof farming for sustainable living during pandemic.

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Green Building Strategies and its Impact on Urban Transformation

Manasi Menon
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Dr. Akshey Bhargava
Ex. Member Secretary, Rajasthan Pollution Control Board, Jaipur, Professor and industrial adviser, CEPT University, India

Abstract

Collectively the built environment is responsible for nearly 40% the global carbon dioxide emissions today [1]. With the rapid migration of people, the population and the extents of the urban area are increasing significantly. Presently 55% of the population live in urban areas and is projected to increase to 68% in the coming decades [2]. This increase in population poses a serious threat to the surrounding environment and the quality of living. With the lack of resource management and increase in consumption there is a high risk of insufficient water and energy sources.

Green building concepts is a potential solution to reduce the overall emissions and is key to sustainable urban development. It is the practice which aims to reduce the impact buildings have on the environment and human health. It accesses both the operational and embodied carbon emissions of the buildings. The process has an insight into the siting, construction, renovation, operational maintenance and demolition.

This research paper describes the different green building strategies in urban areas along with their technical applications. The main focus is on energy efficiency, water savings, providing natural air ventilation, reduction and flushing of indoor air pollutants within new building construction. The paper aims to understand the overall impact of these strategies on the environment coupled with the merits and their design principles.

Keywords

Green building strategies, sustainable urban development, energy efficiency, natural air ventilation, indoor air pollutants, water saving

Biography

Manasi Menon is a graduate with a Bachelor's Degree in Architecture from Manipal Academy of Higher Education. With experience from Gensler, she has worked on different phases of design and implementation of projects. She is passionate about sustainable architecture which led her to co-founding Carbonology, a podcast about the urgent problem of carbon in the built environment.

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Study on assorted solid waste including green concrete mix design

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Delhi Technological University, India
Abhishek Sharma
Environmental Engineering Alumni of Delhi Technological University, Founder - Paryavarnam (DTU) Newsletter, India

Abstract

Green concrete is described as concrete instilled with environmentally sound material being a partial or absolute replacement for cement and/or fine or coarse aggregates. This environment-friendly material could come from waste or residue from manufacturing processes.

Ideally, some of the assets of green concrete such as carbon emissions, energy-saving, and even wastewater management should come in handy keeping the future in mind. These strengths could be of use in multiple ways. The production of green concrete subsides the clamour of using traditional one in the anticipated sustainable developmental applications.

For this research paper, a comprehensive analysis was endeavoured to investigate the entire usage and benefits of green concrete. Thenceforth which we attempted to compose our green concrete mix utilizing waste readily found on the university campus like single-use plastic (cutlery and straws), plastic pen body, sharpened pencil waste, and tissues. The designed mix was next analysed for compressibility and compaction in the laboratory, the readings for which are presented in the research paper.

The fundamental aims for this research paper are promising to civil and environmental engineers; however, there is something insightful to be found for readers of all magnitude of caliber.

Keywords

concrete, green concrete, sustainability, waste, environmental applications, civil applications, reducing waste from educational institutes.

Biography

Abhishek Sharma - Environmental Engineering Alumni of Delhi Technological University, Founder - Paryavarnam (DTU) Newsletter , Project lead of Project: To explore the Possibilities of Recycling/Reusing of Rice husk ash & Flyash , Part of departmental Society, Interests include in subjects such as Building materials and construction, Waste water engineering, and Structural Analysis

Saman Sohail - Environmental Engineering Undergrad at Delhi Technological University, Founder - Paryavarnam (DTU) Newsletter, Part of departmental Society, Interests include in subjects such as Building materials and construction, water engineering, and Strength of materials.

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Green Industrialization of Readymade Garments Sector in Bangladesh

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Bangladesh Agricultural Research Council, Dhaka, Bangladesh

Abstract

The purpose of this study was to determine the extent of green industrialization of Ready Made Garment (RMG) in Bangladesh. Two green industries namely, Rami Holdings Limited and Plummy Fashion Limited of Narayanganj District were purposively considered for the study. Data were collected from a sample of randomly selected 263 RMG Workers and Supervisors out of 840 from the mentioned two (2) RMGs. Simple and direct questions with different scales were used to obtained information. The study was conducted during the time from 02 June 2020 to 30 August 2020. Eleven (11) selected characteristics of the RMG Workers and Supervisors were considered as the independent variables. Out of 11 top Leadership in Energy and Environmental Design (LEED) certified factories of the world, eight (8) factories are situated in Bangladesh. Findings revealed that overwhelming majority (84.41%) of the RMG Workers and Supervisors perceived low to medium green industrialization of RMGs in Bangladesh. The mean of green industrialization of green and non-green RMGs were 33.22 and 14.89 respectively as perceived by the workers and supervisors. The calculated value of't' (193.788) was significant at .001 levels which was clearly indicated that green industrialization of green RMGs was higher than non-green RMGs. The items wise green industrialization index revealed that "ensure enough sunlight and solar power utilization to reduce the cost of electricity" ranked first followed by "keeping about 50% free space of total factory premises to ensure enough trees for enough ventilation facilities", and "assure factory workers housing facilities". The other twelve important green industrialization items in descending order were "use of high solar reflecting paints in rooftop areas", "use of eco-friendly light in factory", "use of re-cycling bricks", "assure nearby market for shopping", "use of sprinkler for fire incident", "assure schools for workers children", "use of hand gloves during working", "collection of rainwater for factory", "access waste water treatment plant (ETP)", "use of fire alarm for factory", "use of eye guard during sewing" and "use of musk during working". The correlation coefficient was initially computed to determine the relationships among all the variables. Due to misleading results from multi-collinearity, step-wise multiple regression and path analyses were used to explore the contribution and effect of the selected characteristics of the RMG Workers and Supervisors to/on the green industrialization of RMGs as

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perceived by them. The analyses indicated that out of 11 variables only 4 variables namely decision making ability, knowledge, cosmopolitness and education had significant contribution and effect to/on the green industrialization of RMGs as perceived by the Workers and Supervisors. The result indicated that the whole model of 11 independent variables explained 63.5 per cent of the total variation in green industrialization of RMG. But since the standardized regression coefficient of 4 variables formed the equation therefore, it might be assumed that whatever contribution was there, it was due to these 4 variables.

Biography

Dr. Md.Taibur Rahman earned his PhD from Sher-E-Bangla Agricultural University of Bnangladesh. He is good researcher in Agricultural Sciences as well as Eco friendly environments in the globe. His Expertise is in Green industrialization, Environmental specialist, Agricultural Research, Impact Assessment, Eco friendly Environment, Climate Smart Agriculture and so on. Dr. Rahman has 15 years' experience of research and publications as well as good administrator. Currently He Works in Bangladesh Agricultural Research Council which is apex body of Bangladesh in agricultural research.

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Hollow Concrete Blocks Making From Household Wastes: A Way of Saving Himoga-an River

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Northern Negros State College and Science and Technology, Philippines
Ruperto P. Bayawa JR
Northern Negros State College and Science and Technology, Philippines
Leonardo N. Morales JR
Northern Negros State College and Science and Technology, Philippines

Abstract

This study aimed to lessen and promote zero waste emission in Himoga-an River by recycling household wastes such as disposable surgical facemasks and plastics' bottles and wrappers into a hollow concrete blocks (HCB) with a volume of 200mmx150mmx 400mm using concrete stretcher molder. Furthermore, this study aimed to determine the physical properties of a HCB such as moisture movement, water absorption, drying shrinkage , compressive strength and density; determine the weight of a HCB ; determine the PSI (pound per square inch) of HCB, compare four strengths of measures and evaluate HCB performance in terms of durability and usability . The Class Aa ,Class A, Class B and Class C strengths of mixtures were compared in terms of physical properties, weight, and PSI. This study utilized quantitative research such as descriptive and experimental. Parameters for durability covers only to oxygen permeability and water sorptivity, and it found out that the lower the water sorptivity index, the better is the potential durability of the HCB. Mixing and curing were the two important process in making the HCB. The usability test was done by the panels of five, three were masons expert from the place and the two were the hollow blocks factory entrepreneurs. The parameters used in usability test were the porosity, permeability, sorptivity and thermal properties of HCB. This was done in the riverbank of Himoga-an River, Brgy. Fabrica, Sagay City, Negros Occidental, Philippines. The aggregates used were the household wastes of the two Baranggays, Fabrica and Paraiso , the sand was taken from the river itself, and the cement was from the commercial store of the said place. The Class Aa HCB with household aggregates were potential

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alternative for high grade HCB available in the market which is utilized for house construction and other infrastructure projects.

Keywords

Himoga-an River, Disposable surgical facemasks' wastes, Hollow Concrete Blocks, Household wastes, Promotion of zero waste

Biography

Though new in the CHED (Commission on Higher Education) Ms. Anabelle Villaceran is not new in the government service. As a license Professional Teacher (LPT), she worked in the Department of Education for almost twenty-five years as a Technology and Livelihood Education Teacher in Junior and Senior High School . She was assigned as Teacher in Civil Technology ,Technical Drawing , Agriculture and Fishery Arts. In her late years in the Department of Education she was assigned as Food Trade Teacher when K-12 Curriculum was being embraced again.

In her three years as instructor in Northern Negros State College of Science and Technology she had patented twelve utility models in food innovation. Presented five researches in Regional, National and International level. Research authors of the recent approved funding for Sustainable Agri-tourism and Facemask Production.

Anabelle Villaceran earned her Bachelor of Science in Industrial Education Major in Home Economics at CHMSC, Master in Education at St. La Salle University-Bacolod and On-going Ph.D. in Technology Management at Northern Negros State College of Science and Technology.

She lives in Brgy. Fabrica, Sagay City, Negros Occidental, Philippines, where she observes and hears the rhythm of the flowing noise of Himoga-an river and enjoys walking on the edge of the river bank.

Environmentally Sustainable Treated Sewage Application For Development Of Green Infrastructure: A case study of Faridabad, Haryana, India

Pratistha Rai
M Sc. Environmental Science, Babasaheb Bhimrao Ambedkar University, India
Dr. Akshey Bhargava
Department of Chemical Engineering, University of the Philippines , Philippines

Abstract

With the rapid growth of urbanization and industrialization, the generation of municipal sewage is increasing on a time scale. In the majority of India's class 1 and 2 cities, treatment and efficient disposal facilities are currently unavailable. As a result, wastewater discharge is one of the most common practices performed that endangers the local environment as it is either being discharged into rivers, natural water sources or on low lying lands thereby polluting the water resources and causing various diseases. There exists a strong need to address this problem on a scientific and practical scale with an integrated and sustainable approach. An effort has therefore been made by the authors of the present paper to carry the case study of Faridabad, Haryana; India in which population trends along with forecasting is done. Similarly, sewage generation patterns and forecasting on a time scale were investigated. There has also been an effort to highlight waste water treatment systems, with a particular emphasis on the design of an aerated lagoon system for treating urban sewage. The sludge so generated during the treatment of sewage is proposed to be used for producing methane gas which has an economic value, making the system sustainable. Furthermore, the treated wastewater will be used to build green infrastructure in Faridabad by providing scientifically designed distribution channels carrying treated wastewater, development of green belt having regard to aero-dynamics of town, green parks, picnic spots with nice landscapes to attract people and raise revenue. In recent years, green infrastructures (GI) are being increasingly connected to urban water management in the quest for both immediate solutions and long-term transitions to sustainability. An attempt in this regard, has been made by authors to make Faridabad as green city by using treated sewage wastewater.

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Keywords
Environment, sustainability, sewage, treatment, green infrastructure, economy

Biography
Pratistha Rai has received her post-graduation degree in Environmental Sciences from Babasaheb Bhimrao Ambedkar University. She is also a recipient of University Gold Medal for her outstanding academic performance in her Master`s. In addition to this, she also has qualified national level examination, UGC-NET JRF. She aims to be an expert in waste management, its utilization and bio-remediation technologies where she can chip in ways to overcome future challenges.

Environmentally Sustainable Waste Management- An integrated Approach

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Abstract

Waste free activities are hard to find as activities dissipate energy and matter thereby generating huge quantity of waste not only in India but also globally. Such wastes are usually being disposed off indiscriminately causing serious threat to environment and its resources along with health of people to a great extent. There is a strong need to treat waste as a valuable resource thereby evolving innovative technological options coupled with research and developmental activities to transform waste into value added products with economic benefits to provide sustainability. The authors of the present paper have elaborated variety of solutions that can be applied for the reduction, reuse, classification, recycling and transportation of non-hazardous and hazardous waste, resulting in economical solutions that meet local, national and international standards and also to mitigate environmental impacts and to optimize waste as a resource. The authors have described various technological options to transform municipal solid waste into usable products in the form power, compost, bio fuels and fuel pallets with comparison of economic benefits and their sustainability. An effort has also been made as to how the plastic is recycled or processed into fuel using pyrolysis which not only cleans the environment, but also develops a valuable resource and provides local jobs. Similarly, authors in the present paper have also described how the waste paper is collected and transported to industries producing recycled paper with economic benefits.

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Biography

Dr. Sheetal Kamble (PhD) is an Assistant Professor in the Environmental Science department of the School of Sciences of P.P Savani University. She has pursued her Doctoral in Environmental Engineering and Management from National Institute of Industrial Engineering (NITIE), Mumbai. She has published more than 25 research papers in International journals of repute. She has presented more than 10 research papers in several National/ International conferences. Her areas of interests in teaching and research are Life cycle assessment, Sustainability, Wastewater treatment, Solid waste management, Environmental impact assessment, Biodiversity and Conservation, Circular economy and Multi-criteria decision making.

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Environmentally Sustainable Municipal Solid Waste Management-A Case Study of Ahmadabad, India

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Abstract

"Waste is not a waste until we waste it"

Municipal Solid Waste Management (MSWM) plays an important role in sustainable development. The abysmal state of and challenges in MSWM in urban India is the motivation of the present study. Zero waste is a latest visionary concept for confounding waste problems of our society. Urbanization contributes enhanced municipal solid waste (MSW) generation and unscientific handling of MSW degrades the urban environment and causes health hazards. The expansion of urban areas, changing patterns of consumption and industrialization resulting in an increase in municipal waste generation are deteriorating the quality of environment, thereby posing a risk to sustainable development. The seriousness of the problem increases in a scenario where natural resources are getting scarcer and the traditional system of landfills still being practiced extensively for solid waste disposal. The authors of the present paper address the issue of MSW by taking the case of Ahmadabad. It discusses the present municipal waste management system, new technologies, projected population and solid waste generation. In an evolutionary approach, it points out the challenges that the sector is

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facing and makes an attempt to suggest a way forward through new technologies and estimation of value added products that can be produced from the solid waste.

Biography

I, Vishakha Kumari, from Patna, Bihar, India and from last 4 years I was doing a job in research field as a microbiologist. I have done my M.Sc in biotechnology from Banasthali Vidyapeeth in 2016. I was involved in a dissertation work on the topic of " Cytosolic Tryparedoxin Peroxidase of Leishmania donovani is a potential diagnostic marker for Visceral Leishmaniasis" from ICMR I have Completed my graduation and earlier schooling from Patna. I love to dance, travel, poetry writing, and spent time in valuable learning. Learning is my passion and involved in multidimensional innovative research.

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Assessment of Knowledge, Attitude, and Practice of Diabetic Patients Regarding Sharps Disposal

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Alexandria University, Egypt

Abstract

Introduction: Insulin-dependent diabetic patients are the highest group of patients using non-hospital syringes and needles. Without proper sharps disposal practices, accidental injuries with contaminated sharps occur frequently. People exposed to sharps face the risk of contracting life-threatening diseases such as hepatitis B virus, hepatitis C virus, and HIV infections. However, few studies have been performed on the disposal of these patients' sharps in the community environment.

Objectives: The study aimed at assessing the knowledge, attitude, and practices of diabetic patients concerning the disposal of sharps in community settings and the factors influencing them by using a validated interview questionnaire.

Methodology: Cross sectional study was done. Questionnaire items were checked, modified, and pre-tested by a pilot study to assess the required time and understanding for questions and to confirm questionnaire validity. Based on previous Ethiopian study; knowledge assessment was considered as primary outcome; the sample size was calculated using Epi info7 software. Three hundred eighty-four patients were selected by systematic random sampling and interviewed to answer the questionnaire at 2 diabetic centers, Alexandria, Egypt. The researcher sought the approval of the Ethics Committee of the High Institute of Public Health for conducting the research.

Results: Respondents had fair knowledge (mean score of 7.17 ± 2.21 out of 10) and a positive attitude (mean score of 3.682 ± 0.87 out of 5) towards sharps disposal. However, the majority (95.1%) had poor disposal practice. Among participants, only (4.9%) had acceptable disposal techniques through health care facilities, 7% reported having received sharps disposal advice, and interestingly, 4.4% used their syringes and needles only for one time. Good knowledge scores were related to high educational level, single marital status, living in an urban area, and being employed. Attitude was influenced by occupation status. Parameters predicting disposal at health care facilities were receiving advice from HCW, knowledge score, and using insulin outside the house.

Conclusion: Most patients at El Horraya and Louran diabetic centers had inappropriate sharps disposal practices. Accordingly, we suspect a massive public health and environmental problem which

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implied the necessity to implement a proper community sharps disposal program immediately and to educate diabetic patients on appropriate techniques of sharps disposal in the future.

Keywords
Diabetes mellitus, Sharps disposal, Insulin syringe, Insulin needles.

Biography
Hossam Soliman, Associate Alumina of Harvard Medical School, is a polyclinic manager and clinical researcher at HIO, MOH, Egypt. He received a bachelor's degree in Dentistry from Alexandria University and a master's degree in Public Health from HIPH, Alexandria University. He successfully obtained CSRT (Clinical Scholar Research Training) program from Harvard Medical School, USA. He is interested in research designing, data analysis, and peer reviewing.

Techniques and approaches for plastic waste management and assessment of its influence on Environmental Performance Index (EPI)

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School of Management, IMS Unison University, India
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Abstract

Plastic products have become an integral part of human daily life. Their excessive utilization, mismanagement, and chemical properties result in massive pollution load and adversely affect the nature. Nearly 400 million tons of plastic are produced each year out of which 40 % is single-use. Consequently, more than 8 million tons of plastic enter the oceans each year and there is the possibility that plastic weight may outweigh the number of fish in these oceans by 2050. Therefore, it is imperative to manage plastic waste properly, so that they do not significantly impact human health and the environment. An effort has been made to assess the approaches and techniques (such as adsorption, degradation, and chemical treatment) to mitigate plastic waste. Further, we tried to explore the current scenario of plastic waste materials as solid waste may impact the nation's Environmental Performance Index (EPI). The statistical tool has been applied to derive meaningful inferences. Our study reveals that, plastic waste poses a threat to human life, generating toxic air, water, and soil pollutants, harming marine life, and contributing to climate change. A noteworthy contribution of the study has been the inter-relationship that it has able to establish EPI and plastic waste management system. It has been observed that countries having high EPI have a better waste management system in comparison to their counterparts having low EPI. Additionally, even after the

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application of mitigation techniques and approaches, still enough amount of plastic waste are in nature to have impact on environmental quality, adversely. The study provides useful insights into the plastic waste management system. Indeed, this is the time to rethink for alternatives and reduce to plastic before reuse, recycle and techniques for their removal to protect earth and future.

Keywords
Environmental Performance Index (EPI), solid waste management, plastic waste, climate change.

Biography
Mr. Prashant Pandey is an Assistant Professor in School of Management at IMS Unison University, Dehradun. He has completed his M.Tech in Environmental Technology from Doon University Dehradun and B.Tech in Biotechnology. He qualified UGC (NET) two time with 99.7 and 97.9 percentile and is presently pursuing his Ph.D. from Doon University. Mr. Prashant has more than 4 years of research experience and produced many research articles in international journals (Environmental Chemistry Letters-I.F-9.03, Colloidal Science & Interface Communication, I.F-4.9) and conferences. During his Ph.D. tenure, he has also awarded by Young Scientist, 2020, award by Uttarakhand Council of Science & Technology-Uttarakhand for his work on Indoor Air Quality Improvement. He is also a recipient of prestigious International Scholarship, Stipendium Hungaricumn Scholarship, Hungary and Italian Excellence Government Scholarship-Italy in 2017 and 2018

Emerging Need of Municipal Waste Management- A Case Study of Vadodara, Gujarat, India

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Abstract

The municipal solid waste is being generated on a rapid pace not only in India but on a global scale with the increase in population and lifestyle of people on a time scale. Such a huge quantity of waste is posing a serious threat to human health and also on environment as a whole. Many cities in India do not have any treatment facility and scientific disposal of such wastes thereby developing large heaps of municipal solid wastes left untreated causing ground water contamination through the process of leaching, generation of mosquitoes leading to various diseases and odor problems. With problems being witnessed at an alarming rate, the authors of present paper have attempted a case study of Vadodara in Gujarat, India wherein the population is forecasted to 2051 and waste generation is estimated on a time scale. Solid waste generation per capita per day has been assumed for different decades and total quantity of waste estimated for the year 2021 to 2051. The authors have also estimated the amount of power generation, compost, biofuel and fuel pallets for such wastes during different decades along with its economic value. Such a solution not only facilitates in improving the quality of environment and inhibits pollution but also provide environmentally sustainable approach by providing economic benefits to make the system sustainable.

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Biography

Priya Christie is currently working as a lab chemist at Vadodara Enviro Channel Ltd. She has conducted study on land use-land cover change of particular areas of Gujarat with the help of remote sensing for her research. Her research interests include sustainable development, prediction models on land cover change, disaster and risk reduction and management

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Characterization of Eco-enzyme and its impact on growth of *Phaseolus vulgaris*

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Abstract

Food wastage in India is a rapidly increasing problem for food waste management and this excess food end up into landfills or being littered. To subsist the issue with effective and efficient solution various methods including composting, cattle feeding and cost effective alternative eco-enzyme can be utilized. Eco-enzyme or garbage enzyme is a multipurpose broth prepared with fruit, vegetable peels jaggery and water. The broth can be used for the treatment of grey water, removal of heavy metal, as a bio-fertilizer and for different household activities at different dilution. In the present study physicochemical parameters of eco-enzyme were analyzed. Further the role of eco-enzyme as a bio-fertilizer was examined in 3 different dilutions (10%, 15%, 20%). As the concentrated eco-enzyme had acidic pH 4.26, high electrical conductivity 1.49 µSiemens-1/cm also very high COD 4226.84mg/l which could produce deteriorating impact on plant growth. Germination percentage was measured in Phaseolus vulgaris for the different dilutions. The highest germination percentage was observed in Phaseolus vulgaris (93%) in 10% dilution. Significantly better plant growth with vigour index 493.22 cm was observed in Phaseolus vulgaris when 10% dilution of eco-enzyme was employed as compared to control with vigour index 328.77cm.

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Biography

Nitika Narang is a research scholar in the Department of Environmental Sciences from Gurukul Kangri Deemed to be University, Haridwar, Uttarakhand. She is currently working to mitigate large amount of organic food waste through use of eco-enzyme or garbage enzyme. She also wants to aware common people about the large potential inbuilt in organic waste to replace the inorganic fertilizers.

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Solving the Puzzle of 'Holy' Hazard of Floral Wastes: Modern Sustainable Approaches

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Abstract

India is a country of religious condominium, with diverse religious beliefs, mythology and social practices. One common problem that relates to all these is the floral waste disposal. Flowers are discarded after single use in many religious rituals, social celebrations etc. The faithful leave the temples with the blessings and prasad, but leave behind piles of blossoms and leaves that lead to accumulation of 'holy' waste add up to 4-5 million tones daily. As they can't be mixed with other municipal solid waste or landfills for obvious religious issues, there isn't any specific policy for disposing these 'holy' wastes. These get dumped in the banks of local waterbodies, get decomposed in open environment and the organic-rich leachate can get mixed into the waterbody that may lead nutrient enrichment in aquatic environment. An eco-friendly measure for management of such floral waste is essential.

In this respect, it is interesting to note that the policy statement of Pollution Prevention Act 1990 of US-EPA mentions that pollution which can't be prevented should be recycled in an environmentally safe or sustainable manner wherever feasible. Chinese rose, Rose, Camellia, Marigold, tube rose, butterfly pea, Jasmine, chrysanthemum etc. are very common in these wastes across all the seasons. Such wastes have various properties like high sugar content, beautiful aroma and color, which can be used for recycling them into various value-added products. These include incense sticks, essential oils, natural edible colors, biofuels, compost, biosorbents etc. Recent research efforts have shown the

potential importance of organic colors both for dyeing and utilization as food colorants. Lutein, a component that can be isolated from the dried marigold petals, is very essential nutraceutical for treatment of macula degeneration in human. Anthocyanin, isolated from butterfly pea flower petals, can be also very significant edible color that also has significant nutraceutical properties. Also, the floral aroma can be utilized in form of essential oils isolated from the flowers. These wastes can be a

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very good resource for producing incense sticks. Also, bioethanol or biofuels can be extracted from the controlled decomposition of these flowers. Recent studies have proven the efficacy of utilizing the dried and ground flower powder for sequestering metallic pollutants like Pb
(II) and Cu (II). High nitrogen content of decomposed flower can support growth of redworms. Very good quality of vermicompost can be harvested from such growth beds. Being rich in fiber content, these floral wastes can be a very good resource for paper production. Recent report has mentioned such utilization for making colorful hand-made papers.
Such approaches floral waste utilization, in tune with sustainable development goals, can provide us a perfect solution for countering the 'holy' hazard. Extensive research in this field would be helpful for developing proper policy for waste management and protecting the waterbodies, which are the lifelines of civilization.

Keyword
Floral wastes, Organic color, food colorant, Nutraceutical, vermicompost.

Biography
I'm Ahana Paul. I was born on august 20, 1996 at Naihati in West Bengal, India. I've completed B.Sc. from West Bengal State University in 2018. My subject in graduation was Botany, Zoology, Physiology. Now I'm doing M.Sc. from Adamas University.
Among all the modules of my M.Sc. course Atmospheric Science and Meteorology, Solid Waste Management, Ecology are my subjects of interest.

Studies on Application of Spent wash as a Nutrient for Agriculture waste Composting

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Abstract

Due to high organic loading rates, several chemicals in distillery spent wash have high B.O.D. and C.O.D. values. The cost of treating and disposing of spent wash is expensive. Hence Composting is one of the most effective methods for achieving this. Sugarcane farms agricultural waste is used as a raw material. The goal of this study is to figure out how to compost agricultural waste utilizing aerobic and windrow composting techniques. Pits should be 3m long, 1.5m wide and 1m high for aerobic composting, and 3m long, 1.5m wide, and 1.2m high for windrow composting (Composting, W.H.O Book). Turning should be done on the 5th, 17th, and 30th days of the interval for aerobic composting. For windrow composting, it should be provided after 2-4 weeks. To decompose the agricultural waste cow dung and spent wash were utilized as a media. The study research indicates that it should be cost-effective. The quality of nitrogen, phosphorus, potassium and the mass of carbon to nitrogen ratio (C/N ratio) were analyzed. The parametric values, such as nitrogen 0.8 percent, phosphorous 0.4 percent, potassium 0.4 percent, and C/N ratio = 20 to 30, are all within acceptable ranges, and the results show that the compost is ideal for plant growth.

Keyword

Spent wash, Nutrient , Cowdung, Decompose, Agricultural waste, Composting

Biography

I'm Shubham Shankar Magdum. I've completed Mtech in Civil (Environmental) Engineering with having marks First class from Walchand College of Engineering (An Autonomous Institute), Sangli.

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Treatment of Dye Industrial Effluent by Using Combination of Advanced Oxidation Processes

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Abstract

Advanced waste water treatment of effluent becomes essential if the effluent contains high concentration of solids (suspended, colloidal, and dissolved), heavy metals, organic and inorganic substance. AOP (Advance Oxidation Process) is applied when it is made mandatory to achieve ZLD (Zero Liquid Discharge) and complete recycling of treated waste water by the regulatory authorities. The authors of the present paper have carried out a research study of dye industry mainly containing Rhoda mine B dye which is highly hazardous and can significantly pollute the water resources like rivers, ground water etc if discharged untreated. Such a waste cannot be allowed to be discharged into environment without advanced degree of treatment. An attempt has been done to collect composite samples of this waste water and analyzed in the laboratory in respect of various parameters, particularly Rhodamine B and Ammonical Nitrogen. The main focus of the study was to remove Rhoda mine B and Ammonical Nitrogen to a significant level which is acceptable under the mandatory provisions prescribed under Environmental Protection Act of 1986 and rules made there under. In order to achieve above, an effort was made treat the waste water effluent using U.V treatment, Electro-coagulation, and Filtration process with success.

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Biography

Jay Pandya, currently a B.E student of Environmental engineering from L.D. College of Engineering, Ahmedabad under the Gujarat Technological University (GTU). He is received diploma in Environmental engineering degree from K.J polytechnic under GTU. His research and intrest in field of waste water engineering, application of Air pollution control equipment and solid waste management.

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Sustainable Use of Compost Amendments from Grease Trap Waste and Water Hyacinth (*Eichornia crassipes* (Mart.) Solms) on the Growth Rate of Chinese Kale (*Brassica albroglabra* L.H.Bailey*)*

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Abstract
Grease trap waste and water hyacinth is a major problem of sewer clods and impedes water flow, a factor in flooding. Both of which can be proceeded for use as soil amendments. This research had two objectives: 1) to study the appropriate characteristics of the ratio between grease trap waste and water hyacinth for compost amendments production and 2) to study the efficiency of compost amendments from the growth rate of Chinese kale. The results of the analysis revealed that moisture, organic carbon, pH, conductivity, C/N ratio, nitrogen, phosphorus, and potassium are conformed to organic fertilizer standards of the Announcement by the Department of Agriculture: Criteria for organic fertilizers 2014, Thailand. Comparison of compost quality from macronutrients revealed that the ratio between grease trap waste and water hyacinth (2:1) was of the highest quality. Comparing the average growth of Chinese kale by plant height, a number of leaves, leaf width, leaf length, and fresh weight, found that the efficiency of compost containing grease trap waste and water hyacinth (2:1) affected the maximum growth rate. In conclusion, the study found that the utilization of residues can reduce costs and waste and increase resource renewal, contributing to future sustainability.

Keywords
Sustainable Use, Compost, Grease Trap Waste, Water Hyacinth

Biography

Nisa Pakvilai was born in Bangkok, Thailand, in 1979. She worked as a lecturer in the environmental science program, Faculty of Science. Her research fields are solid waste management, alternative renewable energy, and Sustainable development.

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Generation of Plastic Waste Material in Daily Life Routine: Assessment and Evaluation


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Abstract

Plastic waste is one of the serious concerns now days. Country like American consumes 109kg plastic every year to which about 94 per cent of this comprises thermoplastic, such as PET (polyethylene terephthalate) and PVC (polyvinyl chloride). However these plastic may considered recyclable and because of strong waste management systems plastic waste impacts less to human and environment as compared to developing countries. India's four metro cities produce 1670 tonnes of plastic waste every day. Beyond the physio-chemical property, our mismanagement, lack of awareness caused the explosive production of plastic waste that goes to ocean via various water streams. Therefore, it is imperative to manage the plastic waste so we can take primitive precautions to protect human, natural resources and aquatic organism. On ground level it is important to measure how individuals involved in producing plastic waste in day to day life routine in terms of quantity. In the present study we shared a protocol with a questionnaire and weighing machine to more than 1000 individual. The individual were trained to fill the required data and information in form while producing any type of plastic waste, in which section includes: source of plastic waste, its type with symbol, weight, and its physical properties. The amount of plastic waste generated per day in daily life routine was observed and monitored for 30 days. After the completion of tenure the average amount of plastic waste generated in one day was estimated 0.028gm. The waste generated were observed after utility is over was found in sequence: polyethylene> toffee covering/chocolate covering> single use water bottles> packaging film> food packages.

Keywords

Plastic waste, single use plastic, mismanagement, polyethylene.

Biography

Ms. Shailee Parmar is an Assistant Professor in School of Management at IMS Unison University, Dehradun. She has completed her MBA from Doon University, Dehradun and is currently pursuing her PhD in Management. She has been actively organizing and attending Faculty Development Programs, Conferences, Seminars and Workshops. She is UGC-NET 2019(Management) and U-SET 2017(Management) qualified. She has around four years of professional experience in academics as well as corporate. Prior to joining IMS Unison University, she was associated with Uttaranchal University, Dehradun as an Assistant Professor. She has two research papers in peer-reviewed UGC-journals. Her area of teaching majorly includes various subjects in Marketing Domain. She enjoys being profoundly involved in extra-curricular student developmental activities

Cattle and Methane Emission

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Abstract

Methane emission from animals can be recorded by mass balance, micrometeorological and trace methods. These techniques can measure methane emissions from animals. Study of all these methods and awareness of the factors that affect methane emission can result in the development of mitigation strategies to reduce methane losses by livestock. Implementation of all these factors should result in enhanced animal productivity and minimised the contributions by farm animals to the atmospheric methane quantity. Increasing atmospheric concentrations of methane have enforce research workers to examine its source of origin. Approximately animals can produce 250 to 500Liters of methane per day. This level of emission results in estimates of the contribution by cattle to global warming that may occur in the next fifty to hundred years. Continuous manipulation of these factors can reduce methane production from cattle. Many scientific methods exist to quantify methane emissions from individual and herds of animals. Enclosure techniques are precise, but it requires trained animals and may limit animal movement. Isotopic and non-isotopic tracer techniques may also be used effectively. Prediction equations based on fermentation balance have been used to estimate methane emission. These equations are useful, but the assumptions and conditions that must be met for each equation limit their ability to accurately predict methane emission. Greenhouse gas emissions from livestock farming and in particular enteric methane from ruminants are criticized for one of the main contributors to climate change.

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Biography

Dr P.J. Kapadnis is the Deputy Director Research at Livestock Farm Complex, College of Veterinary and Animal Sciences, Parbhani, Maharashtra, India. The LFC is responsible for providing practical research and extension facilities to UG, PG, Ph. D students of Veterinary faculty. Also doing the Conservation of Red Kandhari cattle, Marathwadi buffalo, Osmanabadi goat and Decani sheep in Marathwada region. Dr P.J. Kapadnis, M.V. Sc in Veterinary Anatomy and Histology. Recipient of many awards and published 100 research articles in journals.

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A Comprehensive Review of Literatures on Environmental and Green Technology Education



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Erwin G. Tiberio
Faculty of Teacher Development, Philippine Normal University Visayas, Philippines

Abstract

This paper reports on a comprehensive review of 115 pieces of educational research and literatures relating to environmental and green technology education. The approach to this research was that of a systematic review (EPPI-Centre, 2007; Thomas & Harden, 2008). Despite the volume of academic literature in this field, the team of three reviewers found comparatively few empirical studies published in the period 2005 – 2017 providing findings addressing the review objectives. The review found only 68 empirical studies and research articles wherein findings addressed the research questions. The review of empirical studies, thesis and dissertations, and research articles identified the following themes: (1) Definition of Environmental education (EE); (2) Environmental education and green technology; (3) Environmental education practices; (4) Environmental education and climate change; (5) Environmental education management system; (6) Environmental education for sustainable development; (7) Environmental education and technology; and (8) Environmental education and disaster risks reduction. The review also found evidence for impact of the identified themes on the development of the EGTE curriculum. Thus, the reviewers recommend the identified themes as baseline information to be included in the initial draft of the EGTE curriculum of the university as response to its mandate being an environmental hub .

Keywords

Comprehensive Review, Literature, Environmental, Green Technology, Education

Biography

I hail from Cadiz City, Negros Occidental. As a language professor, I have been working with Philippine Normal University since 1994. In 1998, I completed my MA in Values Education at the University of Asia and the Pacific, Manila, through a scholarship grant. In 2009, I graduated from PNU Visayas, my doctorate in Educational Administration. Presently, I am pursuing PhD in English Language Education at PNU, Manila, through a faculty scholarship . My current role primarily involves instruction and research. The Publication and Materials Development Office is also under my care. My research interests focus on language and environmental education.

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Need of infusing Environmental ethics in Higher education system: Small step towards accomplishment of Sustainable Development Goals


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Abstract

The present paper focuses on the importance and need of inculcating Environment Ethics and values among students and hence taking a step forward towards accomplishment of SDGs which are to be fulfilled by 2030. Deterioration of the environment has been established as an actual, factual and chain of events which have been changing everyone's lives and not for the better. In 2019, a landmark report by the UNEP-hosted intergovernmental science-policy platform on Biodiversity and ecosystem services (PBES) and it warned that the pace of nature's decline is unprecedented in human history. Infusing Environment ethics among students via education with the help of teachers specifically will make them participate in environment friendly activities both at school and at home. They may also encourage and spread awareness among friends and family regarding the same, which is ultimately the most important contribution of our community towards fulfillment of SDGs pact-2030.

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Biography

Both the authors are currently working as a Senior Research Fellow (SRF) and pursuing Ph.D in Education from the Department of Education of Panjab University, Chandigarh.

Birkamal Kaur is having her Masters in subjects of Environmental science and Education, providing her keen interest in investigating the current status of environmental education among schools. She is having two years of working experience in Shivalik Hills College of Education, Nangal, Punjab. As a researcher, she has presented various research topics in conferences and seminars at both national and international level. Also, various articles are in the process of publication in the field of Education.

Navpreet Kaur is having her Masters in subjects of Economics and Education, providing her keen interest in investigating the current status of environmental education among schools as well as the higher education system of India. She is having 4 years of working experience as an assistant professor in Surjeet Memorial College of Education, Ferozepur, Punjab. As a researcher, she has presented various research topics in conferences and seminars at both national and international level. Also, various articles are in process of publication in the field of education.

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Social Aspects of Green Technology: A Review on Environmental Protection

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Abstract

In the last few years, a great variety of construction materials, systems, and technologies have been developed over the world, and pre-occupation about sustainability issues related to the field has become compulsory. Green technology is actually a broad term and a field of new innovative ways to make environmentally-friendly changes in day-to-day life. It is created and used in a way that protects natural resources and our environment. It is meant as an optional source of technology that reduces fossil fuels and demonstrates a lesser amount of damage to human, animal, and plant health, as well as harm to the world. The use of green technology is supposed to reduce the amount of waste and pollution that are created during production and consumption. It is also referred to as; environmental technology and clean technology. Researches have been done concerning innovation assuming environmentally friendly characteristics of those materials, systems, and technologies; however, little had been discussed about the social issues of sustainability. It must be taken into account that sustainability includes not only environmental, but also economic and social aspects, and the latter has direct implications on the well-being of society. The actions aiming for this goal should be based on historical and cultural values and in the relationship between citizens and nature because global problems of environmental degradation had forced our society to rethink the way of development and evolve the concept of sustainable development. Indeed, the new environmentally friendly technologies are fundamental to attain sustainable development. The aim of this study is to highlight the social characteristic or aspects for the protection of our environment through green technologies. The study is based on reviewing secondary data sources like journals, articles, newspapers, social media, books, etc.

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Keywords
Environment Protection, Green Society, Green Technologies, Social sustainability,

Biography
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Emergence and impact of plastic waste materials in the state of Uttarakhand (Mussoorie)



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Abstract

Tourism considered to be is one of the life lines in nation for their strong economy. However due to expansion of the tourism industry enormous amount of solid waste are generated especially plastic materials that are disposed without proper management leads to serious issue. The generated plastic wastes have detrimental effects on local marine environments. Our present study helps us to assess the source of generation of plastic waste, their amount, its type, and the reason behind in Mussoorie region of Dehradun, Uttarakhand, India. The study was conducted by surveying (500 tourist) tourism activities, shop keepers (265 number), littering behaviours, and existing solid waste facilities. Our assessment illustrates the tourism impact the amount of plastic waste generation in Mussoorie, especially in weekend days. Data obtained from tourist and shopkeepers through interviews illustrates the casual behaviour, ample of availability of plastic in market and improper waste management system in generation of plastic waste. Further, we also tracked the pathway of plastic waste from source of generation to their end site that was the water streams flowing to the city Dehradun, Uttarakhand. Findings suggest that the tourist plays vital role in producing plastics waste that block the water pathway systems in the city and ends up into the larger water stream due to poor waste management system (postconsumption management). Study demonstrates the need for littering policy to reduce littering in waste streams and creating the awareness on issue due to plastic waste after its utility is over. It is also important to highlight that the government need to take care of surveillance in market on using plastic bags either by sellers or consumers.

Keywords

Tourism, plastic waste, behaviour, management

Biography

Dr. Manisha is an Assistant Professor-Senior Scale in the School of Management at IMS Unison University, Dehradun. She has more than 5 years of Teaching, Research, and administrative experience and has served in responsible positions in organizations of repute. She is Ph.D., M.Phil., MA (Economics), B.Ed., One year diploma in Information Technology (DIT) and UGC (NET) qualified. She has published more than 14 research papers in peer-reviewed national and international journals indexed in Scopus, Thomson Reuters, Web of Science, and UGC Care. She has attended and presented papers in national and international conferences and seminars organized by institutions of eminence. She was awarded for best research paper from Shri Ram College of Commerce, the University of Delhi for the research paper titled "Changing Pattern of India's High Technology Exports with special reference to pharmaceuticals products" in 2016 and awarded for appreciation of certificate in the field of best research contribution by IMS Unison University, Dehradun in 2020. Her teaching areas include Microeconomics, Macroeconomics, International Trade, and the Indian Economy. Dr. Dhiman is an Associate Editor for the Pragyaan: Journal of Management a bi-annual refereed Journal.

Food Wastage and Post-Harvest Losses in India: A Qualitative Analysis with Certain Policy Implications

Ilma Rizvi
Jamia Millia Islamia University, India

Abstract

The on-going market trends may prove out to be a boon for developing economies like India. Most of the developing nations rely on agricultural sector in order to boost their overall economic growth and so is the case with Indian economy. Many times agriculture sector has to resort to providing food as well as employment to its people. There has always been a dilemma about the changing demand patterns and its impact on the economic performance of the agricultural sector. The recent epidemic of CoVid-19 has emerged as the changing phase for most of the developing nations. This epidemic has suggested more on strengthening the infrastructural facilities while simultaneously being concerned about the climate change. Past has always taught us about the importance of both climatic balance as well as agricultural balance in nurturing the economic performance of any nation. This is why there's always been a requirement to learn and implement more about the green and clean technology. During the lockdown phases, almost everyone has to resort to 'work-from-home' practice and with this new normal there has been a drastic change in the consumption pattern of individuals. Due to the raised nutritious intake concern people started having more of packaged and processed foods. This year gave a highly increasing demand pattern for ready-to-cook and ready-to-eat foods. Families where both the parents are bread earners had relied heavily on such food practices. But there has been an unseen story of the journey of food from farm to plate. There are numerous published sources claiming a disrupted channel of food from farm to processing to its presence on plate. This paper tries to enrich more on the food wastage and post-harvest losses, especially witnessed in developing nations and would further enlighten more on the suggestions as to how a developing nation could avoid such losses and simultaneously learn more about the usage of green and clean technology. This paper is an attempt to bring the findings of certain varied reports/surveys/studies at a single page and provide suggestions and ways to achieve the set targets. Thus, this will be a qualitative study with its significant implications to policy makers.

Keywords

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CoVid-19, ready-to-cook, ready-to-eat, green technology, policy implication, post-harvest losses.

Biography

Ilma Rizvi is presently a Research scholar at Jamia Millia Islamia University, India

Transforming the Plastic Industry Towards Greener Compostable Plastic Solutions with India's First Compostable Bio-Polymer Certified By CIPET

Mr. Mukul Sareen

Director -Business Development, Hi Tech International, India

Abstract

The packaging industry around the world uses plastic as the primary element to make carry bags, plates, straws, etc. Plastic is an essential product that enhances and eases the consumer experience. However, the issue arises post-use when most of it is hard to get rid of and traces of it remaining in the soil change and paralyzes the organic life in that ecosystem and exponentially increases the carbon footprint. India generates about 9.46 million tonnes of plastic waste annually, of which 40 percent remains uncollected and 43 percent is used for packaging, most of which is single-use as per a study conducted by Un-Plastic Collective (UPC). Moreover, the governments across the globe are imposing strict regulations on the plastic industry with a ban on most single-use plastic materials. Hence, there is an urgent need for the plastic industry to transform and adopt greener technologies and solutions to sustain the industry as well as the environment. This innovation is the first major step towards restructuring the plastic industry and especially the waste management practices in the India. It is the country's first CIPET certified bio- polymer made from corn starch that does not enter the food chain and is produced by the group's proprietary F2F process. It also follows a unique F2C (Farmer to Consumer) process for their products in turn empowering and improving farmers' income and sustainability. The production processes have been optimized to reduce the generated waste with a "zero waste" policy and to minimize the Co2 footprint impact from all activities. The group's commitment towards sustainability is oriented to reduce the greenhouse gasses impact, minimize the dependence on fossil oil derivatives, promote the use of renewable energies, and reduce the plastic waste in the environment.

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Biography

Mr. Mukul Sareen is Director, Business Development, Hi-Tech International..Mukul graduated from RMIT University and Havard. Mukul has been associated with the business since 2005 and today Hi-Tech International is the owner of brands - RUST-X, Keep it Fresh, Fillezy, Keep U Safe, Tuffpaulin, Zorbit, Dr.Bio, and Hitech MB. Mukul is known in the industry as an astute businessman, who knows his products thoroughly and has been able to make a network and impact in global market with his solutions. Over last one and a half decade, Mukul is recognized in the industry as a thought leader who has offered new innovations and designs in the space of sustainable primary and secondary packaging that are safe for the environment.

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A Balanced Model of Sustainable Development

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Abstract

Sustainable Development as the name suggest requires great deal of 'Sustained methods, techniques, and strategies' which will be able to work on Regular Basis for the upliftment of environmental issues and problems from the lowest level of education (elementary), population (streets) to the highest level of education (university)and population (nations) respectively.

So, through this paper, we would like to introduce a 'SUSTAINED METHOD' for the solution of environmental issues and problems. This method has two pillars: First one is Economic Development and another one is Social Development (Tangible and Intangible Needs of Human Beings), essentially include the development of both the elements in an equivalent manner. Here the demanding theory is of "Maslow's Need Hierarchy" which contains a set of Tangible needs like food, shelter, clothing's etc. at the grass root level of hierarchy (closer to animals) and a set of Intangible needs like self-esteem, belongingness, love etc. at the top. In a society charged with more Economic Development, which has feature of 'economic growth' like accumulating wealth more than basic needs, adoption of illegal means is controlled by Social Values of an individual. Here the operating question is 'why does an individual withhold wealth after the fulfilment of his basic needs? Keeping in view, we need to draw the Total Development Process as a system, in which both the elements of 'Sustainability' will work in an integrated manner. Because the Economic Development (Economic Behavior) of peoples makes them habitual of capturing economic power, this is the point of misbalancing which need to be correct as it creates lots of serious problems with many faces like poverty, hinder redistribution of wealth, wastage of environmental property, non-realization of their social duties towards nature, lack of Social Development. So, we must need to establish a balancing approach between the two i.e., Tangible (Economic Development) and Intangible need (Social Development). This will result in 'Balanced Sustainable Development Model'. Any short-term economic growth process cannot be sustained in the absence of Positive Values (Social Values). So here we are going to introduce a "Balanced Sustainable Development" model with the aspiring agent of "Social Value System" as a life force. Until and unless we realize the essence of the VALUES, the Sustainable Human Development will remain a dream.

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Biography

Satvinder Kaur Saini is an Assist. Prof. at St. Luke College of Education, Faridabad, also a Research Scholar from B.P.S.I.T.T.R. Women Uni. Sonipat, having a keen interest in Philosophical Studies and aspiring to work for the development of 'SELF', the main motto of Human Birth and the uniqueness of each and every student, so that the INDIAN concept of Knowledge and Spirituality gains its real place and will be able to guide the whole of human generation at the front floor with genuine parameters of Education.

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Biodegradation as a Probable Solution to Antibiotic Pollution in Soil and Aquatic Systems

Swagata Deyasi
Sister Nivedita University, India

Abstract

Antibiotics are synthetic chemical substances that inhibit the growth of bacteria. In the world of growing diseases and evolving microorganisms, antibiotics have been one of the most useful discoveries in the field of medical science. Antibiotics being synthetic organic molecules that are neither metabolized nor degraded easily and they might remain intact in the environment for a longer time period and can lead to the development of antibiotic resistance genes in bacteria and might also affect the reproduction of various organisms especially aquatic flora and fauna. Various advanced techniques have been introduced these days to remove these antibiotics from the environment. This includes methods like different physicochemical strategies, biodegradation using bioreactor, enzyme degradation, using bio-cathode, and various other techniques which we can use for the remediation of the antibiotics from the environment. In this review, the biodegradation of antibiotics has been described mentioning the proposed pathway of degradation and also the potential technologies which can the solution for the antibiotic pollution in soil and aquatic systems.

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Biography

Swagata Deyasi is a student currently pursuing M.Sc. in Biotechnology from Sister Nivedita University. She did her graduation in B.Sc. Medical Microbiology from Dolphin (P.G.) Institute of Biomedical and Natural Sciences, Dehradun. She is very interested in doing researches in the fields of Environment and Biotechnology.

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Kids Talk, Fishers Listen

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Abstract
Marine protected areas are among the global tool towards managing fisheries and habitats. The Philippines has the most numbers of marine protected areas in the world though in varying functionality. The Local Government Unit of Siruma, Camarines Sur, fulfill its mandate to marine conservation by legally establishing marine protected areas to serve as fisheries replenishment zones and strategy for habitat and biodiversity conservation. The Sapenitan Bay Fish Sanctuary established in 1994 through a local ordinance was among the pioneer undertaking of local government on its coastal and fisheries management program. Along the years of implementation, the marine protected area is challenged with the usual problems of illegal fishing inside the no take -zone, insufficient logistical support, fishers, and community buy-in was weak which was arguably due to the decrease in fish catch in the nearby fishing ground and the lack of understanding on the benefits of a well-managed marine protected area. With such premise, Siruma Pride Campaign was initiated. Guided by a clear Theory of Change, the campaign run for 2 years led by a Conservation Fellow. The general focus of the campaign was for the fishers and communities to change their current unsustainable fishing behaviors, to fish in the right place with the right gear using research informed social marketing techniques and materials including tapping the kids in Siruma as ambassadors for change. Positive changes in the indicators adopted by the campaign measured from the baselines in 2013 and post-surveys in 2014.

Keywords
pride campaign, sustainable fishing, marine sanctuary, social marketing, environmental protection and conservation

Biography

A conservation fellow, born in Siruma, Camarines Sur, Philippines where the Pride Campaign was implemented and a former Municipal Planning & Development Officer with 2 undergraduate courses: Graduate in Nursing and Bachelor of Arts major in Political Science. A Graduate of three (3) Masters' Studies: Master in Public Administration, Master of Arts in Communication, a fellowship program at the University of Texas El Paso, USA an academic implementing partner of Rare for the Pride Campaign, and, Executive Master in Disaster and Crisis Management (EMDRCM) at the Asian Institute of Management. Lastly, a Doctor of Philosophy major in Human Resource Management. Now, Dean, College of Arts and Sciences, Naga College Foundation, Inc. An Environmental Planner, an influencer of change, to increase knowledge, adapts new behavior and attitude; also, an integrator of development touching the lives of other people.

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Status of soil nutrients of two different agro ecosystems of Champawat, Uttarakhand, India

NehaTiwari
Gurukul Kangri (Deemed to be University), India

Abstract

Soil is the key component and its quality depends on maintenance through agricultural practices over time and influences of various macro and micro fauna. This study aimed to evaluate the soil nutrients in two different agroecosystems (agricultural land and tea garden) sites of Champawat, Uttarakhand, India. Soil samples were collected randomly and standard protocols were employed to determine the physico-chemical characteristics of soil. Soil pH and water holding capacity ranged from (6.5 - 7.8) and (70 – 84) respectively. Bulk density and electrical conductivity were recorded maximum in agricultural soil ranging from (1.04 - 1.19) and (0.08 - 0.24). Organic matter, nitrogen, phosphorus, potassium were higher in agricultural soil and values ranges from (1.98 - 4.08), (0.30 - 0.58), (0.108 - 0.116), (0.020 - 0.029) respectively. The C/N ratio was also maximum in agricultural soil (4.08) as compared to tea garden (3.83). This study concludes significantly high soil fertility level in agricultural soil because this agroecosystem supports higher micro-floral activities on the plenty of litter material available on the soil. This study proves helpful to establish a relation among the different land systems used by farmers and in identifying and planning necessary measures required for sustainable environment.

Keywords

Nutrients, fertility, sustainable, identifying, environment.

Biography

Neha Tiwari, currently a full time PhD student at Gurukul Kangri (Deemed to be University), Haridwar. Completed B.Sc. (Zoology, Botany, Forestry) from Kumaun University and M.Sc. (Environmental Science) from Gurukul Kangri University. Particularly interested in soil science, vermicomposting and Carbon sequestration.

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The Restoration of Tropical Wetland Ecosystem for Mitigation of Global Climate Change

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Forestry Technology Research Center for Watershed Management, Surakarta Indonesia
Boy Andreas Marpaung
Center for Watershed Management and Protected Forest Ake Malamo Ternate Indonesia

Abstract

The Tropical Wetland Ecosystem in Indonesia, consisting of mangrove and peat ecosystems, has a very massive disorder. Land clearing, transfer, drainage, floods, droughts, and fires cause damage and land degradation [1]. Severe damage to characteristics, ecological functions, and environmental services has localized, regional, and global. The existence and function of tropical mangrove and peat forests are irreplaceable even with permanent vegetation in industrial plantations or intensive oil palm plantations. The regime dynamics of moisture, carbon, edaphic, nutrient, temperature, vegetation, microclimate dramatically affect the land quality and the environment [2]. Wetland ecosystem restoration is not just revegetation by restoring land cover but also must be with a strategy to restore ecological functions-based characteristics of educational and hydrological thoroughly [3]. This paper will discuss the influence of the dynamics and restoration of the mangrove and peat ecosystem on the recovery of wetland ecosystems and global mitigation of Climate Change. Identification of vulnerability and typology of damage to the wetland ecosystem based on climate typology, hydro-topography, changes, and damage to the forest cover is crucial for the direction of restoration and conservation. Biophysical wetland characteristics at various levels in the wetland analysis unit are bases on recovery and conservation activities. The strategy of revegetation activities for recovery of wetland ecosystems that suffered damage based on the type of Local superior indigenous plant is used as a direction of function and microhabitat based on the landscape. Characteristics of damage to peat swamp forests and formulations of the mangrove ecosystem's recovery strategy and tropical peat based on hydrological and edaphic unit analysis units are expected to be the primary reference in the restoration of the tropical wetland ecosystem.

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Biography

CAHYONO AGUS is a Professor at Universitas Gadjah Mada Yogyakarta Indonesia, was born in Yogyakarta, March 10, 1965. The Doctorate was obtained from Tokyo University of Agriculture & Technology, Tokyo, Japan, in 2003. He was head of UGM University Farm 2008–2015. He currently serves as Chairman of the Association of Tamansiswa Society (PP PKBTS) 2016–2021, a Majelis Luhur Persatuan Tamansiswa (MLPTS) member 2016–2021, and member of Education Board Daerah Istimewa Indonesia. Active as a reviewer in research, community development, scientific publications, and institutional development in Higher Education, Indonesia. He published many scientific works in international seminars and journals and has several awards and copyrights from various agencies

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Water Resources Management in INDIA

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Dr Akshaya Bhargava
Ex. Member Secretary, Rajasthan Pollution Control Board, Professor and industrial adviser, CEPT University, India

Abstract

In the wake of this COVID-19, the perspective of living life and managing resources has changed definition. Ensuring sustainable development, maintaining ecological balance, finding optimal solution to manage resources has become a matter of utmost emergency. The water resources managing practices, decision support systems all are in a need to change. As a result of escalating demands, pollution and climate change impacts water resources management requires a clear understanding of fulfilling and sustain the growing trends. The study demands to debate on the over utilization of groundwater resources, recycling of waste water, rain water harvesting, to find a co-relation between flood and draught data as well as the erratic rainfall patterns. The aim remains to find a possible balance to restore and manage the vast and available water resources. The authors of the present paper have highlighted the water resources in India along with its management and further optimization to ensure availability, maintaining and restoring the quality of water, recycling and reuse of waste water and other relevant parameters.

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Biography

Archana Dash, M.Tech in Water Resources Engineering(2013-2015),Veer Surendra Sai University of Technology(VSSUT), Burla, Odisha, India.(2 years paid Teaching Assistant during M.Tech). Approx 3 years of teaching Experience teaching Civil Engineering to B.Tech and M.Tech students in Government and Autonomous Universities in Odisha, India (2015-2018); Currently working as a Teacher with an online platform with kids (Around age 6 to 12 years old teaching Math's and Coding). Personal Skills: Basic Water Resources software Knowledge (AUTOCAD, STAADPRO, HEC-HMS, HEC- RAS),

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Effect of Drought on Rural Farm Households – A Study of Two villages of Beed district of Maharashtra state, India

Bhagat Nitin Dattuji
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Abstract

This study aims to identify the social and economic effects of drought on rural farm households from the irrigated and rainfed villages of the Beed district in the Marathwada region of Maharashtra. This study is based on primary as well as secondary sources. The study used a multistage sampling method for primary data collection. The 97 farm households data has been collected from the two villages with the help of the semi-structured questionnaire. The rainfall and crop production data were collected from various departments of the state. The Rainfall Anomaly Index (RAI) is employed to analyze the frequency and intensity of dry and rainy years. The study found the differences between irrigated and rain-fed villages in the drought-prone district of Beed. The rain-fed village households faced more difficulties compared to the irrigated village. Crop yield and income decreased tremendously in both villages. Furthermore, the employment and fodder problem was similar in the rain-fed and irrigated village. In the irrigated village, there was no drinking water scarcity. No single person or family migrated from the village. However, in the rainfed village, there is the opposite situation. Drinking water was not available. Many families migrated during the drought period from rural to urban areas. The state and local governments provided few facilities to mitigate the drought impacts, such as water tankers, fodder camps, and food grains through Public Distribution Systems (PDS).

Keywords

Rain-fed, Irrigated, Rainfall, Drought, Agriculture, Villages

Biography

I am Bhagat Nitin Dattuji pursuing my Ph. D. in Economics, at the University of Hyderabad, under the supervision of Prof. B. Nagarjuna.

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Ecological as well as Environmental Effect of Chromite Mining in Sukinda Valley: A Paradise lost from the bounty of nature to polluted mines

Dr. Haripriya Mishra
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Abstract

The pre-Cambrian chromites ore deposits in Sukinda valley, Jajpur District, Odisha, India, are well known for chromite hub in the world and hosts more than 95% of the country's chromite resources. The exploitation of the ore is carried out through the open cast mining method since the last few decades. In the process, the overburden and ore dumps are stored on the ground surface, where leaching of chromite and other toxic element cause environmental disorders. Hexavalent chromium is a highly toxic form of chromium metal mainly used in different industrial applications for its anti-corrosive properties. Hexavalent chromium is carcinogenic beyond the permissible limit (0.05mg/l). Chromite mining can create hostile conditions for organisms in the surrounding environment. Emphasis is placed on the ecological changes as well as the environmental pollution status of Sukinda valley i.e. the most polluted place in the world.

Keywords

Chromite mine, Hexavalent chromium, Environmental effect, Sukinda valley

Biography

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Mycoremediation: A Probable Answer for Microplastic Pollution

Pooja Mondal
Sister Nivedita University, India

Abstract

Microplastics (MPs) are small pieces of plastic, < 5 mm (0.2 inch) in length, that occur in the environment as a consequence of plastic pollution. MPs are divided into two types: primary and secondary. Primary MPs enter the environment directly through any of various human activities. Secondary MPs form from the breakdown of larger plastics. Environmental pollution from micro and nano scale plastics is disturbing since smaller plastics cannot be seen. The ingestion of microparticles can cause alteration in chromosomes which lead to infertility, intestinal disbalance, disruption of the gut's epithelial permeability, obesity and cancer. In women, estrogenic mimicking chemicals can cause breast cancer.MP degradation can be mediated by bacteria, fungi and formation of biofilms. Polymers must be converted to monomers before they can be mineralized. In Fungal -mediated degradation fungi are able to use MPs as a carbon source. Fungi, can promote the oxidation or hydrolysis of Polyethylene (PE) by producing extracellular enzymes. In this review, the potential of fungal strains has been assessed for degrading MP. Therefore, the studied mycoremediation systems can be a possible solution for increasing MP pollution in aquatic and terrestrial environment.

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Biography

Pooja Mondal completed her Bachelor of Science in Microbiology in the year 2020 and currently she is pursuing Masters in Microbiology from Sister Nivedita University, Kolkata. Her goal is to utilize her interest in research work and engage more in environment related activities.

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Bioindicators in the Assessment of Water Pollution in an Industrial Port City

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Rajarshi Banerjee
Department of Bio-Sciences, Seacom Skills University, India

Abstract

Haldia area of West Bengal was selected and monitored for two years to find out the pollution level of water bodies. The study focused on seasonal variation of water. Plant species, animal species as well as human indicators were used as bio-indicators to estimate the water condition that acted as an important tool to detect the changes in the water body. The plant indicators indicated presence of ROS and micro pollutants in water body and gave an idea on tolerance to pollutants when compared between two plant varieties. One fish species was used as animal indicator where tissue distortion acted as warning damaging signs to health of a fish which has direct effect on human health. The physiological changes due to some particular pollutant acted as an evidence which ensured the pollutants presence in a particular aquatic system. Human health study was attempted to present the linkage between the water condition and consequent public health, highlighting their health problems due to pollution as human indicators.

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Biography

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Studies on Water Quality and Macrophyte Composition and Practices in Dal Lake of Kashmir J&K (INDIA)

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Abstract

The accelerated sedimentation, settling of plant biomass and siltation have rendered Dal lake basins shallow and continuous dry summers have resulted in low water level and high summer temperatures. All these factors have been responsible for high macrophyte vegetation in the lake which not only looks unaesthetic but create many hindrances. Vegetation stands have become mono-species, biomass per unit area has increased appreciably and the carbon dioxide content in water has decreased in response to vigorous photosynthesis. The amount of organic production by macrophytes in Dal Lake has been calculated for the entire year taking into consideration the extent of growing period. For this purpose studies was carried on various species and have been considered under their respective life-forms. The area has been calculated for each life form separately. The data show that more than 41 thousand tons of organic matter is added to the lake each year by macrophytes which add to the sediment pool and also result in sedimentation.

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Biography

Name: showket Ahmad Mir, Completed Ph.D (Economics), Assistant professor (Economics), Baba Ghulam Shah Badshah University Rajouri (j&k) INDIA

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Histopathological changes induced by Quinalphos in the kidney of fresh water fish *Notopterus notopterus*

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S.P.C. P.G. Government College Ajmer, India
Dr. Rashmi Sharma
S.P.C. P.G. Government College Ajmer, India

Abstract

Quinalphos is an organophosphate chemical chiefly used as a pesticide. The fresh water fish *Notopterus notopterus* was selected for the experiments. After the exposure of 0.42 ppm quinalphos for short term duration (24, 48, 72 and 96 hrs) several histopathological changes such as pyknosis, vacuole formation, cloudy swelling, glomerular disorganisation and defect in renal tubule were observed in kidney tissue of fresh water fish *Notopterus notopterus*. 1/10th of 96 hrs LC_{50} was used as sublethal concentration of quinalphos pesticide.

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Biography

Ms. Vandana Yadav is a research scholar, "Department of Zoology, Samrat Prithviraj Chauhan Government College Ajmer, Rajasthan, India". She has completed M.Sc. Degree in Zoology from "M.D.S. University Ajmer, Rajasthan, India".

Dr. Rashmi Sharma is currently working as Associate Professor, "Department of Zoology, Samrat Prithviraj Chauhan Government College Ajmer, Rajasthan, India". She has awarded with a Ph.D. degree in Zoology from "Maharshi Dayanand Saraswati University, Ajmer, Rajasthan, India".

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Do Nitrogen-Fixing Tree Species Contribute Ecosystem Services and Forest Conservation?

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Satish Chandra Garkoti
School of Environmental Sciences, Jawaharlal Nehru University, India

Abstract

The terrestrial ecosystem is changing rapidly, with deforestation and degradation occurring. Forest regeneration seems to be not only an essential part of conservation, but also regulates the forest ecosystem services. It is thought that trees that develop a symbiotic relationship with nitrogen-fixing bacteria supply of nitrogen for the surrounding ecosystem and therefore improve soil fertility, crop yield, altering biodiversity and biomass and promote forest regeneration and maintaining ecosystem services. Nitrogen fixing tree species (NFTs) based forest restoration and agricultural practices are sitting at a crucial nexus of ecological sustainability. The NFTs based plantation has multiple benefits, have been expanded recently. Instead, NTFs forestry has strongly had instead highly accepted the framework of ecosystem services since these forests provide many benefits to such as forest restoration, altering biodiversity and biomass, Agroforestry, and climate change mitigation. Biodiversity plays a vital role in encouraging ecosystem activities and processes which ensure ecosystem services. As NFTs modify habitats, altering soil physco-chemical and biological properties, change the biodiversity might have an impact on the provision of ecosystem services. NFTs receive tremendous attention to policy and research coverage. In this article, the literature reviews the searches for this conceptually attractive prospect, both conceptual and empirical, and current upstanding of NFTs to habitat change following the biomass and biodiversity and attempt to link these changes to ecosystem services. This knowledge is necessary for the development of an effective policy. Leveraging upon these findings, we conclude on the effective policy frameworks need to be implemented simultaneously to NFTs plantation and NFTs based agroforestry in order to optimize the possible benefits.

Keyword: Nitrogen fixing tree, Forest plantation, Biodiversity and biomass, Forest conservation; Ecosystem services, Soil physco-chemical properties

Biography

Rajendra Kr. Joshi working as a Ph.D. scholar in School of Environmental Sciences Jawaharlal Nehru University New Delhi. I have keen interest in areas of forest ecology and biodiversity. . I already have more than 12 and half year experience as, junior and senior research fellow in various Govt. Institute like GBPIHED North East unit Arunanchal Pradesh, CSIR-NEERI Nagpur Maharashtra, and SES Jawaharlal Nehru University New Delhi in running research projects. The forest ecology subject is particularly attractive for me because the objective is to understand the role of forest in carbon sequestration and mitigation to climate change. Have more than 10 publications.

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Microplastic Pollution: An Overview of Mechanisms on Various Biota and Environmental Systems

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Deecaraman Munuswamy
Senior Professor/Dean, Department of Biotechnology, Dr. M.G.R Educational and Research Institute, India

Abstract

Worldwide presence of Microplastics (MPs) is identified as the major environmental threat. MPs are very small plastic fragments about (0.001-5 mm) which are ubiquitous in the environment especially marine as well as freshwater ecosystems. Despite, several study reports on the presence of microplastics MPs pollution in the aquatic environment are receiving increasing attention, still our understanding with respect to mechanisms on various biota and environmental systems are still sparse. Moreover, there is also a need for comprehensive evaluation and assessment of MPs in different environmental systems, in order to obtain a complete scenario of the extent of MPs pollution. In the present review, a concise overview of MPs, mechanisms on various biota and environmental systems are discussed.

Keywords

Microplastic, pollution, aquatic environment, mechanisms, biota,

Biography

Mr. Muralidharan Velappan is a microbiologist, and a PhD research scholar in the department of marine biotechnology at AMET University, Chennai. Mr. Muralidharan's fields of work include, chronological order, marine microbial ecology, aquaculture pathology, marine bacteriology, in vitro susceptibilities of selectively used antibiotics against vibrio species, role of bacteriophage in aquatic animal infectious diseases and novel In-silico drug designing. He has published nine research articles and three review article in peer review journals. He received three research awards and one scientist award and he is also a reviewer and editorial member in various reputed board international journals.

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Bacterial Depolymerization of Synthetic Plastics: Potential Solution to Plastic Pollution

K. Priyanka
Sister Nivedita University, Kolkata, India

Abstract

There are millions of tons of plastics are disposed of every day which remains over 100s or 1000s of years, they are menace over planet's sustainability. 90% of plastics are not recycled most owing to the fact that the plastics tend to lose their quality with conventional recycling methods, as a result they pile up in landfills leaching into the soil and affecting terrestrial and aquatic ecosystem. The major concern also includes the hazards caused through ingestion, entanglement, and intestinal blockage in marine animals. Plastic degradation can be done by photodegradation, thermooxidation, hydrolytic degradation and biodegradation by microorganisms. Synthetic plastics such as, polyethylene (PE), polystyrene (PS), polypropylene (PP), polyvinyl chloride (PVC), polyurethane (PUR), and polyethylene terephthalate (PET) have been found to be degraded by the bacterial biofilms isolated from different environmental sources. In this review, the bacterial strains capable of enzymatic depolymerization of plastics and the proposed pathways of depolymerization have been discussed. Also, the probable use of end products of the degradation process as feed for microorganism and domestic animals have been mentioned

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Biography

I am K Priyanka from Jamshedpur, Jharkhand, India. I have an academic background in Biotechnology. I have completed my bachelors in 2020 and now I am pursuing Masters in Biotechnology from Sister Nivedita University Kolkata. My project work from Bachelors includes 'RNA isolation from SARS-CoV-2'. I have always been keen on learning about Bioinformatics, Marine Biotechnology, Space biotechnology etc. I want to use those learnings and researches to make environment around us and in the space better and more known.

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Pesticides, nutrients and metals pollution and risk assessment of River Ganga

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Indrani Ghosh
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Abstract

The Ganga, the most sacred and worshipped river of the Hindus, is now one of the most polluted rivers of the country. Twenty-five big cities located along its bank generated 1340 mld sewage. 95% of the same used to enter the river without being treated prior to the GANGA ACTION PLAN (GAP). The pollutants found in the river are due to disposal of city garbage, agricultural wastes, pesticides, burning of human bodies, religious practices. It causes death of several aquatic life residing inside contaminated water body. It also leads to various diseases in human body, such as, diarrhea, malaria, dengue, cholera. It has indicated the presence of prominent level of carcinogenic compounds in water of the river Ganga. Around the world agriculture is the leading cause of water degradation. It also major contributor of contamination to estuaries and ground water. Nutrient pollution, caused by excess nitrogen and phosphorus in water, is the major threat to water quality worldwide and can cause algal blooms, the toxins of blue-green algae are harmful to people and wildlife. The level of pesticides in Ganga water indicates drastic reduction in comparison to the last decade. Microbial contamination has also increased day by day. Significant health risk is associated with metal vulnerability through utilization of infected fishes from Ganga. There are many cases on record of the destruction of marine life by polluted water. Mass killing of fish was among the most dramatic result of indiscriminate pollution of water. Because of water pollution substantial number of ducks also die every year. If water pollution is most severe, the process of photosynthesis is also obstructed which affects the growth of aquatic vegetation. The gradual increase of phosphorus, nitrogen in aging aquatic ecosystem, the productivity of fertility of such an ecosystem naturally increases as amount of organic material that can be broken down into nutrients increases. Besides that, target cancer risks evaluation shows high carcinogenic risks from As, Ni, Pb as well as DDT. Addressing pollutants in Ganges basin involves

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switching the treatment of sewage water and any pollutants. It collides with Indian religious belief and method of life.

Keywords
Ganga River, GAP, Emerging pollutants, Carcinogenic, Microbial contamination.

Biography
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Changing climate - climatic whimsies and its effect on sedentarisation process and livelihood of pastoral community at Jigjiga Woreda, Somali Region, Ethiopia (East Africa)

(A focus on inclusive growth and development perspectives)

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Abdurehman Mektel Weli
Jigjiga University, Jigjiga, Ethiopia
Ayanle Igge
Jigjiga University, Jigjiga, Ethiopia

Abstract

Changes of climate and climatic whimsies have become routine phenomenon throughout the world in general and Ethiopia in particular because of rising unnecessary and intolerable human activities against nature(for say burning fossil fuels, deforestation etc.) compromising human needs over wants. This adds enormous amounts of greenhouse gases to those naturally occurring in the atmosphere, increasing the greenhouse effect and global warming (Climate Action, European Commission, 2021) lead to frequent changes of climate and climatic whimsies which ultimately effecting in many ways the sedentarisation process - livelihoods of pastoral community in Ethiopia in general and Jigjiga in particular. In the African continents the Ethiopia is one among landlocked country in Horn of Africa where approximately 12-15 million pastoralists reside in 61% of the nation's landmass **(World Bank, 2003)** and **(Müller-Mahn, Rettberg and Girum, 2010)**. The pastoral areas in Ethiopia are regarded as drought vulnerable with chronic food shortage **(S, Desta, 2013),** therefore, poverty is seen rampant and pervasive. Jigjiga Woreda is one among woredas in Somali Region whose 2.51% out of total population of 277,560 are pastoralists **(CSA, 2007).** They are so frequent moveable that their mobility has made ultimate challenge towards inclusive growth and development nation as a whole and particular in the region. Therefore, in addressing this challenge, sedentarisation process was found to be a suitable way in many parts of Ethiopia where Jigjiga is not exceptional. The pattern of climate change- climatic whimsicalities have occupied such a commanding position that pastoralist

are unable to adapt any suitable tactics or coping mechanisms in order to face the consequences of climate change-climatic whimsies, many sedentarisation programs, processes are jeopardized that are adding many pastoralist communities in the stream of marginalization . Alternatively they move out from this region to safeguarding their livestock and to seek alternate livelihood resources. Therefore, these issues have invited many experts, think tanks, social and human rights activists and society at large to think about a lasting solution in order to see inclusive growth and development nation as a whole and the Somali region in particular. Therefore, within this framework using suitable methodology this study has been undertaken. Accordingly inferences are drawn, findings are conclusions are made; few suggestions are recommended.

Biography

Author is working as Asst. Professor(Development Studies), Department of Rural Development and Agriculture Extension ,College of Dryland Agriculture, Jigjiga University, Jigjiga, Somali Region, Ethiopia, East Africa since 2016. He has published many articles and reviews in National and International Journals with repute. His area of research interests are in development studies particularly on inclusive growth and development of marginal communities, environment and climate change and its impacts, Social exclusions and inclusive policies etc.

Director Academic Affairs Vice-iPresident Office Directorate iand iSenior Lecturer ,Department iof iRural iDevelopment iand iAgriculture iExtension, iJigjiga iUniversity, iSomali iRegion i,Ethiopia. He has published many articles and reviews in National and International Journals with repute. His area of research interests are in development studies particularly on environment and climate change issues.

Lecturer in the Department of Rural Development and Agriculture Extension ,College of Dryland Agriculture, Jigjiga University, Jigjiga, Somali Region, Ethiopia, East Africa- His research interests are in Climate Smart Agriculture practices, environment effects on pastoral community etc.

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Commission for air quality management: Will it be helpful in combating air pollution in Delhi NCR?

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Amity Institute of Social Sciences, Amity University, India

Abstract

In today's era, the progress of economies due to industrialization, technology, globalization, trade and population, has resulted in increased environmental degradation. One such element is Air Pollution that has been a major cause of concern in Delhi NCR since last two decades. The government at various levels has been making many laws and policies to control the alarming levels of pollutants for a very long time. These law and policies are implemented and executed at various levels and multiple agencies are involved in the process in multilevel governance framework. The need to address this issue had been highlighted from time to time and keeping that in mind, the Government has decided to form a Commission for Air Quality Management. The aim is to streamline the measures taken by the concerned organisations for ensuring a better co-ordination, research, identification, and resolution of problems related to air quality in the National Capital Region (NCR). This body is going to act as a central body which will consolidate all the other concerned bodies, bring them on one platform and make sure that all actions related to air quality management are carried out in an efficient, comprehensive and time-bound approach. However, environmentalists have raised concerns over the concentration of power with the Central Government. The body comprises of an overwhelming number of bureaucrats and all the other environmental bodies and non-governmental groups only get a token representation. There is a speculation if this body is going to help the cause at hand or will just be one more body added in the already present long list, only time will tell.

Keywords

Commission on Air Quality Management, Multi-level Governance, Delhi NCR pollution,

Biography

Dharmendra Yadav is pursuing PhD in Political Science, Department of Political Science from Amity Institute of Social Sciences, Amity University, Sector 125, NOIDA, after completing his Masters in Public Administration. He has keen interest in areas of public governance, Indian administration and public policies.

Dr Shalini Saxena is working as an Associate Professor in Political Science and International Relations and Department Coordinator in Department of Political Science, Amity Institute of Social Sciences, Amity University, Sector 125, NOIDA, UP, India. She has done her Ph.D. from Lucknow University in March 2010. Prior to this, she completed her M.Phil. from Centre for International Politics, Organization and Disarmament, School of International Studies, Jawaharlal Nehru University (JNU), New Delhi in International Politics. She has done

M.A. (Political Science) from Department of Political Science, University of Lucknow. Earlier she was a Lecturer in Guru Gobind Singh College (Punjab University), Chandigarh. She is the editor of Amity's Political Science Journal ,'Politica'. Her core interest areas are International Relations, State and Local Governments, International Organizations, campaign management and polling, journalism, electoral politics, research and university and college teaching.

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Earth for Each - Save Neighborhood Friends

Sailaja
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Abstract

Not even humans, animals also are affecting by different types pollutions that can affect cause health issues like trigger asthma, diabetics, chronic obstructive pulmonary disease, lung issues, etc. The air pollution is increasing the risk of developing of coronary artery disease and acute cardiovascular events in animals. Permanent blindness, deafness, panic attacks and loss of appetite which could lead to the heart failures and finally death in animals, birds. Moreover, the most common howling and shivering while Indians bursts the crackers. The e-poster introduces the seriousness about different pollutions causing health issues in animals and birds. This e-poster provide you the causes and impacts of stray dog problems, other animals and birds. Also it has proposals that can provide options to solve problems or proposed recommendations in terms of the solutions. Indiscriminate cut down of the trees in cities, reducing the trees diversity and sprayings of the chemicals polluting small lakes and these are causing issues for the neighborhood animals and birds in cites.

Keywords

Animal, bird, disease, health, pollution, problems, city, air, sound, waster, failure, trees, lakes.

Biography

Sailaja is a Principal Instructor at Oracle University. She has an extensive experience in conducting Technical skill development or enhancement programs for both project associates and business associates. She is always keeps herself abreast with new learnings. She has more interest in writing articles and participating in National and International Conferences.

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Flow Habitat Relation for Integrity of Freshwater Ecosystems

Kashifa Iqbal
Department of Environmental Science, School for Environmental Science,Babasaheb Bhimrao Ambedkar University, India
Venkatesh Dutta
Department of Environmental Science, School for Environmental Science,Babasaheb Bhimrao Ambedkar University, India

Abstract

Ecologists consider flow variability as the fundamental driver of riverine ecosystem function and structure. Ironically, the diverse ecosystem services provided by rivers have not been holistically integrated into economic development resulting in the widespread degradation of the riverine ecosystem, a process aided greatly by the instream flow diversions, rapid urbanization, overallocation to meet agricultural and industrial demands and construction of thousands of dams around the world. Stream and river ecosystems' ecological integrity is dependent on the interconnectivity they offer along their routes and across the terrestrial ecosystems through which they interact. These ecosystem services, in turn, are reliant on the biological diversity and functional integrity of natural freshwater ecosystems. The flow is the master variable that plays a key role in the healthy functioning of the ecosystem. Various types of flows like base flows, instream flows, medium or high flows offer an advantage as they are responsible for building various habitats like pools riffles and run and in turn acts as drivers for ecological productivity and sustaining a great diversity in the river. The e-flows concept prevalent nowadays should be able to offer near pristine flows so that the indigenous floral as well as faunal species can thrive.

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Biography

Kashifa Iqbal is working as a research scholar under the supervision of Prof. (Dr.) Venkatesh Dutta in the Department of Environmental Science, Babasaheb Bhimrao Ambedkar University which is a Central University in India. She has done her Masters in Environmental Science and worked on River Gomti as part of her dissertation work. Currently, she is pursuing her Ph.D on the variable flow regimes of the Ramganga river. She is keenly interested in the studying about the riverine ecosystem and functions and has done field studies on the River Gomti and Ramganga which are rivers of national importance. She is thankful to the International Society of Environmental Relationship and Sustainability for providing a platform through which students have got an opportunity to present their work among the reputed scientists across the world.

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Worship & Devotion in Reducing Pollution – Awareness Idealised

Preeti Chincholikar
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Abstract

India – A land of Festivals has its own glory in every moment it exists. Every year, we experience various festivals, be it Diwali, Holi, Ganpati festivals, etc. this is a religious practice with light colors, flowers and idols. The festivities though get the glory of celebrations, but it does have lead to the consequences of pollution of land, water & air. This had a great impact on the well being of our own environment & its Resources. In an attempt to overcome the drastic effects the festivals are now- a-days being celebrated in eco-friendly manner. One such act is the upgradation of Ganesha Festival- which includes worshiping the idols & after ten days duration, they are immersed in large water bodies. These idols during dissolution would pollute the water bodies. To overcome this, use of Beej Ganesha, Pure Clay Ganesha & many other forms of idols, some chemical treatments also have been made, that are easily degradable and do not cause pollution.

keywords

Ganesha Idols, clay & other idols, chemical treatment, ecofriendly approach

Biography

Dr. PREETI CHINCHOLIKAR, (M.Sc(zoo), M.Phil(Biotech), M.Sc (Chemistry), PhD (Chemistry), Indian born in Hyderabad, Andhra Pradesh (now Telangana). Has over 18 years of teaching & research Experience in Biological & Chemical Sciences as well. AWARDS:- 3 in international & 4 in national conferences (out of which 2 WERE from the renowned "INDIAN SCIENCE CONGRESS"). PATENTS:- Designing of a ventilator for Covid-19. PROJECTS:- 02 (completed). BOOK CHAPTERS:- 03 (1 out of these in SPRINGER NATURE). PUBLICATIONS:- 3 International & 2 National Journals. BRAND AMBASSADOR of NEP-2021, Mhrd, Goi. Guided:- 4 Interns In Drug Research For Covid-19 & 2-M.Tech In Environmental Science (Civil Engineering). Ph.D* (Phytochemical Studies) . Membership:- Indian Science Congress American Chemical Society

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Effect of Ligninolytic Micro Organisms Isolated from Termite Gut on Coir Fibres

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Anita Das Ravindranath
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Abstract

Softening of coir fibers is one of the major practice in coir industry which presently adopts various chemical treatment procedures that are not eco-friendly. As lignin is the major component of coir responsible for its toughness, microbes that selectively eliminate lignin without significant loss in cellulose are extremely attractive in bio softening. The present study aims at treatment of coir fibers with the microbial consortium isolated from the termite gut for the removal of lignin to obtain softened coir fibres. The microbes isolated from the termites gut with considerable ligninolytic activity were identified as *Kozakonia oryzendophytica, Streptomyces atratus* and *Acenetobacter iwoffii* respectively. The quality of the treated fibers concerning physical and chemical characterization viz. variation in lignin content, flexural rigidity to evaluate the degree of softness, FTIR and tensile strength has been carried out. The treated fibers exhibited remarkable decrease in the lignin content from 46% to 38.7%. The flexural rigidity was observed to be reduced from 1.12 to 0.66 which accounts to the increase in the degree of softness. Removal of surface projections on the coir fiber upon treatment is evident from Scanning Electron Microscope images. These surface changes can be attributed to the fiber softening.

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Biography

Revathy Rajan A R is a research fellow working in Central Coir Research Institute, Alleppey, Kerala, India and registered for PhD at Cochin University of science and Technology. She received a bachelor's degree and master's degree in Biotechnology from Bharathiar University, Coimbatore, Tamil Nadu, India. Her current research focuses on the bioprocessing of coir fibres using ligninolytic enzymes isolated from biological sources.

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Exploring Teachers' Conceptions and Misconceptions on Environmental Issues and Practices



Sandra E. Miranda
Philippine Normal University Visayas, Philippines
Madelene G. Jose
Philippine Normal University Visayas, Philippines
Maria Fatima C. Perales
Philippine Normal University Visayas, Philippines

Abstract

This study explored the conceptions and misconceptions on environmental issues and practices of 98 selected teacher-participants in both public and private schools in the K to 12 Basic Education Program at the Schools Division of Cadiz City, Negros Occidental, Philippines. The study utilized mixed method design, which used survey questionnaire and focus group discussion as data-gathering tools. The instruments of the study were duly validated and with established reliability. Results revealed that 59 (60.07%) out of the 98 sample participants had misconceptions on global warming specifically greenhouse gases and greenhouse effect, certain waste disposal practices, and air, water and noise pollution. The results suggested that public and private school teachers need to be informed of the basic concepts in environmental issues and correct practices and that pre-service teachers, particularly those at Philippine Normal University Visayas must become experts and advocates of pro-environment knowledge, concerns and practices through an envisioned environmental education curriculum.

Keywords

Conceptions and misconceptions, Environmental Issues and practices

Biography

SANDRA E. MIRANDA, EdD is an Associate Professor at the Faculty of Teacher Development of the Philippine Normal University Visayas teaching Mathematics, Science and Professional Education courses to undergraduate students. She is the Head of the Center for Teaching and Learning of Philippine Normal University Visayas.

MADELENE G. JOSE, EdD is an Associate Professor at the Faculty of Teacher Development of the Philippine Normal University Visayas teaching Professional Education courses to undergraduate students. She is the Director of the Office of Student Services of Philippine Normal University Visayas.

MARIA FATIMA C. PERALES, M.Ed is the Associate Dean of the Faculty of Teacher of the Philippine Normal University Visayas teaching Early Childhood Education courses to undergraduate students. She is also the Program Coordinator of the Bachelor of Early Childhood Education of the University.

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Importance of Bifidobacterium as a Beneficial Gut Microbe

Ayendrila Biswas
Sister Nivedita University, India

Abstract

Human health can be defined as physical, social, psychological and spiritual well-being of individuals. The physiological health of a human being significantly depends on the microcosm inhabiting the digestive, respiratory and reproductive system. Owing to its metabolic complement, the gut microbiota provides a range of beneficial properties to the human host. Some of them includes *Lactobacillus sp, Bifidobacterium, Ruminococcus, Bacteroides, E.coli* etc. here we will focus on *Bifidobacteria*, class of *Actinobacteria,* Gram positive, nonmotile, often branched anaerobic bacteria. The beneficial bacterial strains digest dietary fiber, helps to prevent infection, produce vitamins and other important chemicals. They inhibit Irritable Bowel Syndrome (IBS) and obesity. In this review, the beneficial roles of the genus *Bifidobacterium* has been discussed. The antagonism against pathogens and other health benefits of *Bifidobacterium* along with the possible mechanism have been analysed.

Keywords

Gut-microbe, Microcosm, Metabolic component, Irritable bowel syndrome (IBS)

Biography

I'm Ayendrila Biswas, purchase my B.Sc degree on Botany, M.Sc Biotechnology, Summer intern at Centre for Research in Nanoscience & Nanotechnology-**CRNN, Calcutta. I'm look forward to research in cancer biology.**

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Women Entrepreneurs: An Economic Force in India

Dr. Ruhi Bakhare
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Abstract

During the last two decades, Indian women have entered the field of entrepreneurship in increasing numbers. With the emergence and growth of their businesses, they have contributed to the Indian economy & society. These women entrepreneurs have entered many industries and sectors. Many of the earlier obstacles to their success have been removed, yet some still remain. Further, there has been much progress in the training and development of women entrepreneurs within public policy and academic programs.

This paper examines issues like why do women undertake entrepreneurship in India? What factors influence the strategic growth of women-owned businesses in India? What are the characteristics of Indian women entrepreneurs and their businesses? What have been the greatest obstacles and challenges for women entrepreneurs in India?

Key Words

Women Entrepreneurs, Indian Economy, Indian Society, Entrepreneurial Development in India

Biography

Dr. Ruhi Bakhare (M.com, MBA, PhD), is a Full time, Approved Faculty in a NAAC & NBA accredited "A" grade Institute DAIMSR, Nagpur with an experience of 13 years in the field of academics. She is an approved PhD Guide of Nagpur University. 7 scholars have already been awarded PhD under her guidance and 3 are under process. She has a couple of copy rights and a patent in her name. Has published and presented more than 30 research papers in National and International journals and conferences. She has been conferred many awards by various organizations and institutions. She is working on an ISSR project. Her core domain is Research, Marketing Management, Business Ethics and Managerial Economics. She contributes as a resource person in various UGC-HRDC sponsored refresher courses organized by Universities. Well acquainted with software like SPSS, AMOS, SmartPLS and R.

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Teachers' Competence and Extent of Integration of SustainableDevelopment Goals in Teaching Science

Dr. Anna Liza G. Santillana
Philippine Normal University Visayas, Philippines

Abstract

This study utilized the ADDIE model design aimed in determining the competence and extent of integrating Sustainable Development Goals in the lesson of science teachers. A document analysis of SDG related topics in the current textbooks used in the Department of Education which is aligned to the K-12 science curriculum was conducted. The resulting SDG's of the document analysis was used for the teacher's self-assessment to determine their competence and extent of SDG's integration in science. In order to obtain the teacher's views and opinions and attest the agreement of the major component of the instructional materials specifically on the content, SDG's integration in the specific lessons and alignment to the competency of the K-12 science curriculum and format of the lesson exemplars, a Focus Group Discussion (FGD) was conducted. This utilized forty (40) science teachers from the seven Central Schools as respondents with the seven
of them as participants in the focus group discussion. Results revealed that teachers have a very low extent of integration on the three sustainable development goals namely SDG 2 which deals with topics on Zero Hunger, SDG 12 which address on Responsible Production and Consumption Pattern and SDG 14 Life Below Waters. This likewise revealed that teachers do not know the competences expected from them in therms of integrative teaching for the attainment of the sustainable development goals (SDGs).In conclusion , science teachers are not fully aware of the 17 SDGs neither do they know how the education system can facilitate its achievement. Based on these results , recommendations were made , among which is building the capacity of teachers on pedagogical techniques and development of SDG embedded instructional materials in other subjects as a tool necessary for the learners' in depth awareness and knowledge of the sustainable development goals.

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Biography

I'm an associate professor from Philippine Normal University Visayas the Environment and Green Technology Hub, I was the former Director of the Center of Environment from 2014 to 2019 and was in charge of the community extension program with which I started a mangrove rehabilitation program that in the university adopted community since 2013 collaborating with people's organization in the coastal area. I organized a group of fishermen to assist and help maintain the rehabilitation site. This program gave birth to the Community-Based Education for Sustainable Development project on the Preservation of Indigenous Knowledge of Fisherfolks in the Rehabilitation of Mangrove- A Climate Action", this project was cited by UNESCO this year as one of the model project in the published Guide for the Implementation of Community -Based ESD with other 4 projects from countries in the South East Asia.

I was awarded the ESD Fellow in Bangkok, Thailand by SEAMEO in 2019, with which I was appointed as the focal person for ESD at Philippine Normal University Visayas. I'm the one in charge of the regulation of pollution control of the campus as its officer (PCO) for the implementation of environmental policies and other statutory requirements that is mandated by the International Standard Operation for the Environment Management System (EMS).

These responsibilities were on top of my teaching loads as the member of the science department in the basic education and tertiary level.

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Thermoelectric Heating and Cooling Blanket for Medical Purposes Using Thermoelectric Effect

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Risha Mal
National Institute of Technology, India

Abstract

Hyper/hypothermic patients in hospitals are required to be constantly monitored by a designated nurse when they are being treated by the doctors to bring their temperature back to a safe value. The fully automatic thermoelectric heating/cooling blanket system will constantly monitor a patient's core body temperature, and will regulate the temperature of the blanket accordingly. The blanket utilizes the peltier effect to accomplish its task i.e. heating or cooling the patient side of the blanket. In peltier effect when a positive current is applied across the two dissimilar metals, one side of the thermoelectric module (TEM), will heat and the other side will cool. When a negative, reversed current is applied across the same two dissimilar metals, the side that was heating will begin cooling. The system uses Arduino Uno (controller), temperature sensors, thermoelectric modules (TEMs), aluminium heat sinks, solid state relays etc. The system has a manual set point option along with an automatic option. The system also considers patients age to choose the set point (reference temperature) in automatic mode. The complete prototype has been developed and tested for its efficiency and plotted graphs for comprehensive understanding.

Keywords

thermoelectric cooler, peltier effect, cooler/warmer blanket, medical application

Biography

Atul Shukla: He did his B.Tech from the Electrical Engineering Department at National Institute of Technology, Silchar, Assam, India. He is currently working as Senior Engineer in Oracle. He has kin interest in product development and coding.

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Promoting Sustainable Coastal Tourism in Unexploited Beaches of Odisha

Tofan Singh
Asst. Professor Tourism and Hospitality, BB Autonomous Mahavidyalaya, India .
Dr. Ravish Mathew
Assistant Professor, Sri Sri University, India

Abstract

Tourism in coastal areas brings along both positive and negative effects on the environment as a result of activities exerted upon such areas by proponents and tourists. While tourism development results in the modification of coastal environments, it can also flourish where such environments are left unmodified as the pristine nature of the environments attract visitors. Alternatively, in order for marine and coastal tourism to develop and continue to attract tourists, there is the need for an integrated approach that can be translated into a sustainable coastal tourism development. Beaches in Odisha are perhaps the best attractions of the state, with a coastline of 485 km along the Bay of Bengal; Odisha is home to some of the best beaches in India. The Government focus is still on the popular beaches like Puri, Chandrabhaga, Gopalpur, Chadipur. Not much emphasis is been given by the Government on these unexplored beaches. Tourism potential of such beaches are still remaining to be tapped. Tourism development for such beaches is not yet planned and marked by the Government in tourism map of Odisha. This requires immediate attention of the government to have a proper planning and development approach so as provide a quality experience for the tourists contributing to the positive impacts of tourism development to the local community. Since tourism development will results in issues like adversely affecting the natural and socio-cultural environment, there is need to integrate sustainable development in planning for costal tourism development of such beaches in order to harness the long-term benefits of coastal tourism development. The study is exploratory in nature and based upon collection and analysis of both primary and secondary data.

Keywords

Coastal Tourism, Beaches, Odisha, Sustainable Development, Tourism Planning

Biography

Tofan Singh, Assistant professor dept of Tourism and Hospitality management. B.b autonomous Mahavidyalaya chandikhole Jajpur odisha. MTHS,MBA and has 11 years teaching experience

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Mapping the Environment and Green Technology Education Concepts in the Basic Education Textbooks

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Abstract

This study explored the Environmental and Green Technology Education Concepts in Basic Education public textbooks. It used qualitative content analysis as research design. There were 50 textbooks non-randomly selected and were analyzed and coded. Results showed that there were Environmental Education (EE) concepts integrated in the textbooks, however there were no integration on Green Technology Education (GTE). The areas on EE found in the textbooks centered around

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Environmental Sciences, Human Systems and Development and Education and Teaching. Specifically, themes such as, Stewardships, Mitigation and Curative Action, Local and Global Needs were among the integrated themes in the textbooks. Emergent themes such as concepts on living and non-living things, matters, and energy were found to be integrated in the science textbooks. Though the textbooks contained EE integration, however their integration was minimal and limited. Textbooks did not give more emphasis on the EE integration. Hence, it is recommended that textbooks as the core source of the subject in the basic education must promote EE to develop the learners' knowledge, awareness and appreciation in the natural environment.

Key words
Environmental Education, Mapping, Textbooks, Basic Educations

Biography
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Can COVID-19 turn out to be a blessing in disguise for E-payment industry

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Abstract

Electronic or digital payment often termed as E-payment has seamlessly become part of our daily life. After the demonetization digital conceptualization and business processes got an unprecedented boost. India still being predominantly a developing country lacks infrastructure, inclination and support system. India being the huge country offers colossal opportunity for this sector to grow. Given the current pandemic situation which was completely unheard of the virtual payment has gathered steam. People have become paranoid and are trying to avoid physical contact and hence E-payment or digital payment offers them a safer avenue to do so.

The research aims to deepen the understanding of barriers and incentives for the acceptance and use of electronic payments from the perspective of buyers and sellers. Nowadays we all notice that more and more consumers are moving towards E Payment due to many reasons like convenience, smart devices. Each stage in the development of an E Payment is an exciting experience. In this research the researchers will perceive the importance E Payment. This topic will help the researchers to know the perception and importance of cashless economy among its users. How it eliminates the security risks that come with handling of cash. It will also include the various features of electronic payment. Currently the world is facing the spread of airborne disease (corona virus) so the research will also cover the major issue that how E Payment can feasibly break the link of airborne disease from spreading. The digital payment has been keeping economies running and helping people reduce the contact with virus. The researcher will help us to know the probability of sustainability of E Payment in rural areas.

Electronic payment has been improving individual's quality of life through providing ease of payment for online payment. The researchers are mainly focused on the effect of trust and security which is the main debatable topic in e payment. This research has developed a conceptual model to

examine the determinants of perceived security and trust as well as the impact of perceived security and trust on the use of electronic payment. The research indicates that both perceived security and trust have a significant influence in electronic payment. The researchers also discussed about the risk of fraud.

The researchers while carrying out the research intends to study several touch points to get a wholesome view. The researchers will carry out a primary research while covering and contacting several stakeholders. The researcher intends gather the data from e-payment users and non-users. The researcher will also gather the data from road side vendors who are e-payment users and non-users.

Key Words

E-payment, Cashless transaction, buyer perception, sellers' attitude

Biography

Dr. Saket Narendra Bansod (MBA, PhD), is a Full time, Approved Faculty in a NAAC & NBA accredited "A" grade Institute DAIMSR, Nagpur with an experience of 8 years in the field of academics. Has 1 copyright. Has published and presented more than 25 research papers in National and International journals and conferences. Has won several awards in presentations and conferences. Has 5 Scopus publication to credit. Well acquainted with software like SPSS, AMOS.

The Curriculum of the Most Sustainable and Eco-Friendly Universities: A Multiple Case Analysis

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Dr. Bert Jazmin Tuga
Philippine Normal University Visayas, Philippines.
Ma. May Flor V. Sentina
Philippine Normal University Visayas, Philippines.
Judith P. Recaido
Philippine Normal University Visayas, Philippines.
Noel S. Marañon
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Abstract

This multiple case analysis looked at the Teacher Education Curriculum of the three most sustainable and eco-friendly universities around the country. It also attempted to explore the factors which enabled the schools to transition themselves into sustainable and eco-friendly institutions. Three universities who were national winners in the Search for the Most Sustainable and Eco-friendly Schools, an annual contest sponsored by the Department of Environment and Natural Resources were included. Focus group discussion among three groups of participants were conducted. Informal interviews were also conducted to supplement the data. To establish trustworthiness, member checking and triangulation were utilized. Results revealed that though not much innovation has been made on the written curriculum as it follows the prescribed curriculum of the Commission on Higher Education, innovations can be seen in the integration of environmental topics across courses and in the methods and approaches to teaching. This study also identified other key success factors in transitioning schools into sustainable and eco-friendly school. Finally, implications to Philippine Normal University Visayas (PNUV) as an Environment and Green Technology Education hub were

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identified. This study became one of the sources of the baseline data for PNUV to craft its Environment and Green Technology Education Curriculum.

Biography

Ma. Wenna B. Fernandez is a professor of Social Sciences and currently working on her PhD.
Dr. Bert Jazmin Tuga is the President of the Philippine Normal University.
Ma. May Flor V. Sentina holds a PhD in Guidance and Counseling and is a professor of Social Sciences.
Judith P. Recaido is one of the professors in the Faculty of Teacher Development.
Noel S. Marañon is a registered guidance counselor and is the coordinator of the Office of Guidance and Counseling Services.

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Importance of Lactobacillus as Beneficial Gut Microbes

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Abstract

The human gut harbors many beneficial microbes for most of the metabolism, regulation and plays a beneficial role in maintaining human health in many aspects. The digestive system of a healthy human is inhabited by many bacterial species which have already been reported.Lactobacillus is one such important bacteria that inhibits Irritable Bowel Syndrome in humans which causes pain in stomach, constipation and diarrhea. Lactobacillus aids digestion, reduce constipation, resists infectionshelping in nutrient metabolism. Some species like, Lactobacillus plantarum, Lactobacillus fermentum and Lactobacillus reuterihelps in regulating tight- junction proteins, protect against chemical-induced disruption of epithelial barrier and serum total cholesterol. The Lactobacillus brevis OW38 strain improves the expression of intestinal tight junction proteins, along with reducing the Firmicutes to Bacteroidetes ratio. Lactobacillus helveticus reduce anxiety and have beneficial psychological effects. In case of colon tumor, Lactobacillus acidophilus aids in suppression of multiplicity and size. Lactobacillus rhamnosus, a type of bacteria that produce the enzyme lactase. They are considered as probiotic. In this review the significant role of different species of Lactobacillus on human health has been thoroughly discussed.

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Biography:

I have completed my B.Sc. (Hons) in Zoology and currently pursuing M.Sc in Microbiology. I am doing internship at ICMR-NICED,KOLKATA on the topic bacteriophage. I have a keen interest on my subject for which I wish to go for research experience in future. I also want to work on the given topic: Importance of Lactobacillus in human gut.

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A Study on Effect of Stress Management on Communication Effectiveness

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Abstract

This researcher is viewed as another direction to the analysts, as it offers the perceived work hypothesis and practice of the pressure the executives as a part of passionate insight and correspondence adequacy. Additionally, this investigation may track down a base where the specialists move from it to a more broad field towards exploration and assessment about the pressure the board as a part of enthusiastic insight and correspondence viability on various areas.

Other than this, the examination conveys a cutting edge direction which shows the chiefs and the leaders in the organizations, the impact of pressure on the board as a part of passionate insight and correspondence viability in their associations as they utilize it in creating ground-breaking thoughts which assists them with underwriting the HR which will be decidedly pondered their associations.

Key Words

Emotional Intelligence, stress management, communication effectiveness and employee satisfaction

Biography

Dr. Nirzar M Kulkarni (B.E, MBA, SET, Ph.D.), Working as a Professor & Dean in a NAAC & NBA accredited "A" grade Institute DAIMSR, Nagpur with an experience of 24 years in the field of academics. He is an approved Ph.D. Guide of Nagpur University. 14 scholars have already been awarded Ph.D. under his guidance and 2 are under process. Has 2 copyrights and 1 patent to his name. Has published and presented more than 50 research papers in National and International journals and conferences. He also has 5 Scopus publications to his credit. Is an appointed member of Board of studies in University board. Is appointed as chairperson in computer application board. Has also been appointed member of RRC in Business management at Pune University. Well acquainted with software like SPSS, AMOS, SmartPLS, and R.

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Sustainability and Go Green Awareness: Study Perspective to Plastic Consumption by Online Food Delivery Services


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Dr Harvinder Singh
Lovely Professional University, India

Abstract

The restaurant industry is just one of the hit areas being hardest regarding the COVID-19 pandemic. The closures which are too long decreasing patrons set off by neighbourhood lockdowns have actually enforced financial struggles for numerous restaurants and meals establishments. Through the worldwide 2020 outbreak that is COVID-19 the demand of web food delivery were rising, as it facilitated customer access to meals that are prepared and deliver at their doorstep by service providers. The need that is growing this sort of food service is predicted to substantially affect the consumption structure of restaurant patrons, which might accelerate the intake of single-use plastic materials and ecological impacts include the generation this is certainly considerable of and its high carbon footprints. Moving ahead, stakeholders must consider just how better to mitigate the unfavourable impacts of online food delivery services. In this study, challenges relating to consumption this is certainly associated with online food delivery solutions are presented along with tips about how to deal with all of them. From the suggested activities becoming implemented, it seems that online food service providers are in a central place, if they take actions that would be possibly high-impact a relatively faster result will see contrast to various stakeholders, such as the customers, restaurants, and governing bodies. Hence, encouraging greater responsibility and initiatives from online food service providers are crucial within the drive go green and eliminate the usage of plastic materials derived from meals deliveries.

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Biography

Narinder Kaur is a Research scholar at Lovely Professional University Punjab (INDIA). Her research focuses on Service Marketing including online food services and hospitality management.

Dr Harvinder Singh is an Associate professor at Lovely professional University Punjab (INDIA). Research focuses on Marketing Management and information system including Social media marketing, Digital marketing

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Technopark: A Strategy to Build Partnership in Educational Instituions and Industrial Using Concept of Collaborative Knowledge Creation

Iis Mariam
Politeknik Negeri Jakarta, Indonesia
Nidia Sofa
Politeknik Negeri Jakarta, Indonesia
Endah Wartiningsih
Politeknik Negeri Jakarta, Indonesia

Abstract

Purpose of the study: the premise of this paper was to analyze the implementation of the policy of the Minister of Education and Culture regarding independent learning in an independent campus. Referring to the Politeknik Negeri Jakarta, and RIRN strategic plans regarding the direction of research, it is necessary to research innovations that have economic value through collaborative knowledge creation as a strategy in increasing organizational competitiveness, innovation, and the formation of Technoparks. **The problem** in this research is the partnership strategy carried out by educational institutions and industry using the concept of collaborative knowledge creation? This research was conducted at Bandung Techno Park and Jakarta State Polytechnic. **The research method** uses systems thinking with a soft system methodology (SSM) approach, and data collection techniques use interviews, observations, literature studies, and documentation. The organizations involved are Bandung Techno Park. **Main findings**: Bandung Techno Park is a business-oriented organization, building networks and partnerships with industry, companies, and educational institutions. PNJ has built partnerships with companies, institutions and the concept of collaborative knowledge creation has been implemented to improve organizational competitiveness

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Keywords
Technopark, collaborative knowledge creation, SSM

Biography
Dr. Dra.Iis Mariam, M.Si has been teaching since 1988 at the Polytechnic Education Development Center (PEDC) Bandung as a Master Teacher, since 1992-now teaching at the Department of Commerce Administration - Jakarta State Polytechnic (formerly UI Polytechnic), in Depok. The author graduated S1 in Office Administration at IKIP Bandung (1987), S2 (1999), and S3 (2014) in Business Administration, University of Indonesia. Actively providing training in government institutions, institutions, and companies in office administration, secretarial, excellent service management, ethics and protocol, report writing, Character, and Applied Approach. Research and community service interests focus on the areas of organizational development and administration. Several books and book chapters (BC) have published in PNJ Press, Madani Press, and AWC Press for book titles: Introduction to Administration Science, Excellent Service Management, Secretariat for Business, Registration for MICE, Introduction to Tourism, Introduction to Modern Offices, Business Management Policy Models Tourism Village, Managing Catfish Business, Polytechnic Curriculum Mapping Model with the Concept of Collaboration Knowledge Creation and Pentahelix, BC: Our Devotion to Mother Earth, BC: Changing Trends in Higher Education on Merdeka Campus, Secretary, and Professional Administrative Assistant. Involvement in professional associations started from 1990-1992 as a member of the Bandung branch of the Indonesian Secretariat Association (ISI), in 1994 – now at the Jakarta branch of ISI, management at BPP-ISI (2018-2021), ISI Supervisory Board (2021-present), member ISEI Jakarta campus compartment of PNJ, APDOVI, ADPI and the Indonesian Lecturer Career Forum (FKDI). The author is also an assessor at the Professional Certification Institute (LSP1 PNJ) and a reviewer of journals: Diffusion (Polban), Bhakti Persada (Bali State Polytechnic), Social Humanities (Bali State Polytechnic), Epigram (PNJ), and Economicus (STIE Dewantara, Bogor) and has certified for non-fiction writing competence from BNSP.

The Effect of “Competitive Benchmarking" on the Sales

Narulita Syarweni
State Polytechnic of Jakarta, Indonesia

Abstract

This study aims to determine whether there is an influence between the use of "Competitive Benchmarking" on the competitive advantage of Cafe B in East Jakarta. The research was conducted using qualitative methods and using data collection techniques using data and interviews with owners and management at cafe B covering the objectives of utilizing Competitive benchmarking, benchmarking processes and the effect of benchmarking on the company's competitive advantage. The data related to benchmarking itself includes evaluation of performance per day, targets for tomorrow, wages of Human Resources per day and benchmarking with similar cafes in the same environment to find out the ranking of cafe B per day and cumulatively. While the stages include the planning stage (Plan), the stage of Searching for similar companies in the same area (Search) as the main competitor, the stage of Observation/collecting data (observe), the Analysis stage (Analyze) to determine the position of Café B and the stage of .composing and implementing it into a work program (Adapt). while the measure of competitive advantage is seen from the marketing mix-7 P's, namely product, price, promotion, place, physical evidence, people and process. The result: the use of Benchmarking has an effect on the level of sales in B café.

Keywords

Benchmarking, competitive benchmarking, organizational performance.

Biography

Name: Narulita Syarweni, female, born in Jakarta October 22, 1964, Bachelor's Degree from Trisakti Economics Faculty, Masters in Planning and Public Finance, Faculty of Economics, University of Indonesia (scholarship), Doctoral Human Resources Management MSDM, State University of Jakarta. Lecturer since 1989 at the Jakarta State Polytechnic, has transferred to the East Timor State Polytechnic, the Bali State Polytechnic and finally returned to the Jakarta State Polytechnic. Rank 4 A, head lector. Owns 4 book copyrights from the Ministry of Law and Human Rights of the Republic of Indonesia, namely the International Trade book, Budget Diktat, Financial Management Book and Dissertation, in addition to having two copyright articles for community service groups about pentahelix and tourist villages. Award received by Satyalancana Karya Satya XX years from the President of the Republic of Indonesia. Become a substantive editor of the Professional Certification Institute for Writers and Professional Editors of BNSP in 2021 and Assessor for BNSP's Commercial Administration since 2010.

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Education figures view on Arabic language learning curriculum (Kh Imam Zarkasyi and Nurcholis Madjid)

Ahmad Nurcholis
UIN Sayyid Ali Rahmatullah Tulungagung, Indonesia.

Abstract

Purpose of the study: the premise of this paper was to find out how the Islamic education figures view on Arabic language learning curriculum. **Method**: it was heuristic research that the processes aimed at discovery to find the underlying meanings of important the education figures' experiences. The Grand Theory used is Thomas Lickona (1992) who stated that in the educational curriculum the main priority is the good character which consists of three components included moral knowing, moral feeling, and moral action. **Main findings**: curriculum is very significant in the learning system to make the teaching-learning process run well. Imam Zarkasi applied Kulliyatul Mu'allimin Al-Islamiyah in the modern Islamic boarding school of Gontor with 100% general materials and 100% religious' materials. Meanwhile, Nurcholis Madjid viewed that the educational curriculum must be balanced especially in learning *Nahwu-Sharaf* (Arabic Grammatical), *fiqh* (Islamic rules), *tasawwuf* (mysticism in Islam), *aqaid* (truth), *tafsir* (interpretation), and *hadith* (tradition of the prophet).
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Keywords

arabic, curriculum, Imam Zarkasyi, Nurcholis Madjid, thought.

Biography

Author

Dr. Ahmad Nurcholis, M.Pd. is a lecturer of Arabic Education Study Program and the Head of Management Dakwah Department, Faculty of Ushuluddin, Adab, and Dakwah of UIN Sayyid Ali Rahmatullah Tulungagung. He has a motto: Optimism, Ikhlas, and Solidarity. He is the founder of three dakwah dimensions: Oration Dakwah, Literacy Dakwah, and Art Dakwah. He has 10 HAKI (Intellectual Property Rights), a writer for many articles and books. His bachelor, master, and doctoral in Arabic Language Education were pursued at UIN Maliki Malang. He got the cum-laude predicate and received a doctoral certificate of appreciation for the achievements from the Rector of UIN Maliki Malang, Prof. Dr. H. Mudjia Rahardja, M.Si. He is a participant of ARFI (Academic Recharging for Islamic Higher Education) Ministry of Religion at the graduate program of Al-Azhar Cairo Egypt in 2015. He had a short course at Ramkamheng University Bangkok Thailand in 2014 and KUIM University Malaya Malaysia in 2014. He visited Abu Dhabi in 2015, Singapore in 2014, and Saudi Arabia in 2016 and 2017. Awards and achievements he received such as (1) Satyalancana Karya Satya X from President Joko Widodo, (2) The Best Muballigh of Madu TV Tulungagung in 2018, and (3) National Champion for academic writing competition organized by the Managemen Dakwah Journal of UIN Sunan Kalijaga Yogjakarta in 2020. As a speaker in International Conference on Education, Management, and Social Sciences in Santika Premiere Hotel, Malang, Indonesia, at 14th November, 2020.

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Manufacturing and Reading Analysis of Carbon Dioxide Sensors in Exhaust Gas Analyzer on Variation of Fuel Based on Android Applications

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Politeknik Negeri Malang - Indonesia
Hanny Hardiyana
Politeknik Negeri Malang - Indonesia

Abstract

The increasing human activity, the need for motorized vehicles is increasing. The increasing number of vehicles, it will have a bad impact on the environment because of the exhaust emissions produced by vehicles. There are harmful gases such as CO, HC, CO2, Pb, and others, which further strengthens the detection of exhaust gas emission levels. Procurement of this emission test equipment is very expensive and maintenance costs are also expensive. Therefore we need exhaust emission test equipment that can overcome these problems. The purpose of this study was to examine the effect of the type of fuel, and variations in engine speed on the results of carbon dioxide exhaust emissions, and to obtain the data, a vehicle exhaust emission test was conducted using standard tools, by varying the fuel type from pertalite, pertamax, pertamax plus, and engine speed from idle to 5000 RPM. The research method used to process data is using Two Way ANOVA to make data analysis decisions. Two Way Anova is one of the comparative tests used to test the difference in the average data of more than two groups. With the condition that it must have two independent variables, and the dependent variable. The results of this study there is an effect of fuel variations and engine speed on the readings of the carbon dioxide gas sensor on a standard tool.

Keywords

portable gas analyzer, exhaust gas analyzer, carbon dioxide, exhaust emissions, fuel.

Biography

Mira Esculenta Martawati ST.. A lecturer in Automotive Electronic Mechanical Engineering Department - State Polytechnic of Malang, Indonesia. Bachelor of Science in Electronic Engineering, Brawijaya University, Malang, Indonesia . Master degree in Electronic Brawijaya University, Malang, Indonesia.

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Producing the Railway Sleeper Using the Plastic Waste as the Raw Material

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Heru Purnomo
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Abstract

TWaste problem in Indonesia is a pressing matter since plastic around 25,000 tonnes of plastic is produced per day, with at least 20 per cent of which is believed to end up in rivers and coastal waters. The Indonesian government aims to triple the nation's capacity to collect plastic waste in this decade to address a key inhibitor to developing the recycling industry and work toward fulfilling its promise to cut waste. The Ministry of Environment and Forestry on July 7, 2021 unveiled a 10-year projection model on 10 per cent annual growth in the nation's plastic waste collection capacity to reach a target of 4.29 million tonnes by 2030. The objective of this paper are to describe, to explain, and to analyze the rail way sleeper using plastic waste as raw material. The research variables are processing the plastic railway sleeper and the field testing. This research applies a qualitative approach. The research results reveals is there is no cracking, shrinkage, water absorption, and fibre in plastic railway sleeper and the sleeper flexible is good.

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Key Words
railway sleeper, plastic waste, shrinkage, absorption.

Biography
Dr. Ir. Bambang Sugiyono Agus Purwono, MSc born in Maospati, Indonesia, 5th March 1954. A lecturer in Mechanical Engineering Department - State Polytechnic of Malang, Indonesia. Bachelor of Science in Mechanical Engineering, Faculty of Technology, Brawijaya University, Malang, Indonesia (1982). Master degree in Management and Industrial Engineering, Bandung Institute of Technology (ITB), Bandung, Indonesia (1988). Doctor in Management Science, Faculty of Economics and Business, University of Brawijaya, Malang, Indonesia (2011).
Indonesian Ministry of Education and Culture sandwich program in La Trobe University – Melbourne, Australia (2009) as a participants.
International Journal have already published are the strategy of simulation effect of wind speed, vaiation of turbine blades and it's interaction to the power generated by vertical axis wind turbine using NACA 2412 (IJET UAE – 2018), Simulation of Vertical Axis Wind Turbine (VAWT) Using Turbine Blades NACA 4412 type (IJSSST – 2019). Micro Hydro Power Plants (IJMPERD – 2019), Energy Procedia (2013, and 2015), TEM, JARDICS, and IJ Psychology and Education (2021).
Textbooks have been published are Strategic Planning, Production Management, Engineering Termodynamics, Heat Transfer, Maintenance Management, Entrepreneur and Technopreneur, Engineering Mechanics, Linear Programming, and Research Methodology.
Also as a speaker in numerous international conferences and national seminars about Entrepreneurship and Cooperative, Balance Scorecard, SWOT Analysis, Strategic management, and Renewable Energy, Wind Turbine, Plastic Waste, Quality Control, Water Treatment Plants, and Micro Hydro Power Plants in Malang, Bali, Yogyakarta, Bandung, Jakarta - Indonesia, Timor Leste, Melbourne - Australia, Hong Kong Polytechnics University - Hong Kong (2013), National Institute of Technology, Tiruchirappalli, India (2014), Bangkok- Thailand (2017), Manila – Philippines (2018), Kuala Lumpur – Malaysia (2018, 2019), Singapore (2019), Beijing (2019), Malang (July, and November 2020), and Jakarta (2021).
As a Keynote speaker at 4th Go Green Summit International Conference in Kuala Lumpur, Malaysia (2018), and ICREET 2019 – Jakarta.
As a conference chair in International Conference on Smart Green Technology in Malang – Indonesia (August 27-28, 2018), 4th Go Green Summit International Conference in Kuala Lumpur, Malaysia (December 29-30, 2018), 5th Go Green Summit International Conference in Singapore (October 18-19, 2019), Climate Change International Conference in Beijing - China (April 11, 2019), 6th Go Green Summit International Conference in Malang, Indonesia (July 1-2, 2020), and International Conference on Management, Education, and Social Sciences, Malang, Indonesia (November 14, 2020), 4th International Conference on Emerging Trends on Engineering Science, Technology and Management (Jakarta, 2020), and London International Conference/LIC (September 2021).
HIV AIDS advocacy in Bangkok – Thailand (1998) and Wuppertal – German (2002) as a participants are sponsored by UN AIDS.
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BFAR-CHED Mangrove Resource Rehabilitation and Protection Management Strategy: Sagay City Experience

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Ruperto P. Bayawa JR
Northern Negros State College of Science and Technology, Philippines
Leonardo N. Morales JR
Northern Negros State College of Science and Technology, Philippines

Abstract

The mangrove rehabilitation in the coastal areas of *Sagay City* was intensively done after the implementation of the Philippine National Aquasilviculture Program from period 2015-2017. This study aimed to assess the following: the implementation strategies and management scheme, the extent of rehabilitation, the identification of mangrove propagules to be planted in different areas, the volume of propagules planted, the identification of planting areas and its beneficiaries, and the status of the rehabilitation program as to survival. Under this project, four coastal *barangays* were identified as rehabilitation areas. *Old Sagay* has a total area of 15.0 hectares with 112,500 propagules planted. *Taba-ao* with 1.0 hectare and 7,500 propagules planted. *Bulanon* covered 10.5 hectares with 78,750 propagules planted , and *Vito* with 7.5 hectares planted with 67,500 propagules. *Bakhawan (Rhizophora apiculate)* was the mangrove species used for this project. The program was participated by 12 fisher folk associations as beneficiaries. A total of P1,785,000.00 was disbursed as incentive at P7.00/propagule planted and survived after six to eight months. Growth and survival was heavily affected by weather conditions, pest infestation and human wanton activities. Mean survival rate registered at 74%.The implementation strategies and management was found to be efficient and effective. However, survival rates of mangrove propagules was rated 74% after a year of implementation. The program is sustained by soliciting financial, legal and organizational support from NGO's (Non-governmental organizations), LGU's (local government units) and related national government organization agencies (GO's). Strict local government policy is implemented for mangrove protection. These mangroves' areas is added as agri- and eco- tourism sites of *Sagay City* and of Northern Negros State College of Science and Technology.

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Keywords
Mangrove, Fisher folks, Rehabilitation, Ecosystems, Propagules

Biography
Though new in the CHED (Commission on Higher Education) Ms. Anabelle Villaceran is not new in the government service. As a license Professional Teacher (LPT), she worked in the Department of Education for almost twenty-five years as a Technology and Livelihood Education Teacher in Junior and Senior High School . She was assigned as Teacher in Civil Technology ,Technical Drawing, Agriculture and Fishery Arts. In her late years in the Department of Education she was assigned as Food Trade Teacher when K-12 Curriculum was being embraced again.

In her three years as instructor in Northern Negros State College of Science and Technology she had patented twelve utility models in food innovation. Presented five researches in Regional, National and International level. Research authors of the recent approved funding for Sustainable Agri-tourism and Facemask Production.

Anabelle Villaceran earned her Bachelor of Science in Industrial Education Major in Home Economics at CHMSC, Master in Education at St. La Salle University-Bacolod and On-going Ph.D. in Technology Management at Northern Negros State College of Science and Technology.

She loves nature, she loves Himoga-an river ,its sipping rainbow, the sunrise and its sunset and enjoys promoting green and blue economy in the place.

She lives in Brgy. Fabrica, Sagay City, Negros Occidental, Philippines, where she embraces the rhythm of the flowing noise of Himoga-an river and enjoys walking on the edge of the river bank.

Heterogeneous Catalytic System for Transformations of Inedible Biomass into Valuable Chemicals

Jaya Tuteja
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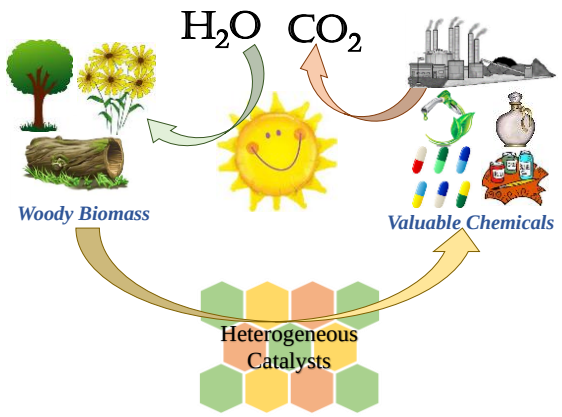
Abstract

During the last century, the standard of living of our society has been reached to a high level on the cost of utilization of natural fossil resources. Considering the diminishment of these resources, it is imperative to make the transition from non-renewable fossil fuel to renewable biomass resources to meet the future demands. A fundamental challenge in the conversion of biomass into tailor-made fuels is to develop cost effective processes for transformation of the high oxygen content of saccharides. The current biomass conversion methods are dominated by high-temperature pyrolysis and acid-catalyzed dehydration, which leads to difficulty in recovering catalyst from the reaction mixture and pose environmental and health risks. The aforementioned difficulties associated with the previous reports can be alleviated by developing suitable heterogeneous catalytic system for desired chemical transformations.



As sugars comprise the main class of biomass compounds, the selective conversions of sugars to produce furan compounds were carried out over solid acid and base catalysts in one-pot manner. Among them 5-hydroxymethylfurfural (HMF) has received a considerable attention owing to its potential in bio-refinery. Subsequently, HMF was selectively transformed into 1,6-hexanediol (HDO) *via* Brønsted acid-catalyzed hydrogenolytic ring opening of HMF by transfer hydrogenation methodology using formic acid (FA). The produced HDO from renewable resources has immense advantages in polymer industry owing to its terminal hydroxyl groups. The same molecule can be further transformed into other valuable chemicals. One chemical of such immense value is 6-hydroxycaproic acid (HCA) that has potential applications in polycaprolactone production.

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In conclusion, these new pathways contributes to significant improvements or novel strategies for the more efficient and economical utilization of woody biomass to produce important industrial commodities.

Keywords
Biomass, Heterogeneous Catalysis, Sustainable Chemistry, Analytical Techniques, Organic, Transformations.

Biography
Dr. Jaya Tuteja is currently working as Assistant Professor, Department of Chemistry, faculty of applied science, Manav Rachna University since January 2018. She earned her PhD degree in Materials Science from Japan Advanced Institute of Science and Technology (JAIST), Japan in 2015 and was awarded as "Excellent Doctorate Student" by JAIST. She has also been selected for the dual graduate school program between Delhi University, India and JAIST, Japan. She studied as a visiting master-course student in JAIST for one year from Jan 2011-Dec 2011 and earned a M.S in Material science from JAIST and M. Tech Chemical Synthesis and Process Technology from Delhi University in the year 2012.

she has published 5 research papers in reputed international journals with a sum of impact factor of >25. She also has 2 patents filed on her name from her PhD research work. One of the article entitled with "*Direct Synthesis of 1, 6-Hexanediol from HMF over a Heterogeneous Pd/ZrP Catalyst using Formic Acid as Hydrogen Source*" ChemSusChem 7 (1), 96-100 has reached to a citation of more than 100 and was selected among 25 Most Accessed Articles from ***ChemSusChem***. Her first research article entitled with "*One-pot synthesis of furans from various saccharides using a combination of solid acid and base catalysts"* was selected as cover page and was awarded with a **BCSJ award article**. She also has 1 book chapter in her account.

Before joining Manav Rachna University, she was working in a chromatography Industry YMC India Ltd. as a Technical and Application Manager. Where her roles and responsibilities were to handle all technical issues related to HPLC columns; conduct seminar on YMC columns, its chemistries, application for pharma compounds all over India in pharmaceutical industries.

Her research area includes development, characterization and application of Heterogeneous catalysts for effective conversion of Biomass to value added products, Nanoparticles synthesis and nanoparticle based heterogeneous catalysts, bimetallic nanoparticles, carbohydrate chemistry, analytical techniques for compound identification. She has presented her research work in more than 10 international conferences held in various places of world for instance Japan, Korea, United States, Canada, Thailand and India.

Green Chemistry

Sailaja
Oracle University, India

Abstract

The real concept of the greening chemistry has been developed in regulatory and business communities due to the natural evolutions of the pollution preventive initiatives. The efforts must benefit to improve crop production, medicines and commercial products. We are also causing unintended harm to people, animals, forests and whole planet. Many of the governments have begun to regulate generations and disposal of the industrial emissions and wastes. Over many years, various principles have been proposed, which can benefited while working with designing, developing and implementing of the chemical processes and their products. There are many principles have enabled for engineers and scientists for protecting and benefiting the people, economy and planet. These principles have given by finding innovative and creative methods for reducing waste, conserving energy and discovering replacements for many hazardous substances. Green chemistry is a design of the chemical processes and products, which can eliminate or reduce the use or generation of the hazardous substances. Green chemistry can apply across the globe and life cycle of the chemical products it includes its design and manufacture, its use and the ultimate disposal. This paper will provide more details about the Green Chemistry. How the green chemistry is differing from the environmental chemistry? How the green chemistry is differing from the cleaning pollution? And the goodness about the green chemistry. Moreover, the principles of the green chemistry.

Keywords

Green, Chemistry, environment, pollution, principles, hazard, temperature, pressure, reaction, greenhouse, Waste.

Biography

Sailaja is a Principal Instructor at Oracle University. She has an extensive experience in conducting Technical skill development or enhancement programs for both project associates and business associates. She is always keeps herself abreast with new learnings. She has more interest in writing articles and participating in National and International Conferences.

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Desorption of Lead (Ii) Ions from Used Sodium Alginate-Hydroxypropyl Cellulose Adsorbent Beads

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Abstract

Efficient removal of adsorbed lead [Pb(II)] ions from the sodium alginate/hydroxypropyl cellulose beads was necessary to guarantee their long-term use for repeated sorption-elution cycles. In this study, the desorption characteristics of previously adsorbed lead ions on sodium alginate-hydroxypropyl (SA-HPC) cellulose adsorbent beads were tested using various eluents such as sulfuric acid and ethylenediaminetetraacetic acid (EDTA). SA-HPC adsorption beads were produced using 75:25 ratio of sodium alginate to hydroxypropyl cellulose via ionotropic gelation. The desorption efficiency using 0.1M EDTA was found to be the most effective at around 55.40%. The capacity of the exhausted composite adsorbent beads was determined by repeating the adsorption-desorption experiments. Beads that were subjected to 0.1M EDTA significantly altered the adsorption/desorption behavior of lead on the beads, resulting in less of the metal being adsorbed when they were subjected to another adsorption experiment. This resulted to a total decrease of 63.46% adsorption capacity of the beads after two cycles Furthermore, beads lose their physical stability after three hours of desorption.

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Biography

Assoc. Prof. Rodel D. Guerrero, Ph.D. is currently the head of the Green Research and Materials Group of the the Department of Chemical Engineering and Technology of Mindanao State University-Iligan Institute of Technology (MSU-IIT). Three members of his research group are 5th year Chemical Engineering students namely: Dan Michael A. Asequia, Imee Kassandra E. Cacho, and Joshua Emmanuel L. Hugo.

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Electric Vehicle Battery Heat Management using a Thermoelectric Cooler Powered by Solar PV with MPPT

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National Institute of Technology,India
Risha Mal
National Institute of Technology,India

Abstract

As environmental emissions and the oil shortage worsen, countries are concentrating their efforts on green energy. Electric cars, as part of the alternative energy sector, have drawn worldwide interest due to their environmental friendliness. As a safer alternative to traditional combustion engines, electric cars and hybrid electric vehicles (EV/HEV) have gotten a lot of recognition around the world and are fast becoming a fantastic alternative to automobiles fueled by internal combustion engines. Electric vehicles are a great alternative to traditional vehicles. However, various characteristics of electric vehicles, such as performance, cost, battery life, and battery safety, restrict their growth. As a result, battery management is required to get optimal performance. A Battery Heat Management System is used to dissipate the heat produced by the battery pack. The cost of an electric vehicle's battery pack is high, which makes research in this area substantial in order to increase the lifespan of the battery pack. A battery heat management system that is powered by solar power from Photo-Voltaic with implementation of Maximum Power Point Tracking (MPPT) can be very substantial. The paper aims to do the same i.e. show the results of a simulation done to observe the effectiveness of the use of a Battery Thermal Management System, employing a Thermoelectric Cooler that is powered by a Photo-Voltaic with implementation of Maximum Power Point Tracking. The paper further proposes an arrangement of a copper casing outside the battery pack which consists of four Peltier devices, cooling the battery pack from four sides, and observe the effectiveness of the same via simulation. The results are validated by MATLAB Simulink for the PV design and the results were used for heat management of a battery pack using ANSYS. The results give a clearer roadmap for the practical application of the proposed system.

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Keywords
thermoelectric generator, solar PV, Battery heat management, Electric Vehicles

Biography
Amber Negi: He completed his B. Tech from Guru Govind Singh Indraprasth University, Delhi in Electrical and Electronics Engineering. He is pursuing his Mtech from Electrical Engineering Department at National Institute of Technology, Silchar, Assam, India with Power and Energy Systems Engineering. He has a keen interest in research and programming.

Synthesis and Characterization of NaCMC/HEC/activated carbon hydrogels for the desalination of seawater

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LENSOCO, Denise Faye G
Department of Chemical Engineering, University of the Philippines, Philippines
MARANAN, James Quin B
Department of Chemical Engineering, University of the Philippines, Philippines
OBRA, Johndel B
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Abstract

Current available methods for water desalination are energy intensive, expensive, and not feasible for small-scale applications. As an alternative, hydrogels and hydrogel nanocomposites may be utilized both as raw agent and semi-permeable forward osmosis membranes to desalinate water. In this study, a non-toxic, biodegradable, and low-cost hydrogel nanocomposite is prepared by adding activated carbon (AC) as filler to as 3:1 blend of sodium carboxymethylcellulose (NaCMC) and hydroxyethylcellulose (HEC), with citric acid used as crosslinking agent. A one-factor-at-a-time (OFAT) analysis was performed to correlate the crosslinker concentration, crosslinking duration, and AC content to the mechanical strength, swelling, antimicrobial capacity, and desalination efficiency of the hydrogel nanocomposite. Results showed that the swelling of the hydrogel is directly proportional to the crosslinking duration but inversely proportional to the crosslinking concentration. The results also showed that adding the activated carbon filler improves the desalination efficiency of the hydrogels. However, it was also observed that desalination efficiency tends to decrease as AC content is increased.

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Biography

Terence P. Tumolva is a professor and head of the Green Materials Laboratory at the Department of Chemical Engineering of the University of the Philippines Diliman, where he obtained both his bachelor's and master's degree. He obtained his Doctor of Engineering degree from Tokyo Institute of Technology in 2011, and his current research interest is on bio-based polymeric materials and chemical recycling of plastic wastes.

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Walnut Shell Catalyzed Synthesis of Copper Oxide Nanoparticles under UV Irradiation, its Characterization and Synergism as Bacterial Inhibitor

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Abstract

Reduction of transition metal salts by applying greener method is one of opportunities in order for the synthesis of metal nanoparticles. Walnut shell is a natural, cheap, and worthless agricultural waste which contains cellulose and lignin. Walnut shell is biocompatible, renewable resource and biodegradable polymer containing –OH groups.1-3 In Present study we synthesized copper oxide nanoparticles from Copper (II) sulfate pentahydrate catalyzed by walnut shell.

Synthesized nanoparticles were studied using UV-Vis, XRD, SEM, EDX and FTIR analysis. The exposure of the colloidal solution of CuO NPs to UV radiation was investigated for 1, 2, and 3 h. The results showed the color change of the interaction mixture from light blue to dark brown. The absorbance reached to 650 nm using UV-Visible spectrum as evident in the formation of CuO NPs. From X-ray diffraction, the crystallite size of copper oxide nanoparticles found was 41.17 nm. SEM analysis revealed the presence of spherical particles with some agglomeration. FTIR spectra revealed the presence of functional groups related to peptides, proteins, flavonoids, monosaccharides, and phenolic compounds, which reduced copper ions. The EDX technique showed that the formed nanoparticles were CuO NPs. with copper wt % 60.79 and Oxygen weight % 39.21

Antibacterial activity was evaluated using Staphylococcus aureus and Escherichia coli. Positive test results were scored when a zone of inhibition was observed around the well after the incubation period. Antibacterial activity revealed the potential applications of green synergism of copper oxide nanoparticles. Based on the present results, it could be expected that green synthesized CuO NPs would find potential applications in the field of nanomedicine.4

Keywords

CuO NPs, Ultraviolet irradiation, XRD, Escherichia coli, Staphylococcus aureus.

Biography

Smita T. Morbale received the M.Sc. degree in organic chemistry and Ph.D. Degree in synthetic organic chemistry from Shivaji University Kolhapur. She is currently working as assistant professor at K.E.S., Anandibai Pradhan Science College, Nagothane. Raigad, Maharashtra affiliated to University of Mumbai. Her research interest in green chemistry, synthetic organic chemistry, applied sciences, and Social Sciences studies.

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Efficiency issues of Wind energy technologies: current status and scopes

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Abstract

Wind energy is an environmental derivative of solar energy. First developed in 1887, the wind turbine technology has gained popularity as globally installed onshore and offshore wind-generation capacity has increased from 7.5 gigawatts in 1997 to 645 gigawatts by early 2019. Wind power capacity in India has significantly increased in recent years. As of first quarter of 2021, the total installed wind power capacity in India was 38.789 GW, the fourth largest in the world. India has an offshore wind energy potential of around 70 GW along the coast of Tamilnadu and Gujarat.
Still the primary hurdle for the popularity of wind energy generation is its efficiency or the wind capacity factor. It tends to vary geographically and seasonally, even with the same turbines, since it depends on the wind velocity, wind density and rotor radius. The theoretical maximum efficiency of a turbine is ~59%. Most of the turbines extract far less than 50% of the energy from the wind that passes through the rotor area. The capacity factor is constantly being increased with improved rotor and gearbox technology. However, the capacity factor of wind is affected not only by upgrading turbine technology, but also wind availability itself. In 2015 capacity factor of turbines were below previous years' average due to "wind drought". Hence identification of inland windy pockets and seasonal wind cycle is essential. Also proper simulation modeling of wind farms would minimize the turbine wake effects. Grid transmission system is also important area for improvement as wind energy needs to be transmitted a long way from a comparatively desolate onshore or offshore wind farm to the nearby area demand areas.

Wind turbine technology has already a focus area for various national and international efforts. Several studies have shown that overall wind power plant output can be increased by 4%-5% through coordinating of the wind turbines to minimize the wake effects. Also the rotors size (higher cross section radius) and shape (curved rotor blade vs flat blade) can be instrumental towards efficient power

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generation.Inclusion of variable speed transmission gear system and constant speed generator has shown the potential for improving the power generation capability. Recent research efforts indicate towards better efficiency of vertical axis turbine design in comparison to horizontal axis. Grid integration has been implemented for better management of wind power. Also, modern power storage technology has been evolved so much, which can bring in a revolution in wind power sector.
Such improved technologies has reduced the production cost and made utility scale wind energy a cheaper option after the production tax credit. However more studies in the overlapping domain between the fundamental and industrial research is required that would increase the efficiency of wind energy.

Keywords
Wind energy, Capacity factor, Turbine, Rotor technology, Wind drought, Efficiency.

Biography
I am Suryatapa Das. I was born on 1st February'1997 at contai in West Bengal, India. I did my B.Sc. from University Of Calcutta in 2020. My subjects of graduation were Chemistry, Physics and Mathematics. Now I am doing my M.Sc. in Environmental Science from Adamas University. Among all the modules of my M.Sc. course Renewable energy and resources, Waste water treatment and technologies, Atmospheric Science and Meteorology are my subjects of interest.

Green Technology Interventions for a sustainable Environment

Dr Yashoda Tammineni
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Abstract

The global issues of environmental degradation have forced the society to rethink about green technologies to provide a sustainable environment for future generations. Indeed, the green technology interventions are fundamental to attain sustainable development. This paper discusses the green technology interventions and challenges for Agriculture, Water Management, Renewable energy, Green Buildings and Sustainable Architecture, Education, Food & processing, Health and Medicine, Fuel technology for aircraft and space exploration. Therefore, it urges the need for selection of the feasible green technology interventions and new innovative ways to make eco friendly changes in daily life in such a way that it conserves natural resources and the environment. Green technologies certainly shows notable results in utilizing various alternative source of technology that reduces fossil fuels and demonstrates less damage to the human, animal, and plant health, as well as damage to our planet.

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Biography

Yashoda Tammineni has a Ph.D. in Environmental Science, an MBA in Safety Management and MSc in Biochemistry. Her research interests include Environmental issues, Occupational Health, Medical surveillance and Behavior Based Safety. She is currently an assistant professor and OHS trainer. Dr.Yashoda also has extensive experience in teaching and ought to be creative and a resourceful individual in occupational health and safety. Dr.Yashoda has several national and international publications in highly recognized outlets.

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Waste Heat Recovery from an Exhaust Pipe of a two wheeler Motorcycle with a Thermoelectric Generator for Vehicle Tracking System

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Rohit Lohia
National Institute of Technology,India
Subham Gadhari
National Institute of Technology,India

Abstract

This paper focuses on how to use thermoelectric generator for vehicle tracking using waste heat recovery from the exhaust pipe. Thermoelectric equipment can be a good alternative to get efficiency by reusing heat loss and converting it into electrical energy. It's compact and solid-state with no moving part hence has a wider area for application and can be used in harsh and rough conditions as well. Four TEG's were used to extract waste heat and plot curves to check for the feasibility of implementing this. A working prototype has been developed to store the energy from TEG to a battery that can help power a tracking system.

Keywords

thermoelectric generator, vehicle tracker, Renewable energy.

Biography:

Dr. Risha Mal: She is an Assistant Professor in the Electrical Engineering Department at National Institute of Technology, Silchar, Assam, India. She did her B. Tech from Guru Govind Singh Indraprasth University, Delhi in Electrical and Electronics Engineering. She did her M.Tech from National Institute of Technology, Kurukshetra, Haryana, India in VLSI Design Engineering. She has attended many International Conferences and has many reputed journal publications. Her major interest is in thermoelectrics and renewable energies.

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Effect of Formaldehyde-Scavenging Compounds to Reduce the Formaldehyde Emission of Wood Based Panel Products to Minimize the Indoor Air Pollutant

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Abstract

Wood composite materials are widely used in construction, decoration as building materials, in interior spaces and in furniture production in the world. Around the globe, people spend approximately 90% of their time indoors, thus making the indoor air quality have a significant impact on the modern life However, volatile organic contaminants like the formaldehyde emitted from a wide range of building materials and consumer products often pose a threat to the environment safety and human health Moreover, emissions from synthetic adhesives and chemicals used in the production of wood composites cause significant problems in terms of environmental and human health depending on the conditions of use. Wood composite products produced with formaldehyde-containing synthetic adhesives cause a variety of diseases, particularly with the release of formaldehyde from indoor use. The issue of formaldehyde emission from composite wood products has been a concern, since the gas was deemed carcinogenic as per IARC.

The main objective of the study was to use Caprolactam ,sodium metabisulphite and mix of both as an effective scavenger and its use to minimize the formaldehyde emission of wood based panel. In this study UF resin was prepared by using Caprolactum and sodium bisulphite and mix varying concentration from 0.5 -2.0% and formaldehyde content of the resin was evaluated .The result data was co related with blank Sodium metabisulfite, caprolactum and mixing of both were applied in different physical forms during the resin preparation at different concentration and the resulting physico-mechanical properties (internal bond strength, thickness swelling, density and moisture content) and formaldehyde emission levels were compared. Formaldehyde content was measured using the method EN-120 and formaldehyde emission was evaluated both by desiccator method (JIS 1460).

The test result shows that both sodium bisulphite and caprolactum mix and mix of both at 1% concentration proved to be an excellent scavenger for manufacturing of wood composites to minimize the formaldehyde emission level. It has minimized emission level up to 30- 40% when tested the plywood as per EN-120 without effecting the bonding and other mechanical properties of the plywood made by urea formaldehyde resin in addition with scavenger. This research preliminarily

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demonstrated the effectiveness of caprolactum and sodium metabisulphite mix as a formaldehyde-scavenging compounds to the existing Urea-Formaldehyde adhesive systems used for manufacturing of wood composite products , is an efficient way to decrease formaldehyde emission levels from the finished products.

Keywords
Formaldehyde-scavenging compounds, Caprolactam ,sodium metabisulphite, method EN-120, bonding and other mechanical properties

Biography
S. C. Sahoo, Scientist, Indian plywood Industries Research & Training Institute.(IPIRTI), India

Dissolution Kinetics of Low-Density Polyethylene in D-Limonene/Xylene Solutions for the Chemical Recycling of Waste Plastic Laminates

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Department of Chemical Engineering, University of the Philippines , Philippines
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Department of Chemical Engineering, University of the Philippines , Philippines
TUMOLVA Terence P
Department of Chemical Engineering, University of the Philippines , Philippines

Abstract

The dissolution-precipitation method has been identified as a potentially viable solution to plastic waste recycling in the Philippines. In this study, the effect of solvent temperature and composition on the dissolution kinetics of low-density polyethylene (LDPE) in D-limonene/xylene were determined. Dissolution temperature was varied within 100°-120°C with solvent composition of 0-100 wt% D-limonene for both 2-layer and 3-layer laminates of LDPE and polyethylene terephthalate (PET). The data were fitted to the Korsmeyer-Peppas model and the kinetic parameters were determined. Based on the experimental data, it was observed that there is no definitive relation between the dissolution rate and temperature for all solvent composition except at pure xylene, where the behavior at 110° and 120°C appeared to be identical. It was also observed that introducing even a small amount of D-limonene to the solvent solution significantly increases the rate of dissolution, with a 1:3 limonene-to-xylene ratio having a K value that is 0.075 higher than that of pure xylene. Dissolution in D-limonene was observed to best fit the Fickian model, while that in xylene generally followed the non-Fickian

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model. Lastly, the 2-layer laminates showed to follow anomalous transport, wherein solvent diffusion and disentanglement of chains have comparable rates.

Biography

Michael Sean Deang is an assistant head of the Green Materials Laboratory at the Department of Chemical Engineering of the University of the Philippines Diliman under the. He recently obtained his degree in Master of Science in Chemical Engineering last February 2021. His current research topics are waste plastic recycling, as well as novel applications of bio-based polymers.

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Silica Supported Copper Nano Particles Design from Metal Waste Apply Formation of Various Condensation Reaction


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Shree P.M.Patel Institute Of P.G.Studies & Research In Science, India

Abstract

Currently metal waste, plastic waste and e-waste is highest global environment issue ,House hold electronic gadgets PCB is made by copper wire, the gadgets are out of service its produced electronic waste, our team is collected this type house hold e-waste and design it's chemical process for formation of nano particles, it nano particles apply as a catalyst for formation of various known biologically active heterocyclic derivatives like benzimidazole, dihydropyrano [2,3-c] pyrazoles, spiro-pyrano [2,3-c] pyrazoles via solvent free or aqueous media condition . Checked efficiency and reusability of catalyst. the all derivatives are based on the heterocyclic chemistry and highly applicable as lead molecules of biological activities of benzimidazole like anti HBV (1) [5], antitubercular (2) [6], non-sedating antihistamine(3) [7], (GABAA agonists [8], anti-viral (3) [9], antiinflammatory and analgesic [10], The medicinal application of pyrazolone includes antipyretic activity (1,2,3,4) and analgesic activity (1,2,5,7,8,9),12,13,14,15 antibacterial ,16 anti-inflammatory activity antitumor activity (7,8,9),17,18neuroprotective and cardiovascular agent (6,7),19,20,21 antidepressant activity,22 phosphodiesterase inhibitors,23 p38 inhibitors24 , Besides these, pyrazolones are widely used as dyes for various applications in the food, textile ,photographic, and cosmetics industries.

Keywords

Waste management, Green chemistry, Biological active, Heterocyclic chemistry

Biography

Umesh R. Nitone was born in Akot, Maharashtra, India in 1981 and earned his M.Sc. in chemistry from Govt.V.I.S.H. Amravati University in 2005. He then enrolled PhD at APJ Abdul Kalam University Indore India. Umesh Nitone ignited his research carrier from NCL Pune and currently he accept a Research Scientist position at SUNVH Chem Pharma Tech Pvt. Ltd Pune India. His research interest in the development of new synthetic techniques in general chemistry.

Jayaveersingh Mahida was born in Kheda, Gujarat, India in 1992 and earned his Ph.D. in Applied chemistry from Shree P.M. Patel institute of P.G. Studies & Research in science in 2021. interest in the development of catalyst from waste metal and synthetic techniques in general chemistry

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Oxidized Charcoal: An Efficient Support for Nife Layered Double Hydroxide to Improve Electrochemical Oxygen Evolution

Anjana PM
Central University of Kerala, India

Abstract

The Sustainable Development Goals (SDGs), adopted by the United Nations General Assembly (UNGA) in 2015, provide a powerful framework for international cooperation to achieve a sustainable future for the planet. The 17 SDGs and their 169 targets, at the heart of "Agenda 2030", define a path to end extreme poverty, fight inequality and injustice, and protect the planets environment. Sustainable energy is central to the success of Agenda 2030. The global goal on energy - SDG 7 - encompasses three key targets: ensure affordable, reliable and universal access to modern energy services; increase substantially the share of renewable energy in the global energy mix; and double the global rate of improvement in energy efficiency. A shift from conventional energy sources to sustainable energy sources is the need of the hour. The interest in electrochemical water splitting to evolve oxygen and hydrogen is increasing in the pursuit of renewable energy production. The oxygen evolution reaction (OER) is in great demand as it is integrated with fuel cells, metal–air batteries or solar cells. Developing improved catalysts for the OER is the key to the advancement of a number of renewable energy technologies. OER is a crucial process in energy conversion and storage , especially in water electrolysis. The merit of such a process is largely compromised by the high overpotential (excess of potential over that theoretically estimated) which arises due to multiple proton-coupled electron transfer (PCET) and sluggish reaction kinetics in the OER. Design and synthesis of highly catalytically active, low cost, and stable electrocatalysts for the Oxygen Evolution Reaction is one of the greatest challenges in electrochemical water splitting. Recently NiFe layered double hydroxide (LDH) emerged as a contemporary catalyst for water splitting. It is easy to synthesise from highly earth abundant metal sources, and is structurally comprised of active Ni–O/Fe–O, which is helpful to formulate the oxygenated Ni–OOH/Fe–OOH intermediates required in the OER. Further, the layered structure ensures the easy accessibility of electrolytes. In contrast, these factors become useless when the layer structure collapses and have a detrimental impact on the catalyst's efficiency. The low conductivity of the metal oxides/hydroxides further impedes the electron transfer process across the electrode–electrolyte interfaces. We used oxidised charcoal (OC) to couple with NiFe layered double

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hydroxide (NiFeLDH) to use as a catalyst in OER. OC was obtained by chemical oxidation in acidic medium and thereafter it was employed in situ with NiFeLDH. OC was chosen due to (i) its high surface area that enhances adsorption of the metal ions from the solution and forms stable layered double hydroxides, (ii) oxygenated functional groups at the carbon surface which favor coordination with metal species, (iii) the electron rich environment of the carbon frameworks which improves the electrochemical kinetics. The ease of synthesis of OC using earth abundant carbon resources also demonstrates additional advantages. In this work, We report the facile synthesis of oxidised charcoal supported NiFeLDH at room temperature. It showed unprecedented activity in the oxygen evolution reaction with an overpotential of 240 mV at 10 mA cm—2, which is approximately 115 mV less than pure NiFeLDH. The electronic enrichment at the metal sites and enhanced surface area of NiFeLDH/OC are reasons for the improved activity.

Biography

Anjana PM belongs to the state Kerala in India and completed her Masters in Chemistry from Central University of Kerala, India in 2019. She also got an opportunity to work in Department of Science and Technology of India funded project " Development of Mn, Fe, Co and Ni ordered mesoporous metal phosphate materials and their application as catalysts in Electrochemical water oxidation" at Central University of Rajasthan under the guidance of Dr. Jony Saha Department of Chemistry, Central University of Rajasthan. She is also one of the authors of the paper "Oxidized charcoal: an efficient support for NiFe layered double hydroxide to improve electrochemical oxygen evolution" which is accepted for publication in Chemical communications, a reputed journal by the Royal Society of Chemistry. Generally, her research experience has been related to energy and environment applications specifically on Electrocatalysis, Electrochemical water splitting and Homogeneous and heterogeneous Photocatalysis and renwable energy applications. Apart from academics and research she have been involved in many extra-curricular activities that involve organizational skills and spontaneous decision making. She was elected as department representative of chemistry department and the Post Graduate student representative of Internal complaint committee (A body envisaged to redress complaints on Sexual harassment at workplace) during her post graduation .

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Sagay Marine Reserve (SMR) Coastal Resource Manegement Schemes

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Abstract

The study sought to determine Sagay Marine Reserve Coastal Resource Management Schemes, and the environmental, economic and social impact to the local fisherfolks of the coastal barangays of Sagay City. The descriptive method was employed and data were gathered through FGD. Quantitative data was taken from the demographic profile of the participants and descriptive statistics ware used to analyze the data. Qualitative data gathered were analyzed using Krueger's systematic analysis process. Results of the study revealed that coastal and marine reserve resources have been rehabilitated through the various management schemes employed by Sagay Marine Reserve namely: resource conservation, resource preservation, resource protection and resource utilization. There was high biodiversity of both flora and fauna present in the area. The coastal resource management schemes had affected the environmental, economic and social conditions of the coastal communities. The environmental impact was very evident. The economic impact however was found to be minimal because the economic conditions of most of the fisherfolks remain to be low. Socially, the coastal resource management schemes have improved the human relationships and human interactions. The role of education and information dissemination was identified as crucial in the success of the implementation and participation of stakeholders of the program. Overall, the coastal resource management schemes have positively improved the conditions of the coastal and marine ecosystems of the Sagay Marine Reserve.

Keywords

coastal resource management schemes, fisherfolks

Biography

Ephraim R. Estacion, Jr., PhD is the former Associate Dean of the Faculty of Graduate Studies and Teacher Education Research of Philippine Normal University Visayas, Cadiz City, Negros Occidental. He has been teaching Research and Statistics in both the graduate and undergraduate programs at the PNUV since 1995 and continues to be an adviser and panel member for thesis and dissertation oral defenses. He obtained his Doctor of Philosophy with specialization in educational management at the University of Negros Occidental – Recoletos, Bacolod City (1994), He earned his Master of Arts in Education (1988) and his Bachelor in Industrial Management Engineering (1987) at West Negros University, Bacolod City. He has been in the teaching profession for 28 years and has been doing research and community service as well.

He also presented his researches in international and national conventions and is a life member of various organizations such as the Philippine Statistical Association, Philippine Association for Extension Program Implementors, State Universities and Colleges Teacher Educators Association, and the Philippine Association for Graduate Education where he is currently serving as national Vice President for the Visayas.

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An Inventive Scheme Designed for the Synthesis of Some New Mixed Ligand Ni(II) Complexes Its Characterization and Antimicrobial investigation

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Sunil S. Patil
Department of Chemistry, Changu Kana Thakur Arts Commerce and Science College (Autonomous), India

Abstract

A series of new mixed ligand Ni(II) complexes of the type [Ni(P)(L).2H2O] have been synthesized by using 2-amino-6-methyl pyrimidine-4-ol (HP), a primary ligand and N- and O- donor amino acids (HL) secondary ligands. Synthesis of Ni(II) complexes has been carried out by thermal and microwave methods. Results show that complexes synthesized by the microwave method were more efficient than the thermal method. Preparation time in the microwave method was short (4-7 min.) as compared to the thermal method (45 min.). Moreover, the microwave technique gave a very high yield (90%) of the complexes. The prepared complexes were characterized by Gouy experiment, FTIR, elemental analysis, TGA, and DTA at room temperature. The complexes have shown significant antimicrobial activities such as antifungal and antibacterial activity.

Keywords

Ni(II) complexes, 2-amino-6-methyl pyridine-4-ol, amino acids, microwave, antimicrobial activity

Biography

Mr. Jitendra M. Pawara has completed B.Sc. in Chemistry (2013) from S.P.D.M. College Shirpur Dhule Maharashtra India. M.Sc. in Organic Chemistry (2015) from North Maharashtra University Jalgaon Maharashtra India. He has Qualified NET (CSIR and UGC-JRF) two times. He has published total 08 research paper in national and international journals (03 UGC listed, 03 peer reviewed, 02 non peer rewired journals). He has also authored book. He has also participated/presented paper and poster in national international conference, symposium. Currently he is working as Assistant Professor in the department of Chemistry Changu Kana Thakur Arts, Commerce and Science College (Autonomous) New Panvel Navi Mumbai, Affiliated to university of Mumbai. He also registered for Ph.D. in Chemistry 2017 University of Mumbai, under the guidance of Dr. Sunil S. Patil Director of Students Welfare University of Mumbai.

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Evaluation of Wadi Kalbu Area Chromite, Nizwa, Sultanate of Oman

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Abstract
Chromite is classified as an oxide mineral composed of iron, chromium and oxygen with the simplified formula FeCr2O4. It has lots of industrial applications which makes it of great industrial significance. The present study mainly focusses on evaluation of Wadi Kalbu area for Chromite in Nizwa, Sultanate of Oman .Majority of Chromite bodies in the Ophiolite are located below the petrographic Moho, within the transition zone of mixed Dunite and Harzburgite near the top of the Mantle sequence. The fieldwork was conducted to understand the geology of Wadi Kalbu area. During fieldwork number of Chromite bodies were identified and samples were collected from the ore bodies as well as host rock and samples were sent to labs for chemical analysis. The result of chemical analysis showing high content of chromite in parent rock of study area. From the field study and chemical analysis clearly indicates that Wadi Kalbu area has a good prospect for Chromite exploration and mining.

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Keywords
Chromite, Nizwa, Oman, Ophiolite, Mining.

Biography
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Comparative Assessment of Hexavalent Chromium Adsorption by Different Saw Dust in a Lab Scale Adsorption Column

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Abstract

Hexavalent Chromium is highly toxic and carcinogenic. It is extensively being used in electro-plating, textile and tannery industries. Present investigation was an attempt to find low cost hexavalent chromium adsorption using different saw dust in a lab-scale adsorption column. Results indicated 94.1%, 66.04%, 88.03% and 80.04% reduction of chromium concentration by Sakhu (Shorea robusta), Sheesham (Dalbergia sissoo), Eucalyptus (Eucalyptus globules) and Mango (Mangifera indica) saw dusts respectively; at 25 oC and retention time of 40 minutes with flow rate 0.1 mL/sec.

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Biography

The author of abstract was born on 8 July 1991 at gonda district uttar Pradesh India. He passed high school in 2006, intermediate in 2008, B.Sc. in 2011 and M.sc. in 2014.

In present, the author is pursuing Ph.D under the supervision of Prof. Siddhartha Shukla at Department of Environmental Science. Dr. Rammanohar Lohia Avadh University Ayodhya 224001. The title of Ph.D "Removal and recovery of hexavalent chromium from tannery effluent using saw dust as an adsorbent." the author have published more than 6 research papers

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Environmentally Sustainable Road Transport Network – A Case Study of Ahmadabad, India

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Abstract

With the rapid pace of urbanization coupled with living standards, the number of automobiles is increasing very fast on a time scale, resulting into huge number of vehicles plying on roads causing traffic congestion along with significant degree of air pollution. Such a scenario is being seen in most of the urban areas of the world. The main contributing factor of such a problem is inadequate carrying capacity of road network to accommodate increasing number of vehicles on a time scale. The authors of the present paper have taken up a case of Ahmadabad, Gujarat, state, India to identify the causes, lack of planning initiatives, vehicular growth projections up to the year 2051, the present carrying capacity of existing road network coupled with inadequacy and futuristic requirement to ensure free flow of traffic thereby avoiding traffic congestion and restricting air pollution to reasonable degree. An attempt has also been made to employ different compatible models to estimate the carrying capacity of road network and also to provide sustainable solutions to maintain and restore the wholesomeness of the quality of urban environment, particularly air pollution in general.

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Biography

Kalagi Shah did her Bachelor's of planning from Anant Institute of Planning aka Anant National University in the year 2018. She is planning to do her maser's abroad. She likes to dive deep to the bottom of the problem to come up with the solutions. She is research oriented with peculiar observation skills. She is a trained bharatnatyam dancer and loves to do bharatnatyam dance on hip hop songs.

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Risk Assessment of Oil and Gas Pipeline Failure with Integrating GIS.

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Abstract

Major accidents caused by pipelines such as explosions, its deterioration mainly will be impacting the environment and also can be harmful to the population's safety, public health. Therefore, a wide attention in preserving pipeline assets as well as the environment are needed in order to derive risk assessment of the pipelines from the accidents. However, over the years, less work was devoted to focusing on the environmental consequences of major pipeline accidents.

Nowadays, major advanced technologies such as Geospatial Information System (GIS) is used to develop quantitative assessment of the risk in a big scale visualisation. The objectives of this study are to identify the losses which focuses on environmental aspects due to pipeline damage, to calculate its losses in both physical and monetary terms and to validate the calculated losses and its risk indexes with previous work. The benefit of an annotative GIS-based approach is a useful solution to handle vast geospatial datasets and incorporates the regional risks of large scale areas. Seven (7) study areas which cover both rural and urban areas are taken place in three

(3) districts in three (3) different states in Malaysia, namely Segamat (Johor), Kuantan (Pahang) and Kemaman (Terengganu). This approach allows the calculation of overall risk indexes especially environmental consequences. As a result, the outcome of the study will be represented into risk map which is associated with both severity and vulnerability mapping. In conclusion, with the aid of GIS tools, it is very handy for pipelines' owners and operators as it acts as a decision support tool in guiding for an effective asset management and environmental planning. This study offers new insights on promoting future risk assessment of oil and gas pipelines by integrating GIS.

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Biography

Vanessa Seli earned BSc. in Geomatics Engineering in 2019 and she is currently undergoing MPhil. in Civil Engineering, School of Civil Engineering at Malaysian Technology University or also known as Universiti Teknologi Malaysia (UTM), supervised by Dr. Libriati Zardasti. Her current research focuses on risk mapping and development of spatial models for pre-monitoring assessment due to natural disasters or disturbances on building structures, environmental and human societies by utilizing remotely derived images.

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Environmental Impact Assessment of Qatar Industrial Area

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Abstract

Qatar has mainly 4 industrial areas; Old Industrial Area, New Industrial Area, RLIC and MIC covering many sq.kms where all diversified and big industries exist contributing to significant environmental pollution coupled with socio economic impacts. The area under reference is quite challenging in terms of adverse environmental impacts and complex health problems of great concern. It also poses serious concern on effective and integrated governance model in the absence of scientifically designed Environmental Impact Assessment associated with management plans. Under such an alarming eventuality, the authors of the present paper decided to take comprehensive research on Integrate Environmental Impact Assessment of Qatar Industrial Area to identify and quantify impacts along with mitigating tools to take care of negative impacts.

The authors have mapped the entire industrial area in which the location and type of industries have been indicated on the map. An inventory of such industries have been done on the basis of comprehensive checklist designed for this purpose in order to quantify and characterized the pollution load from each industry along with other indicators. The receptor environmental quality assessment have been carried out at different locations by monitoring ambient air quality, noise quality, ground water quality, meteorological parameters, ambient temperatures, and others. The quality analysis as referred to above have been mapped in terms of contours and others using Surfer 9 software and other software. The comprehensive environmental prediction models have been developed by the researchers in the form of air dispersion model, ground water models etc. Comprehensive Environmental Impact Assessment with management plan has been prepared along with Comprehensive governance model with scientific inputs

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Biography

I, Sabina Aysha, am qualified with Masters in Environmental Science and Management from India. I joined as Scientific Assistant in State Pollution Control Board (PCB), which act as a regulatory authority for Environmental protection under the government of Kerala, India. Now, working for Qatar Geotechnical and Environmental Company as Environmental Specialist for past six years. I studied several aspects/ impacts and conducted Environmental monitoring and EIA at several parts of Qatar as a part of my work for various projects. Now, I intend to carry out a research to study effects of Environment pollution in the Industrial areas in Qatar. I am excited and thankful to get an opportunity to present my work in this prestigious platform.

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Urban Natural Air Ventilation – Emerging Need of Urban Planning and Development

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Dr Akshey Bhargava
Member Secretary, Rajasthan Pollution Control Board, Jaipur, Professor and industrial adviser, CEPT University, India

Abstract

Growing urbanization coupled with rapid development to support infrastructure in order to meet the demand of urban population have resulted in multidimensional urban and other related environmental problems. Such an emerging scenario is seen not only in India but also globally- partly because of unplanned development and partly due to ignorance of environmental policy parameters in urban planning and development. One such missing policy parameters of utmost importance is Urban Natural Air Ventilation system. Natural air ventilation in urban areas is reducing significantly on a time scale due to non-optimized vertical to horizontal and concreting to non-concreting areas, restricting air ventilated corridors by structures, wrong layout of urban land uses, and so on so forth. The authors of the present paper have described the reasons of reducing urban air ventilation, its overall impacts on increased urban energy and water consumption paired with health of urban population. Authors have also elaborated the importance of natural urban ventilation within the overall integrated urban planning and related development. An attempt has also been done by the authors to incorporate a case study of Jaipur which is known to be the pink city of India and once was

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one of the highest naturally air ventilated city of the world and is now recorded with significantly reduced air ventilation for the reasons reflected in present paper.

Biography

Prachi Golhar holds double Masters in Environment Science from Brunel University, UK & Bharati University, Pune, India. She has experience in research activities and consulting. She has published various articles related to different areas of Environment Science and has immense interest in the domain of Solid waste management, Urban Planning, Sustainable Development, Climate change etc. to name a few. She has worked in consultancy, waste to energy plant & also as an Environment Science teacher

Her long term goal is to engage more in environment related activities and utilize her untiring commitment and interest in researching and entrepreneurship. She also interests herself in reading, travelling and getting updated on various environmental concerns and their probable solutions.

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Conservation of Heritage Buildings- An Emerging Perspective towards Sustainability

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Abstract

Change is inevitable and with everyday deterioration of the heritage building, it force us to think that there is a strong need of intervention, evolving and taking corrective measures, and enactment of adequate laws to ensure sustainability of heritage buildings . The problem under reference is quite comprehensive and multi dimensional which need to be addressed on an integrated scale. As quoted by Rem Koolhaas, “preservation cycle is kaleidoscopic array of opportunities and responsibilities" (Koolhaas, 2016). As conservation architects, it is our responsibility to understand the cause degradation of the building and mitigate the issues and propose frameworks and governmental recommendations for the heritage structures. The authors of the present paper have tried to visualize and identified the direct or indirect causes of such deterioration coupled with importance of preservation of such heritage buildings and the possible corrective measures to preserve them along with long term sustainable solutions. The authors have also infused the concept of prevention more significantly as compare to control or preservation strategies through regulating the quality of environment in terms of air pollution and other related parameters. An attempt has also been done take a case study of Old stock exchange Ahmadabad, Gujarat state, India wherein different aspects like its historical importance, culture, history, present status of deterioration, its causes, mitigating measures, governance model and so on so forth were studied having regard to international conservation charters and values.

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Biography

I, Shreya Jain, completed my masters in Conservation and Regeneration in the year 2020 from CEPT University. Research and study, Documentation, report writing and Analytical skills developed over the years which motivates me to pursue different challenges and spread awareness about the learning that can change mindsets of the people.

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Urban heat island effect: A case study of Jaipur, India

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Dr. Akshey Bhargava
Ex. Rajasthan Pollution Control Board, Jaipur, CEPT University, India.

Abstract

Rapid growth of population and resulting urbanization is gaining momentum where urban areas are developed in significant proportion in India leading to changes in existing landscape, buildings, roads, and other supporting infrastructure. Such a change replaces open land and vegetation in the form of permeable surfaces with concrete surfaces which are impermeable and dry in nature which leads to the formation of urban heat islands whereby urban regions experience warmer temperatures than their adjacent rural surroundings. Such heat island effect increases energy consumption in urban areas along with other negative impacts. The authors of the present paper focus on reduction of heat island effect in urban areas along with compatible strategies in Indian conditions partly to address higher energy consumptions and partly to reduce other negative impacts being caused on account of such heat island effects. The authors have carried out a case study of Jaipur a pink city of India.

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Keywords
Heat Island, its effects, reduction strategies, energy savings, estimation of urban heat island, case study of Jaipur, Indian conditions

Biography
I am Anindita Bhattacharjee, have done my Masters in Urban Planning from BIT Mesra, Ranchi in the year 2020. I have put 3 years of professional experience in different organization to deal with various field of Urban Planning. I have a great passion in the field of academics and have written and published three papers as a part of the journey in academics

Urban Development and Climate Change

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Abstract

With the rapid migration of people towards urban areas in search of work or jobs, there has been a significant growth of urbanization at a global scale resulting into extensive release of carbon dioxide and greenhouse gases (GHGs) into environment. Accordingly, cities have acquired a unique position when it comes to climate change. Among the largest sources of greenhouse emissions globally, they are also highly vulnerable to its consequences. It has been reported that 70 percent cities worldwide are already dealing with the effects of climate change, and nearly all cities face some kind of risk. The authors of the present paper have observed that policy at the national level has moved painfully slow in most countries, but urban areas have the authority to make useful changes in land use and zoning, transportation, green space, and energy policy to address the problem to a great extent. The authors have presented the importance of environmental master plans in all cities coupled with integrated urban plans in order to achieve ambitious carbon neutral cities everywhere by infusing innovative environmental policy parameters in the process of making environmental master plans.

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Biography

Mansangeet Patrai is working as Research Associate at International Institute for Energy Conservation (IIEC). She is a clean energy, climate change and natural resources management expert. She is working on key national and international programs like increased integration of renewable energy in buildings, revision of state climate change action plans, GHG accounting of various cities, implementation of clean energy access program and building the capacity of Farmer Producer Companies (FPCs) for better management of business and finances. She leads IIECs flagship program on Clean Energy Access

Dr Akshey Bhargava is BTech, Mtech and Phd in Environmental Engineering from IIT Delhi. He is Ex member secretary at Rajasthan Pollution Control Board (RPCB). Dr Bahrgava has been Professor and industrial adviser at CEPT University, Ahmadabad, India. During his professional life he was actively involved in environmental planning, management, enforcement of laws and project preparations.

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Bioremediation of Heavy Metal Toxicity by Tiny Living Creatures Called Bacteria

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Rajat Pal
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Abstract

Heavy metals are the natural components of the Earth's crust and they cannot be destroyed. These metals can enter our body in a very small extent majorly via drinking water and food. Air may also sometime contain heavy metals which may contaminate our body. The toxic effects of these metals on human individuals depend on several factors including chemical species, doses, rout of entry as well as genetics, age and gender of the individual. The accumulation of these metals at a high concentration can lead to poisoning. Their bioavailability is influenced by many physical factors like temperature, sequestering, phase association and adsorption and they are also affected by chemical factors that influence speciation at thermodynamic equilibrium, complexation kinetics and lipid solubility. Bioaccumulation, which means an increase in concentration in a biological organism over time, may play an important role on biological factors such as species characteristics, Biochemical/ physiological adaptation and trophic interactions. Heavy metals like arsenic, cadmium, lead, antimony, vanadium, zinc, platinum, cobalt, nickel, palladium and rhodium are main threat to our present environment and human society. The metabolism of these metals by plant, animal and human body is very difficult and they cause savior harm to their body suppressing many physiological and biochemical pathways. Heavy metals can bind to vital cellular components, such as enzymes, nucleic acids and structural proteins, and interfere with their functioning. Biological elements like bacterial species play an important role to bioremediate these metals where they can be degraded or converted under controlled condition to an innocuous state or to levels below respective concentration limit. Several metabolic and signaling pathways transform these metals to a nontoxic form from a toxic one. Micrococcus, Bacillus, Pseudomonas, Staphylococcus, Enterobacter are few examples of bacterial species which can

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bioremediated toxic heavy metals from our environment and as they are themselves a biological substance, their harm to ecosystem is negligible. Several metabolic and molecular mechanisms have already been established for this, among them some are chromosome mediated and some are controlled by plasmid. In our present review, we are emphasizing on the bacteria and their mechanism of bioremediation of heavy metal toxicity which will help to make our planet green free of chemical and hazardous remediation agents.

Keywords
Heavy Metal Toxicity, Bioremediation, Bacteria.

Biography
Dr. Rajat Pal has done his graduation in Microbiology from University of Calcutta. He has completed his M.Sc. in Microbiology from the same University and M.Sc. in Bioinformatics from Sikkim Manipal University. He has also done Post Graduate Diploma in Bioinformatics from DOEACC, Govt. of India, Jadavpur University Campus. He has earned his Ph.D. degree in Biophysics, Molecular Biology and Bioinformatics from University of Calcutta. He is associated with teaching for last 16 years at undergraduate and postgraduate level. He is author of many research articles, review articles and book chapters published in National and International Journals and Books. His two Ph.D. Scholars and many Project fellows and trainees are engaged in research on the area of molecular biology, nanobiotechnology and microbiology. He has in his laboratory.

An Analysis of Plant Diversity of East Singhbhum District of Jharkhand and Their Conservation for Sustainable Future

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Abstract

Biodiversity is essential in supporting human life and society. It also provides sustainable survival status to different taxa and helps to develop strategies for conservation.

The present paper reveals the plant diversity specially trees of East Singhbhum district of Jharkhand and their Conservation. The total geographical area of district is about 3533 sq kms, which is about 2.03% of the whole state. The Dalma range extends from west to east covered by dense forest on the northern side. This region mostly covers tropical moist deciduous and tropical dry deciduous forests. Vegetational survey conducted during 2014 to 2016. We inventoried a total of 68 species of tree within a sampled area. The study shows that Shorea robusta Gaertn, Peltophorum pterocarpum (DC.), Terminalia arjuna (Roxb.ex DC.) Weight and Arn , Lagestroemia speciosa (L.) Pers etc are much larger species having 100% frequency .It is found that Shorea robusta gaertn and Terminalia arjuna (Roxb.ex DC.) Weight and Arn are dominant species having IVI value of 42.52 and 26.18. It was followed by another most dominant species peltophorum pterocarpum (DC.) having IVI is 23.36 .

The minimum IVI found in Jacaranda mimosifolia D.Don is 2.51 , Anthocephalus Cadamba (Roxb) is 2.59 followed by Terminalia catappa L. having IVI is 2.48 .Due to over exploitation through human activity some plants species comes near to extinct and many of these plants are becoming endangered. So, these spices deserve more attention for conversation. Scientific studies should be conducted on these plants. many species may ultimately disappear from their natural habitats, especially timber plants. It is essential for the proper documentations, conversation plans & sustainable utilization of plant resources.

Key words

Biodiversity, Conservation, Dominant, IVI, Endangered.

Biography

This is Anita Kumari. I have done my Ph.D. from Ranchi University, Ranchi. Now I am presently working as a faculty in department of Botany in Jamshedpur Cooperative college, Kolhan University, Jharkhand. I have published more than 15 research paper in National and International Journal based on Ecology, environment Biodiversity and also authored a book and published in 2019. I am also appointed as editorial board member of "International Journal of Ecology and Environmental Sciences". ISSN: 2664-7125. I am life member of Indian Botanical Society and also "Biospectra" (An International Journal of Life Sciences). I was selected in JRF test organized by BRNS project in 2006.

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Green Skill: A Study on the Traditional Conservation Practices among the Tribal Communities of Koraput District, Odisha (India)

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Department of Botany, Regional Institute of Education (NCERT), India

Abstract

Green plants, soil and water are the basic natural resources that support life system of all forms. However, with increasing human population, modernization, use of technologies and changing life style has invited many problems with respect to these natural resources. Conservation of these resources not only reduces land degradation but also leads to conservation of biological diversity and sustainable agricultural productivity. Before looking for improvement in conservation practices, there is an urgent the need to study and document indigenous skills and conservation practices.

Considering the above facts, this study was under taken to identify and document the indigenous/ traditional practices for conservation of natural resources like plants, soil and water in tribal dominated Koraput district of Odisha. Study from different tribal villages of Koraput revealed that based on traditions and experiences and historical knowledge, tribal communities have developed their own practices for plant, soil and water conservation. The various traditional practices followed by tribal farmers could be categorized as mixed cropping, terrace farming, integration of agriculture with horticultural systems, use of bio-compost, reuse of water, stone bonding, vegetation bonding and rain water harvesting through Jhola kundi. The most common practices followed by tribal communities are conservation through ethno-medicinal practices, wild food resources, conservation through sacred groves etc. The plants associated with socio-cultural life of tribal people in terms of their Deity (god), preparation of drinks, prediction of rainfall, funeral purpose, different cultural functions etc. were also studied. Besides these the present study also documented six sacred groves of Koraput district and revealed that 138 plant species has been conserved which are distributed in 108 genera belonging to 83 different families. The tribal community along with their rituals and culture associated with these traditional conservation practices were also recorded. Major tribal groups concerned with these

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practices include Paraja, Gadaba, Dombo, Bhumia, Mali, Kandha etc. The study indicated that the tribal communities have wisdom and high social values towards the natural resources particularly soil, water and vegetation, and continue to conserve these resources through cost effective traditional skills for livelihood security. By using their green skills, they prepare deities from clay, plates from leaves, draw pictures on their walls, toys and dolls from wood etc. Further, this study in the long run would likely to be useful for conservation of biodiversity besides restoring traditional knowledge and skills that are getting eroded over time. Interestingly this traditional knowledge and skills may complement/supplement the scientific basis of conservation in coming future.

Keywords
Traditional Knowledge, Skill, Tribal community, Natural resources, Plant diversity, Conservation

Biography
Sidhanta Sekhar Bisoi is presently continuing PhD in Botany at Regional Institute of Education (NCERT), Odisha under Utkal University, having completed his M.Sc. in Botany from Berhampur University, Odisha, M.Sc. and M.Phil. in Biodiversity and Conservation of Natural Resources from Central University of Orissa,. During his study, he has worked on conservation of sacred groves, phytoremediation potential of Wild rice, Exploration of plant biodiversity, Ethno- botanical studies on conservation of Indigenous knowledge and medicinal plants by tribal communities of Odisha etc. He has added 2 new plant species to the Flora of Odisha and authored 2 books on Green Education and Wild Edible Food Plants. He has published a series of research papers and popular science articles in International/national journals of repute, besides being honoured as a recognized reviewer/board member of various reputed national/international journals. He has participated/presented his research work(s) in more than 50 national and international conferences/seminars. Mr. Bisoi is an active member of Orissa Environmental Society, International Society of Environmental Relationship and Sustainability (ISERS), Orissa Botanical Society, Prerana and several other organizations working towards environmental protection and conservation. He has successfully worked in a number of research projects on Biodiversity Conservation and Environmental Sustainability, as a Junior Research Fellow at Regional Institute of Education, Bhubaneswar (India), funded by NCERT/MHRD, New Delhi. He has got 'Green Warrior Award' at International Youth Convention for Green Earth (2016), held at Bhubaneswar (India),for his work on Environment and forest protection and conservation of plant biodiversity. Currently, Mr. Bisoi is working in the area of Ethno botany with reference to Green Skills, Indigenous Knowledge and Natural Resources Conservation

Study of Fatty Acids Composition of Pinus Palustris and Its Potential for Biodiesel Production

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Abstract

Oils generated from plant seeds mainly containing triacylglycerols, making them a suitable source for biodiesel production. Today around 86% of the world energy consumption and almost 100% of the energy needed in transportation sector is met by fossil fuels. [1] In addition, the production and consumption of fossil fuels have caused the environmental damage by increasing the CO2 concentration in atmosphere [2]. In the current era, there is an increasing demand for sustainable transportation energy sources because they do not contribute to global carbon dioxide emissions. The Biodiesel from plant seed oil is an alternative fuel that may be blended up to 20% with diesel without having additional diesel engine modifications. The non-edible vegetable oils such as Madhuca indica, Jatropha curcas and Pongamia pinnata are found to be suitable for biodiesel production under the experimental conditions [3,4] In the present investigation, biodiesel was produced from Pinus palustris seed oil for biodiesel production by transesterification process shown in Fig-1. To find out the Biodiesel potential of Pinus palustris seed oil, its fatty acids composition and fuel properties were analyzed. The seed oil contained 2.5% palmitic acid, 24.1% stearic acid, 20.2% oleic acid, 45.2% linoleic acid, and 8.6% linolenic acid. The fuel properties of seed oil are as follows Density (0.85), Flash point (92), sulphur (% wt- 0.007), cloud- point (70C), pour point (40C). The production of biodiesel from this species is viable, cost-effective, and environmentally beneficial.

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Keywords
Pinus palustris, fatty acids compositions and fuel properties

Biography
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PLA Reinforced With Natural Fiber: Opportunities and Challenges in Green Composites

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Vinod B. Suryawanshi
Department of Mechanical Engineering, Veermata Jijabai Technological Institute (VJTI), India

Abstract

The state of the environment, growing fuel prices, the depletion of fossil fuels, and global warming are some of the major issues that motivate researchers to work on biodegradable green composites. Bio-composites integrating natural fibers and biopolymers would be a great alternative for the manufacture of biodegradable materials for diverse purposes. To replace oil-based traditional plastics, more effort has been put into producing degradable biological materials that do not pollute the environment. Natural fibers such as Jute, kenaf, hemp, flax, elephant grass, and sisal can be reinforced with biopolymers to get green composites. The future of biodegradable composite is reinforced biopolymer with natural fibers, which addresses numerous sustainability challenges. Polylactic acid (PLA) is the only natural resource polymer produced at a significant scale and also has special properties such as good transparency, processability, reusability and high stiffness. Till date rigorous research has been carried out by many researchers on natural fiber reinforced PLA based bio composites as a way to compete with non-renewable petroleum-based products. The purpose of this review article is to study the mechanical performance of bio composites which mainly depends upon the type of fiber used, fiber-volume fraction, fiber orientation and its impact on fiber-matrix adhesion.

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Biography:

Sachin Kamble, PhD Scholar (VJTI), M.Tech ,BE (Mechanical Engineering)
The Author has Qualified GATE 2011, 2012 and 2015, Undergone through "Infosys Campus Connect Training", Undergone through in plant training at "INDO GERMAN TOOL ROOM" Aurangabad. Attended 5 days' workshop on "Rapid Product Development and Manufacturing" by Dr. Karunakaram, IIT Bombay. Delivered guest lectures for Engineering students on Environment Management.

Dr. Vinod Suryawanshi, Professor-Department of Mechanical Engineering, VJTI.

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Highly efficient, Improved Tour's method for Graphene oxide Synthesis & Characterization

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Yajvinder Saharan
Department of Chemistry, Maharishi Markandeshwar (Deemed to be University), India

Abstract

In the present research article, graphene oxide was synthesized from graphite powder using improved Tour's method. The effects of various reaction parameters viz.; reaction time, reaction temperature, amount of cleaving agents (H_2SO_4/H_3PO_4) and amount of oxidant ($KMnO_4$) were studied. The best results were obtained by treating graphite powder (0.6 g) with 8:2 mixture of conc. H_2SO_4 and conc. H_3PO_4 and 4.8 g of $KMnO_4$ (1:8) for 10 h at 35°C reaction temperature. The synthesized graphene oxide was characterized using UV–Visible, FT-IR spectroscopy, SEM and XRD techniques. It was observed that absorption peak at 258 nm confirmed the π→π* transition for the C=C bonding in GO. The bands around 3344, 2920, 1710 cm^{-1} in the FTIR spectra confirmed the GO formation. The SEM images obtained showed a flower petal like structures with wrinkled morphology. The reflection peak appeared around 43° in the XRD pattern of GO, indicated that GO exhibits turbostatic disorders.

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Biography

Myself, Dr Joginder Singh. I am working as Associate Professor in Department of Chemistry, M.M.E.C, Maharishi Markandeshwar Deemed to be University, Mullana, Ambala, Haryana, India. My research thrust area is synthesis and characterization of low cost adsorbents for the removal of heavy metal ions from different types of industrial waste waters. Synthesis, characterization and applications of some noval pyrazole and thiazole derivatives. Fabrication and development of nanostructure graphene oxide-metal-oxide membranes, characterization and applications. Design and development of different Physiochemical technologies for oil trapping from oil contaminated soils. Design and development of different technologies for water activation and its applications. I have guided 25 M. Sc students for their research projects and five students in PhD program.

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Potential for Reduction of Carbon Dioxide Gas Emissions in the Thar Desert by Leptadenia Pyrotechnia Conservation Based Carbon Farming.

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Abstract

Due to the climate change happening on the earth, the immunity of both humans and animals is decreasing along with this the plants are also getting affected. The main reason for which is the continuous increase in the temperature of the earth. The main reason for the increase in temperature is anthropogenic action, due to which carbon dioxide is emitted in high quantity in the atmosphere and this generates greenhouse effect. Due to the excessive emission of carbon dioxide, frequent changes in the climate are happening very fast and their ill effects are clearly visible. Due to this, the frequency of natural disasters is also increasing and their area is also increasing, due to which the biodiversity is also being lost. Because only natural plants have the amazing ability to prevent negative changes in the climate and adjust by absorbing carbon dioxide emitted in large quantities. In this sequence, there is an urgent need to implement the possibilities of reducing carbon dioxide emissions by cultivating carbon farming from the dry shrub Kheemp (Lepatadenia pyrotechnica), which is found abundantly in the Thar Desert

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Biography

Dr Amit Kumar Vyas has completed his B.H.M.S. degree from Dr. M.P.K. Homoeopathic Medical College & Research Centre; Jaipur, Rajasthan in the year 2008. Presently, along with homeopathic practice, according to homeopathic pharmacopoeia, doing independent research work on Thar Desert Plants. He is doing this research work under the guidance of his father.

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Environment Protection and the Constitutional Framework of India


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Abstract

Indian constitution is a complete document to maintain its wholesomeness and living nature which evolve and grows with time. The specific articles on environment protection in the Indian Constitution are also the result of this living nature and growth potential of the supreme law of the land. Initially when Indian constitution was drafted it did not contain any specific provisions on environment and even the world environment did not find a place in the constitution, there were certain provisions which to a great extend had direct bearing on the environment such as improvement of public health, organization of agricultural and animal husbandry on modern and scientific lines and protection of natural monuments from spoliation, disfigurement etc. The provision contained in Article 47 is more important as it provides that the state shall regard the raising of the level of nutrition and the standard of living of its people and improvement of public health as among its primary duties. Protection and improvement of environment is inherently included in the improvement of public health because without it public health cannot be assured. This clearly reflects that the framers of Indian constitution were very much conscious about the environmental concern because environment protection is part of our custom, culture and tradition. In Atharvaveda, it has been said that that "Man's paradise is on earth; this living world is the beloved place of all; it has the blessings of nature's bounties; live in a lovely spirit". Earth is our paradise and being a good human, it is our duty to protect this paradise. The Indian constitution is the first constitution in the world which contains specific provisions for the protection and improvement of the environment. This paper elaborates the various constitutional provisions relating to environment protection and at the end of paper suggests some valuable suggestions for environment protection.

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Key words
Pollution, Environment, Nutrition, Health, Earth

Biography
Dr. Pratima Devi Ranga is working as Senior Assistant Professor in Department of Law, Maharshi Dayanand University, Rohtak. She has acted as the Director, Legal Aid Clinic, Department of Law, M. D. University, Rohtak. Being Director, she has organised various workshops, seminars in collaboration with National Commission for Women, New Delhi and other funding agencies. She has more than fifty research papers published in national, international and Scopus journals and participated with paper presentation in more than sixty International, National Conferences, seminars and workshops. At present, she is Deputy Chief Warden Girls and member of Editorial board of various Journal of Law. One book on Right to Information Act Emerging Trends in her credits. She has acted as chairperson in department of law BPSMV Khanpur kalan Sonipat and Indira Gandhi Meerpur University. Rewari Haryana. Her areas of interest include Criminal law, Family law, law of Contract etc

Dr. Yogender Singh is working as Associate Professor in Department of Law, M. D. University, Rohtak. He has more than thirty research papers published in national and international journals and participated in more than sixty International, National Conferences, seminars and workshops. At present, he is member of Editorial board of various Journal of Law. His areas of interest include Criminal Law, Constitutional Law etc

Kinetic & Mechanistic Studies of Gas Phase Reactions of OH radical with VOCs Under Atmospheric Conditions

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Abstract

Volatile organic compounds (VOCs) constitute a major gas pollutants emitted from both human and biogenic activities. Anthropogenic sources include the evaporation of solvents & fuels in industrial processes, commercial operations or consumer products. They have major influence on the chemistry of troposphere impacting human health, air quality and global climate change. The atmospheric oxidation processes of VOCs that occur within troposphere do so by action of sunlight, by reactions with O3 and Cl atoms. For a wide range of VOCs, reaction with OH radical represents an important removal process from atmosphere & is also a potential pathway for their transformation into more toxic compounds. The nitrate radical is a nighttime tropospheric oxidant & key contributor to oxidizing capacity in lower atmosphere. This can be studied both kinetically and mechanistically under predetermined and controlled conditions in atmospheric simulation chambers that enable deep understanding and evaluation of key issues surrounding the atmospheric behaviors and bridge gap between field measurements and models. The kinetics and products of reaction of OH radical with VOCs widely used in industries can be investigated using various techniques for instance: Pulsed laser photolysis-Laser induced fluorescence and simulation chambers. Kinetic studies can be investigated using Absolute and Relative rate method.

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Biography

Dr. Neha Kundu has completed her Doctorate in chemistry and worked on Reaction kinetics of absorption of NOx using various oxidative absorbents. She is presently working as Assistant Professor in Department of Chemistry, A. I. J. H. M. College, Rohtak. She has been awarded as Post- Doctoral fellowship by ICARE-CNRS, Orleans, France. Her work comprises of effective reduction of NOx emissions from both stationary and mobile sources and study the effect of various operation variables.

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Sustainability and Gender in the Household: Practices, Roles, and Challenges

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Abstract

Cognizant to sustainable development are practices at home. As a fundamental unit of society, it can transfer culture among its members. Therefore, the current research investigates how household practices in the country promote sustainability at home. Moreover, the present study seeks to find if gender affects the roles of family members in the conduct of sustainable practices at home. The data gathered for the different research procedures describe that households from the research locales have efforts to observe sustainable practices in managing their homes. However, the data also showed that certain unsustainable practices still exist like in solid waste management. Notably, the results of the focused group discussions revealed that the motivation of the respondents to observe sustainable measures is not directly related to their concern for the environment but to conserve financial resources. Moreover, results show that women, specifically mothers, lead the promotion and practice of sustainable development at home.

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Biography

Darryl Roy T. Montebon is the current Director of PNU's Institute of Teaching and Learning. He is an Assistant Professor of Science Education and is a university supervisor of practice teachers. His research interests are in science education, pre-service teacher preparation, sustainable development, and disaster risk reduction and management.

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Healthcare Waste Management in India: Issues and Challenges

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Abstract

Human beings share their ecological context with animals and environment. Human interventions viz. industrialization, agriculture, deforestation, urbanization and globalization have led to a lot of problems arising at human-animal-environment interface. Healthcare waste mismanagement may lead to complex issues like antimicrobial resistance, "pathogen spillover" and other environmental issues deteriorating health of individuals & communities. Variety of host range and pathogen emergence depend upon social and environmental drivers (Rosenthal et al, 2015). Inadequate waste management practices and biomedical waste management practices also contribute to environmental contamination leading to antibiotic resistance and many direct impacts of health of organisms (Rousham et al, 2015). Environmental factors such as exposure to contaminated water may influence the inter-species transmission of microorganisms (Short et al, 2015).

Aim: Present study aims to study the issues of healthcare waste mismanagement and potential challenges using systems approach in contrast to looking at the problem in silos or through reductionist approach.

Research method: Using qualitative research methods, present study implied case study method where healthcare waste generation and management in whole of district Hisar in Haryana is taken as a case. Data from both primary and secondary sources was collected to achieve the objectives of the study. Thematic analysis of data (observation/in depth interview) was done along with secondary data.

Result: healthcare/biomedical waste is generated not just through healthcare activities carried out at health institutions. Waste having characteristics of biomedical waste is generated at household level and in other sectors (anatomical waste from poultry & slaughter houses etc.) but it is not considered and treated as biomedical waste. Moreover, health service provisioning is highly fragmented in our country where a variety of providers provide services. Informal health workers also generate huge amount of biomedical waste which is usually get mixed with municipal waste. Data from rural areas reveal that requisite infrastructure for biomedical waste management is highly inadequate. Implementation of legislation (Biomedical waste management & handling rules) also found to be inadequate with very little environmental monitoring. Therefore, such waste may pose serious environmental challenges and could be a threat to human health and health of other organisms in

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environment. Antimicrobial resistance is classical example having origin in such processes. Collaborative efforts from experts of different fields with a transdisciplinary approach could be the key to find sustainable solutions to such environmental issues. Therefore, if these problems are approached from Veterinary, Medical and Ecological perspective alone, a sustainable solution is very unlikely to be framed (Mackenzie & Jeggo 2019).

Conclusion: Healthcare waste mismanagement is a systemic issue involving multiple sectors like health delivery system, veterinary, meat industry & poultry etc catalyzed by inadequate implementation of legislation. Environmental issues arising at human-animal-environment interface can not be dealt through reductionist approaches hence require multidisciplinary conceptualization of such issues through systems thinking. Healthcare waste generation & mismanagement also is a similar problem which requires collaborative efforts from different disciplines to devise sustainable solutions.

Biography

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Optimization of the Hydraulic Model of a pipe network

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Abstract

The urban water supply network is a large-scale network system to adapt to the accelerated development of urbanization. The hydraulic calculation is the core work of water supply network design in new urban water supply projects and reconstruction projects. It is directly related to the operation stability and economy of the water supply network. However, the traditional hydraulic calculation is too cumbersome and is only established for the flow state at specific points. If the flow value of any node changes, the whole hydraulic model must be recalculated to obtain the value of node pressure, pipe section flow, and other working conditions. Moreover, the pipe network system built in different years has different pipe materials and different service life, resulting in different roughness of the inner wall of the pipe. The purpose of this study is to establish an optimization model to describe and simulate the flow mode of problematic nodes in the pipeline section and the changes of flow (q), pressure (P), and other parameters according to the continuity law and relevant known and predictable parameters. The optimization model will simplify the workload of hydraulic calculation and feedback the parameters involved in the design more quickly.

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Biography

Fengyang is a postgraduate student of Civil Engineering under the Faculty of Engineering, Technology and Built Environment of UCIS University Kuala Lumpur, Malaysia. Currently, he is running his own company as a Specialist in Pipe construction and Maintenance. His current project is on the refurbishment of the Hong Kong water supply system. He has completed his Undergraduate degree in Water supply engineering in China.

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Self-Healing Living Concrete for Eco-Friendly Environment

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Abstract

Concrete is one of the most widely used construction materials and has a high tendency to form cracks. Concrete can withstand compressive forces very well but not tensile forces. Although it is not possible to prevent crack formation, various types of techniques are in place to heal the cracks. It has been shown that some of the current concrete treatment methods such as the application of chemicals and polymers are a source of health and environmental risks, and more importantly, they are effective only in the short term. Thus, treatment methods that are environmentally friendly and long-lasting are in high demand. A microbial self-healing approach is distinguished by its potential for long-lasting, rapid and active crack repair, while also being environmentally friendly. Furthermore, the microbial self-healing approach prevails the other treatment techniques due to the efficient bonding capacity and compatibility with concrete compositions. Self-healing living concrete is a product that will biologically produce limestone to heal cracks that appear on the surface of concrete structures. Cyanobacteria-green microbes that live in the water and produce their own food, these bacteria are quite small & usually unicellular are mixed with hydrogel which gives nutrient & moisture that allow the bacteria to reproduce and mineralize and sand are mixed together. These microbes absorb carbon dioxide from the air and make calcium carbonate, the main ingredient in cement. These hydrogen - sand brick is also capable of reproducing, demonstrating self-healing capabilities and it is helpful for filling the cracks specially in places like underground basements and marine structure and other building cracks as well. As self-healing living concrete will be a basic future need for construction in every field as it can self-heal a crack in the structure.

Keywords

Concrete, Environment, Self-Healing, Development, Cyanobacteria, Construction.

Biography

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Comparative Investigation of Microbial Degradation Behavior of Bio- Based and Biodegradable Plastics in Natural Environment

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Roohi
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Abstract

Background: Bioplastics were produced in response to the problems associated with plastic waste. Microorganisms from natural sources have a great potential to mineralized natural biodegradable plastics into carbon dioxide, methane, water, inorganic compounds, or biomass through enzymatic action. Extracellular enzymes from such microorganisms functionally break organic material into short-chain molecules. The morphological changes with extracellular PHB depolymerase on polymer surface can be evaluated in almost all aspects like soil burial, liquid, and enzyme assay. The appearance of holes, cracks, cavities, and surface roughening on biodegraded film is clear evidence of degradation by the microbial attack due to a microbial consortium formed on polymer surface in presence or absence of oxygen that is either anaerobic or aerobic pathway is followed.

Methods: The microbial degradation study of different bio-based polymer films viz commercial oxo-biodegradable (Addi-Flex®), Eco-biodegradable, agriculture mulch, and PHB, was carried out with the

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novel biodegradable plastic degrading bacteria i.e., Pseudomonas aeruginosa PHB2 and Paenibacillus alvei PHB28 (a) In soil with pure culture (b) In a liquid medium with pure culture (c) In a liquid medium with partially purified PHB depolymerase enzyme for 7, 14, 28, and 49 days.

Results: The biodegradation was followed by evaluating weight loss after each treatment. Predictably, the bio-based polymer films were found to be less susceptible to degradation than the biodegradable ones. Maximum weight loss (90% and 70%) was observed with pure culture in soil burial treatment followed by 60% and 40% in MSM medium along with P. alvei PHB28 and P. aeruginosa PHB2, respectively, however, no change in weight was found with sole PHB depolymerase enzyme. Weight remains to be constant for other polymer films treated with the same strains and also no surface change was observed. Morphological changes as analysed by SEM were showing the number of holes, pits, grooves, crest, and surface roughness.

Conclusion: In response to the results presented here, the application of biodegradable plastics is a good alternative to synthetic plastics because of degradation by microbial activity in a natural environment. The PHB degradation was determined in two different environments that is in soil and liquid where usually degradation was proceeding due to microbial activity signifies the significance of PHB depolymerase enzyme in the natural environment for biodegradation of biodegradable plastics. As the burial of biodegradable plastics in soil requires no further chemical treatment or it has just a simple burring in soil thus is cheap. A huge number of microbes are still present in different habitats that have the tendency of biodegrading plastics in an eco-friendly manner with complete mineralisation and generation of no toxic compounds.

Keywords
PHB (poly-3-hydroxybutyric acid); oxo-biodegradable; mulch films; soil burial; microbial degradation; polymer degradation.

Biography
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A Comprehensive Review on Recycling and Reuse Of Greywater and the Infrastructure Design

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Abstract

Sustainable supply of water is of primordial importance to the life and welfare of all human beings. The water supplies from Water treatment plants are facing challenges due to ever-increasing pollution and maintenance of the treatment facilities. One of the smart city concepts is to recycle and reuse greywater. This method of recycling is more promising as the greywater has low organic loading when compared to “black water” which falls under the category of wastewater. Greywater is often defined as ‘used water’ and not wastewater as greywater still has the potential to be utilized a second or third time. Greywater is the water coming from sinks, showers, and/or baths. The proposed research aims to review on the applications of the new sustainable greywater drainage system in water industries. Further, it is aimed to analyse the implementation, monitoring system utilizing the Internet of Things (IoT) in this field. IoT-based systems for real-time monitoring and troubleshooting of drainage systems and waste disposal are quite an emerging field. The methods will be tested using a pilot study at UCSI University. These types of projects are expected to provide a sustainable consumption of the water, disposal waste, and thus generating revenue as an outcome.

Keywords

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Greywater system, IoI-based systems, sustainable development, urban drainage system, wastewater system design, water cost.

Biography

Dr. Ramani Bai V., Ph.D (EWRE) has 28 years of significant service in Environment and Water Resources Engineering (EWRE). She has 2 books, 80 conference papers, 16 journals, 15 book chapters published, 2 Patent grants and 3 copyrights in her field. She has won 10 awards (1 Double-Gold, 2 Gold, 4 Silver and 3 bronze medals) in EWRE. At present, she is working as Asst. Professor of Faculty of Engineering, Technology and Built Environment in UCSI University Kuala Lumpur, Malaysia.

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Food, water, and energy security in India: An ecological footprint perspective

Dr. Bandana Khataniar

Indian Institute of Technology Guwahati, India

Abstract

The Indian Himalayan Region is spread across 13 Indian States/Union Territories, viz. Jammu and Kashmir, Ladakh, Uttarakhand, Himachal Pradesh, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, Assam and West Bengal, elongating across 2500 km. Approximately 50 million people reside in this region. The region is characterized by varied demographic and resourceful economic, environmental, social and political systems. With limited land resources, inadequate energy supply, and growing water stress, the Indian Himalayan Region faces the challenge of providing enough water and energy to grow sufficient food for the growing population. Using secondary data from miscellaneous sources, this paper explores the food, water, and energy nexus from an ecological footprint aspect, highlighting the role of Indian Himalayan Region (IHR) ecosystem services in sustaining food, water, and energy security downstream, especially in Assam. The investigation discloses that the issues and challenges in the food, water, and energy sectors are interlinked in many complex ways and cannot be managed effectively without cross-sectoral assimilation. The most unique feature of the nexus in India is the high amount of reliance of downstream communities on upstream ecosystem services for irrigation and hydropower, drinking water, soil fertility and nutrients. These findings recommend that along with the improvement of the competence of resource-use and productivity of the three sectors, regional integration between upstream and downstream areas is critical in food, water, and energy security. Within the ecological footprint approach in India, equal attention should be paid to (i) management of IHR ecosystems and (ii) to reducing ecological footprint across IHR sates/UTs.

Keywords

Food–water–energy nexus, Ecosystem services, Upstream–downstream linkages, Indian Himalayan Region mountain system

Biography

Dr. Bandana Khataniar is an IIT Guwahati Alumni. She has expertise in both Statistics and Ecological Economics. Her research interest includes Sustainable Development Indecators; Urbanization; Ecological Footprint; Nexus between women and climate change; and Food, water, and energy security. Presently Dr. Khataniar is working as Superintendent in IIT Guwahati. She has been undertaking several research works independently as a free-launcher.

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Evaluation Implementation of Recruitment, Selection, Placement Policy, Public Servant of Civil Candidate from Reguler at Tanggamus Regency

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Bambang Sugiyono Agus Purwono
Primary Teacher Education Department, Muhammadiyah Pringsewu Lampung University, Indonesia
Ruel T Bongancico
Primary Teacher Education Department, Muhammadiyah Pringsewu Lampung University, Indonesia

Abstract

This research was undertaken to improve the implementation of the policy of recruitment, selection and placement CPNS (Civil Government Official Candidate) common pathway in Tanggamus with the standards or criteria that have been formulated. This research is the evaluation of the suitability evaluation model developed by Malcolm Provus. Subjects respondent is Tanggamus Secretary, Head of BKD (Regional Human Resources Council) and subordinates who became civil servant admissions committee. The steps in this research consists of five stages: design, installation, process, product, and implementation costs. Collecting data using observation, interview, and documentation study. The data collected was analyzed using an interactive Miles and Huberman model. The results of this study showed that the process of acceptance CPNS common pathway in Tanggamus already implemented effectively and efficiently in accordance with Candy PAN-RB No. 197 of 2012, Regulation No. 98 Year 2000 and Government Regulation No. 11 of 2002 to be in the moderate category tends to be high. All stages in this evaluation has been carried out in accordance follow guidelines/Juknis (Technical procedure) existing legislation so that policy can be continued recruitment of civil servants with recommendations for improvements in the future. The results also reinforce the theory of the effectiveness of public policy implementation. Recommendations are several aspects that need to be addressed, namely the personnel database, the need for the evaluation team and the financial reporting internet-based policy implementation

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Keywords
recruitment, selection and placement, effective, efficient

Biography
Dr. Fatqul Hajar Aswad, MPd, MM born in solo, Indonesia, 17thAprl 1967. A lecturer in Primary Teacher Education Department – Education Science Teacher Architecture of Muhammadiyah Pringsewu University, Lampung, Indonesia. Bachelor of Science in match, Faculty of Education Science Teacher in Muhammadiyah Pringsewu University, Lampung, Indonesia (1999). Master of educational technology, Lampung University, Lampung, Indonesia (2006). Doctor in Human Resources Management, State University of Jakarta, Indonesia (2016).

The writings has published, include: Optimizing the role of school committees in extracurricular activities, improving mathematics learning outcomes through constructivism learning, increasing school competitiveness through ICT-based model classes, increasing students' learning motivation through outdoor class learning programs. Improving teacher.

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Community Based Tourism as Sustainable Tourism Village Development

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Abstract

A new form of implementing sustainable tourism is community involvement, known as Community Based Tourism. The community as the main actor of tourism has full authority to manage and develop their own area. Therefore, every planning, policies and executions have to take environment, social, and economy elements for the stability and sustainability. This study is designed to reveal the role of CBT in the tourism village management as an effort to sustainable tourism actualization on local resources. A qualitative descriptive approach is applicated to answer the research objectives, meanwhile on the data collection surveys, interviews, and documentation are taken. On the identification of the tourism component, the study found that the community try to adopt the concept of sustainability. The environment control is describe by the community activities preserve their nature. In terms of social side, tourism village is a potential way on local wisdom preservation, the highlight of the tourist attractions. The economic sector shows tourism is an alternative improve of prosperity and economic community through the jobs availability and Small and Medium Enterprise optimization. With the limitation of this topic discussion, the findings of the research can enhance information about CBT as sustainable tourism development in tourism villages.

Keywords

Community Based Tourism, Sustainable Tourism, Tourism Development, and Tourism Village

Biography

Dr. Nining Latianingsih, S.H., M.H. is a lecturer in Jakarta State Polytechnic, Business Administration Department born in 30 September 1962. She received a bachelor, master, and doctoral degrees in law. Her specialty field are business law and policy. She is interest in research and community dedication. she also take a part in tourism, community development, information and technology research.

Dewi Winarni Susyanti, S.E., M.Si. is a lecturer in Jakarta State Polytechnic, Business Administration Department. Her object focus is communication, particularly business and tourism. She also take a part for research and community dedication.

Meisa Sofia, S.Tr., M.Par. is a researcher graduated from MICE and master of tourism planning.

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X-Rays a doctor's best friend or Environment's foe!



Dr.Kumar Sougata
Independent practitioners, India
Dr.Nitya Jha
Independent practitioners, India
Dr Harshita Chhajer
Independent practitioners, India

Abstract

Category: Department of Oral Medicine and Radiology
Division: Original Research
Background: A patient walks into a dental clinic and the medical world has a set of rules inscribed for him/her. One of them is taking an X-ray to know the damage already done. However, have you ever thought what happens to that X-ray film, the developer or even the packet in which the film comes in wrapped? With a population of 7 billion and counting and the world wrapped under the ailing umbrella of diseases doesn't it make you worry that as a civilization of tomorrow, is the world prepped enough to carry on with this primitive of a waste? Well it's about time we analyze the problem redefine our practices as health professionals for the same.
Aim of the Study: To assess the curious relationship between X-ray waste and environment.
Research Question: Is there a need to redefine our practice as doctors to understand the proper disposal methodologies for X-ray wastes.
Materials & Methods: With the MEDLINE database taken as a source for authenticated scientific research data, articles were selected having undergone Randomized Control Trial. Out of these, articles (studies) were chosen which met the criterion for Systematic Review.
Results & Conclusion: Since the study is still in progress, the results will be discussed at the venue on the day of the conference

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Biography

Author: - Dr.Kumar Sougata (BDS) is a Clinical Analyst and is currently interning at the United Nations Volunteering Program in Uganda he has been a part of several national and international conferences and has authored papers for several national and international journals.

Co-Author:- Dr. Nitya Jha (BDS) is currently a practicing dentist. Quite often she navigates the world of dentistry and health care with a passionate heart and a concerned mind.

Dr._Harshita Chhajer_(BDS)) is currently a practicing dentist and she is aiming to make her mark in the field of Dentistry and Health Policy making.

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Assessment of Management Practices, Biotic and Environmental Constraints on Paddy Productivity across Muda Agricultural Development Authority (MADA), Malaysia

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Department of Decision Sciences, School of Quantitative Sciences, College of Arts and Sciences, Universiti Utara Malaysia, Sintok, Kedah, Malaysia.
Mohammed Baba Abdullahi
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Abstract

The goal of increasing food security in Malaysia focused on rice productivity. This study assesses the management practices, biotic constraints and environmental factors on rice productivity within the MADA paddy area. Data for this study was based on well- structured questionnaire to obtain from 673 paddy farmers in MADA area. Both descriptive statistics and linear regression model was employed for analysis. Results showed that about 78.9%, 5.8%, 40.0%, 46.1%, and 54.2% experienced biotic constraints from insects, animals, diseases, wind, and weeds respectively. Again, an average of 1.2% and 0.1% experienced environmental constraints from flood and drought respectively. However, the damages from these constraints varies in magnitude with loses ranging from 0 to 75% in productivity. Among the biotic factors, only snails and diseases were found to have a significant and negative effect on productivity. While three management practices including schedule compliance, time spent daily on field, and second fertilizer application had a significant effect, however all showed a negative effect except schedule compliance. Again, none of the environmental factors was significant, which is attributable to efficient irrigation system and drainage at MADA. Since snails and diseases found to effect the productivity, proper varieties need to be selected to increase the productivity.

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Keywords
Biotic, Environmental, Management Practices, Paddy and Productivity

Biography
Assoc. Prof. Dr. Shri Dewi Applanaidu is attached to the Department of Economics and Agribusiness, Universiti Utara Malaysia (UUM). Currently, she is the Head of the Sustainable Agriculture and Food Research Unit (SAFRU). Her research interests are in the area of Agricultural Econometric Modeling, Agricultural Economics and Food Security.

The Assessment of Paddy Estate Value Chain and Its Implications for Productivity Growth in the Muda Agricultural Development Authority (MADA): A System Dynamics Approach

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Abstract

The inability to achieve the potential productivity of 10 Mt/ha by the paddy estates holds back the target of self-sufficiency (SSL) and food security improvement in Malaysia. The paddy sector has a complex value chain with complex interactions between units. Therefore, given this uniqueness the common approach of field experimentation alone is inefficient in analysing the rice sector. System dynamics (SD) approach is considered appropriate since the entire units across the value chain could be holistically assessed. Thus, this study employed the SD modelling to holistically assess the factors influencing paddy productivity throughout the paddy value chain. Then, the study develops a conceptual framework of the factors influencing each variable, while examining how a unit respond to changes in another. The framework comprises rice value chain; include paddy production, rice production, subsidy, import and implications of SSL on the food security. Specifically, the study developed a causal loop diagram (CLD) based on the specified variables to examine the causal and effect of the identified factors that preventing MADA paddy estate from reaching the targeted paddy productivity. The CLD is a useful tool to highlight the relationships in value chain of paddy sector using the loop polarity concept.

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Keywords
Causal loop diagram, Paddy productivity, Rice self-sufficiency level, rice value chain and System dynamics

Biography
Assoc. Prof. Dr. Shri Dewi Applanaidu is attached to the Department of Economics and Agribusiness, Universiti Utara Malaysia (UUM). Currently, she is the Head of the Sustainable Agriculture and Food Research Unit (SAFRU). Her research interests are in the area of Agricultural Econometric Modeling, Agricultural Economics and Food Security.

Preparation of Chitosan Clay Imazethapyr Nanocomposite and Their Characterization

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Achintya L Mondal
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Abstract
Natural polymer chitosan shown excellent results in drug delivery and chitosan based nano composites may reduce the leaching potential. Leaching of pesticide is one of the main concerns to contaminate ground water. Selective herbicide Imazethapyr widely used in agrochemical for crop protection to control the unwanted weed for Soyabean crop. Imazethapyr herbicide having very low Koc of 10 and it is a potential candidate to leach ground water and chosen to make nanocomposites. Chitosan clay nano composites has been made with different ratio of chitosan and clay. The clay used fort this research programme is bentonite. The best ratio of chitosan bentonite clay nanocomposites is loaded with Imazethapyr. Thermal Gravimetric (TGA) and Fourier-transform infrared spectroscopy (FTIR) has been used to characterize the nano composites. Three different loading of Imazethapyr selective herbicide has been loaded on chitosan clay nano composites and their percentage w/w is confirmed by High pressure liquid chromatography (HPLC) technique.

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Biography

Mr. Praveen Kumar Mishra have completed his graduation in Industrial chemistry. He has done double post-graduate, Master of Science (M. Sc.) degree in Industrial Chemistry and Master in Technology (M. Tech.) degree in Oleochemicals and Surfactant Technology from Kavayitri Bahinabai Chaudhari North Maharashtra University, Jalgaon, Maharashtra, India. His research area is nano composites for Agrochemical application.

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Silicon Supplementation alleviates herbicide induced toxicity in wheat (*Triticum aestivum*) seedlings

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Amity Institute of Organic Agriculture, Noida, Uttar Pradesh, India

Abstract

Reckless use of herbicides in the agricultural field poses a severe risk to crops by affecting their yields. Therefore, methods are required to reduce the toxic effects of herbicides in plants. Studies indicate that silicon (Si) provides tolerance and enhances defense mechanism of the plant against abiotic stress. But its role in alleviating Metsulfuron methyl (Meth) herbicide induced toxicity in wheat seedlings is still not known. This study highlighted the potential of exogenous addition of Si in the alleviation of toxic effect of Meth herbicide in wheat seedlings. The exposure of wheat seedlings to Meth herbicide reduced the growth, photosynthetic pigments, antioxidant enzyme activity and nitric oxide (NO) content. Further, Meth herbicide also increased cell death and decreased cell viability in root tips. However, addition of Si reversed Meth-induced these alterations. Moreover, Si also activates antioxidant system which helps in scavenging of free radicals generated under Meth herbicide stress in wheat seedlings. Application of Si to Meth treated wheat seedlings also up-regulated silicon transporter gene Lsi1 (silicon influx transporter) and some of the antioxidant enzyme genes.
Therefore, it can be concluded that the application of Si alleviates Meth herbicide induced toxicity in wheat seedlings by altering morpho-physiological, biochemical and molecular parameters. The antioxidant enzyme activity regulated ROS levels and thereby reduced oxidative stress in wheat seedlings. Si mediated amelioration of herbicide toxicity alters the gene expression of silicon transporter, mineral transporters, detoxifying genes and antioxidant enzymes. It can be concluded from the data that Si helps to reduce the toxic effect of Meth herbicide in wheat seedlings.

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Keywords
Silicon (Si), Metsulfuron methyl (Meth), Antioxidant enzymes, Triticum aestivum, Reactive oxygen species (ROS), Abiotic stress

Biography
Shruti Jain Research Scholar, Department of Biotechnology, Motilal Nehru National Institute of Technology Allahabad, Uttar Pradesh, India

Recycling of Various Agro-Wastes on the Mass Cultivation of Edible Mushroom

Naga Priya

Research Scholar, Post Graduate and Research Centre of Zoology, Jayaraj Annapackiam College for Women (Autonomous), Affiliated to Mother Teresa Women's University Kodaikanal, Periyakulam, Theni District. 625601. Tamil Nadu, India.

Sagaya rani .C

Associate Professor,of Zoology, Post Graduate and Research Centre of Zoology, Jayaraj Annapackiam College for Women (Autonomous), Affiliated to Mother Teresa Women's University Kodaikanal, Periyakulam, Theni District, Tamil Nadu, India.

Abstract

Agricultural wastes are high in various nutrients, and their disposal is challenging to manage since excess nutrients in them might cause erosion if left in the field as compost. They are mostly disposed of through incineration, which pollutes the environment. Therefore there are always great demands to locate a cost-effective and less polluting agricultural waste treatment approach These requirements are fulfilled by mushroom cultivation on agricultural waste. They are highly nutritious products produced from lignocellulosic waste. Bioconversion into a value-added product of agricultural waste is a suitable means of utilization. The edible mushroom used in study while the agricultural wastes paddy straw, banana leaves, sugar cane trash, corn husk, and saw dust. Paddy straw had the highest biological efficiency (98.75%) as a substrate, followed by corn husk (85.75%), sugarcane trash (76.5%), sawdust (56.52%), and dry banana leaves (66.075 %). On paddy straw, Pleurotus ostreatus provided the highest bio quality. Corn husk had the highest moisture content (91.62 %), while saw dust had the lowest moisture content (83.81 %). Saw dust from Pleurotus ostreatus had the largest proportion of dry matter (16.19), followed by corn husk (8.36). In addition to overcoming this issue, a specific agricultural waste combination also provides high mushroom yields economically. As such mushroom forming fungi convert low -quality waste streams in to high quality food.

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Keywords
Agro waste, Mushroom, Lignocellulosic, Bioconversion

Biography
P.Naga Priya doing M.Phil from Jayaraj Annapackiam College for Women (Autonomous), Affiliated to Mother Teresa Women's University Kodaikanal.

Photocatalytic degradation of pesticide using Nano Catalysts via Greener route

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Abstract

In this work, Dichlorvos was degraded with Photocatalytic active n-type semiconductors and p-n junction type semiconductors. The p-n type semiconductors such as GO-TiO_2 and GO – WO_3 were synthesized by photodeposition method used by commercial TiO_2 and WO_3. GO doped nano TiO_2 was synthesized through solgel technique from titanium (IV) isopropoxide by hydrothermal treatment. The synthesized materials were characterized by different techniques such as XRD, UV, FTIR, SEM and TEM. In order to find out their photocatalytic ability and degradation of Dichlorvos, experiment was carried out in aqueous suspension under UV light with influence of oxygen and oxidant such as H_2O_2 and $K_2S_2O_8$. From the evaluation, GO – Nano TiO_2 with H_2O_2 was found to be highly active and showed complete degradation within 15 minutes under UV light.

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Biography

Franklin Ebenazer received his B.Sc(2008) in chemistry from Kongunadu arts and science College Coimbatore and completed his PG degree (2010) in same institution. His done Mphil degree(2016) in Sri Ramakrishna mission vidhyalaya college of arts and science, Coimbatore. He started Ph.d in organic synthesis under the guidance of Dr. N. Sampathkumar, in Chikkanna government arts college ,Tiruppur. His research interest to design novel fused quinoline derivatives and also in photocatalytic degradations using nano catalysts.

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Feeling blue? Let's go green

Vinaya. Majji
MSc. Int. Biotechnology, Sri Padmavati Mahila Visvavidyalayam, Tirupati, India

Abstract

Now-a-days, the air we breathe and the food we eat is all full of chemicals and pollutants. Humans are causing life on earth to vanish. Ecosystems, the fabric of life on which we al depend are declining rapidly because of human actions. But there is still time to save them. The loss of ecosystem is caused mainly by changes in land and sea use, exploitation, climate change, pollution and introduction of invasive species. Other causes are indirect. Those include demographic, economic, political and institutional arrangements underpinned by social values and they interact with one another.

The question is "WHAT DOES THE FUTURE HOLD?"

So, for this, the world must look under three very different scenarios.

1. GLOBAL SUSTAINABILITY: The whole world shifts towards sustainability by respecting environmental boundaries and making sure economic development includes everyone. Wealth is distributed evenly; resources and energy are used less and emphasis is on economic growth and human well-being.

2. REGIONAL COMPETITION: High income countries will continue exporting the damage resulting in some strong and lasting environmental destruction for future generations to deal with

3. ECONOMIC OPTIMISM: The world puts faith in new and innovative technologies that are still to be invented which help us cope with environmental problems. Emissions will continue but with the idea that technology will mitigate them. There will be stronger investment in health and education and global markets are reasonably integrated with shared goals.

STEPS TO BE TAKEN TO SAVE OUR ENVIRONMENT:

REIMAGINE- RECREATE- RESTORE

Combating the loss of ecosystems is going to be complex and will require a nexus approach. Our environment must be protected at all costs because it is a life-sustaining force for us. We must save our mother nature from pollution toxicity and contamination. The way to avoid some of these issues may be to focus on regenerating and restoring high carbon ecosystems such as forests and wet lands. Going green is an idea that helps us to reduce our impact on the environment and nature. It is an excellent initiative that will help our nature to sustain resources for future generations. Going green is a choice

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of step that a person takes to help our planet earth. There is not much labour or hard work requires to go green. And it is also not necessary to implement a government rue to go green. We can help nature by changing our own deeds. For this there must be control of landslides, floods and soil erosion. Furthermore, there should also be afforestation and tree plantation to conserve soil. Also, terrace faring and using natural fertilizers are some more ways. Waste Management is a powerful way of protecting the environment. Battery driven automobiles can be used to decrease pollution levels and emissions. We can use solar energy to protect our natural resources as it is renewable and causes no pollution. To protect our environment, we must discard plastic and use jute, paper or cloth in its place. We must abide by the laws created by the Government regarding our environment. The "Swatch Bharat Abhiyaan" is an example of one such mission. Ecosystem restoration can take many forms: Growing trees, Greening cities, Rewilding gardens, changing diets or Cleaning up rivers and coasts. This is the generation that can make peace with nature.

This is our moment. We cannot turn back time. But we can grow trees, green our cities, rewild our gardens, change our diets and clean up rivers and coasts. We are the generation that can make peace with nature. Let's get active and not anxious. Let's be bold, not timid.

Biography:

This is Vinaya.Majji, student of Integrated MSc Biotechnology in Sri Padmavati Mahila Visvavidyalayam, Tirupati. I am passionate about research in the field of Science. I am a person who thrives off positive results and seeks opportunities to continue learning and exploring Science. Looking forward to get absorbed din research and development. I am a quick learner with the ability to grasp new technologies. I am flexible and adaptable to any kind of situation. I am capable of combining current academic knowledge and theoretical training with practical experience to develop solution-oriented works. Major fields of interest are Molecular Biology, Genetics, Immunology and Cell biology. I have participated in several national and international conferences, webinars and hackathons. I was honoured the "BEST PRESENTER AWARD" for presenting an exemplary virtual presentation entitled "3D BIOPRINTING" in an INTERNATIONAL CONFERENCE organised by the Association of Global Academicians and Researchers in collaboration with Association of Indian Biologists.

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Let's Speek the Unspoken: Environmental Health

Dr.Yashi Shrivastava
Doctor, Cancer Hospital-Surat, India

Abstract

We do not perceive and appreciate the value of environmental health until it has been diminished. Environmental pollution continues to be a major source of health risk around the world, albeit the hazards are disproportionately larger in developing nations, where poverty, a lack of investment in modern technology, and poor environmental legislation combine to produce high pollution. Environmental pollution and health outcomes, on the other hand, are complex and often poorly understood. Because of the lack of extensive monitoring and the unavoidable fluctuations within any population group, exposure levels, for example, are frequently imprecise or unknown. Exposures can happen through a variety of channels and procedures. Individual pollutants can cause a wide range of health impacts, but only a few diseases can be linked to a particular pollutant level. Long latency times, the impact of cumulative exposures, and multiple exposures to different contaminants that may operate synergistically all make it difficult to decipher links between pollution and health. Nonetheless, various attempts have been undertaken in recent years to estimate the global burden of disease caused by pollution, either in terms of death or disability-adjusted life years (DALYs). Pollution is responsible for 8–9% of the total disease burden, but it is much higher in developing nations. Unsafe water, poor sanitation, and poor hygiene, as well as indoor air pollution, are recognized as the main sources of exposure. Anthropogenic activities have dramatically altered the earth's ecology and resulting in major environmental changes over the last century or more. Environmental pollution, land degradation, global warming/climate change, a lack of drinkable water supply, and biodiversity loss have all been exacerbated by widespread interference of human-related activities. These challenges have had a direct impact on ecosystem quality and sustainability. Furthermore, these activities have resulted in habitat destruction, leading in mass extinction of species, which is a major worry in and of itself. Studies and data plainly suggest that if current patterns continue, conditions will deteriorate in the near future, putting human civilization in jeopardy. Possible green solutions, such as the employment of microorganisms and biotechnological tools, are gaining traction in order to mitigate or repair the detrimental effects of anthropogenic activity, hence maintaining environmental sustainability.

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Biography

My name is Dr.Yashi Shrivastava come from the city of diamonds, Surat (Gujarat). Currently pursuing master's in public health from Indian Institute of Public Health, Delhi. I'm an emerging doctor aiming towards HIT INDIA FIT INDIA. I love to heal people & environment, want to reach the unreached & listen to the silent screams. I have worked with the Government of Gujarat & Madhya Pradesh for various free health checkups & health camps, screening of oral cancers & to spread awareness about health & will continue to work. I love to motivate people & have been invited to various national & international platforms as a guest speaker. I'm a research-innovation enthusiast, at present my research revolve around oral cancer, mental health & environmental health. I have done a research project on oral cancer which is satisfactorily approved by ICMR. I love nature & I'm simply a dendrophile. This platform will help me to reach more & more people & spread the virus of happiness, awareness & healing power. In the world of adrenaline, I choose to be the endorphin spreading love & smiles :)

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Biochemical Effect of Copper Sulphate on Various Tissues of Freshwater Fish, Oreochromis Niloticus

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Abstract

The unconsidered usage of Heavy metals, pollute the environment and water bodies continuously. Most of the Heavy metals enter into the food chain are cause physiological damage for the aquatic living organisms. The toxicological effects of Heavy metals are extends to non-target oraganisms like freshwater fishes. Copper sulphate is a heavy metal, is recognized as a persistently toxic substance and considered as a pollutant. The excessive use of Copper sulphate has resulted in widespread contamination in the environment and aquatic media. Copper sulphate is highly toxic to fresh water fishes and has cause death of fish. The present study is to assess the protein, lipid and carbohydrate content in Gill, Liver, Kidney and Muscle of the fresh water fish Oreochromis niloticus exposed to various sublethal concentration of Copper sulphate 1/10th and 1/20th of the 96 hour LC¬¬50 value for the period of 30 days. The fish exposed to Copper sulphate showed, gradual decreases in protein, lipid and carbohydrate level in the Gill, Liver, Kidney and Muscle tissue. The depletion of protein, Lipid, Carbohydrate content in Gill, Liver and Kidney tissue of Oreochromis niloticus was due to the toxicant stress caused by Heavy metal.

Keywords

Oreochromis niloticus, Copper sulphate, Protein, Lipid, Carbohydrate

Biography

Sasikumar S is a Phd Research Scholar, PG And Research Department of Zoology, Government Arts College For Men, Krishnagiri, Tamilnadu, India.

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