National Conference

on

Biological Diversity and Environmental Sustainability

SOUVENIR

NSBDES-2022

25-26 March, 2022

Sponsored by

Department of Higher Education,

U.P., Lucknow.

Organized by:

Department of Botany

कुल गीत

परम सुहावन, अतीव पावन,
महान् विद्या–भवन हमारा।
निधान–विज्ञान–ज्ञान का जो,
उसे शताधिक नमन हमारा।।
सुकीर्ति काशी नरेश की है,
विभूति उत्तर प्रदेश की है।
अमूल्य निधि है स्वदेश की जो,
वही अविद्या – हरण हमारा।।
प्रयाग काशी द्विपार्श्व जिसके,
चरण दबाती सुविन्ध्य माला।
छटा प्रकृति की जहां मनोहर,
वही सुजन–मन–रमण हमारा।।
सदा प्रशिक्षण मनुष्यता का,
प्रदान करता सदन हमारा।
निकेत सुन्दर सरस्वती का,
मनीषियों का भवन हमारा।।
प्रसार जिसकी सुगन्ध का,
हम दिशा–दिशा में बिखर करेंगे।
त्रिलोक–लोभी वही मनोहर,
अनूप दिव्योपवन हमारा।।

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Programme Overview

Day One, Friday, March 25, 2022

Venue: Main Hall, K. N. Govt. P. G. College, Gyanpur

09:00am-11:00 am — Registration

11:00 am-02:00 pm

Inaugural Session

Welcome by Convener

Dr. Rashmi Singh

Garlanding of Statue of Saraswati

Kulgeet

Floral Welcome of Guests and felicitation of Dignitaries

Release of Souvenir

Invited Lecture:

Prof. G S Singh, BHU

Prof. H K Kehri, Allahabad Central University

Key Note Address

Prof. N.K. Dubey, BHU

Vote of Thanks By

Dr.Suman Gupta

2:00 pm-3:00 pm — **Lunch**

3:00 pm-5:00 pm — **Technical Sessions**

SCI-1	**AHC-1**
Invited Lectures and Presentation by Participants	Invited Lectures and Presentation by Participants
Chairpersons	Chairpersons
Prof. G S Singh, BHU	Prof. H K Kehri, Allahabad Central University
Co-Chairpersons	
Dr. K. A. Siddiquii	Dr. Kiran Sharma
Dr. Shubha Srivastava	Dr.English Kumar
Reporteur	
Dr. Jai singh Yadav	Dr. Pratima Gupta
Dr. Manoj Awasthi	Dr. Siddhartha Baranwal
Dr. Amit Sharma	Dr. Jeetendra Kumar Maurya

Programme Overview

Day Two, Saturday, March 26, 2022

Venue: Main Hall, K. N. Govt. P. G. College, Gyanpur

8:30 am-9:30 am	Breakfast
9:30 am-10:00 am	Poster Session
10:00 am- 12:30 pm	**Technical Sessions**
SCI-II	**Online Session**
Invited Lectures and Presentation by Participants	Invited Lectures and Presentation by Participants
Chairpersons	Chairpersons
Dr. A. K. Dwivedi, Gorakhpur	Dr. M P Singh, Varanasi
Co-Chairpersons	
Dr. A K Kushwaha	Dr. R P Yadav
Dr. V K Yadav	Dr. Kamini Verma
Reporteur	
Dr. S. P. Mishra	Dr. Awadhesh Kumar Arya
Dr. Anand Kumar	Dr. Nidhi Khanna
12:30-1:30pm	**Lunch**
1:30 pm-04:00 pm	**Valedictory Function** Welcome of Guests Invited lectures Prof. A K Dwivedi, Gorakhpur Brief Report of the Conference Declaration and distribution of Best paper and Poster award Vote of Thanks

Few Words From Organizing Secretaries.....

I feel very proud that Department of Botany, K. N. Govt. P. G. College, Gyanpur, Bhadohi is going to add a new feather in its cap by organizing two days National seminar on the topic "Biodiversity and Environmental Sustainability on March 25-26, 2022.

The prime motive behind organizing this conference is to provide a platform for interaction between academicians and students to make conducive environment for research in different areas and transduction of innovative ideas amongst the intellectuals. On behalf of organizing committee, I am grateful to all the guest speakers and number of informative experts, visiting from different educational institutes for sharing their knowledge and experiences which ensure the success of this conference.

I extend my sincere gratitude to our Hon'able Chief Patron Dr. Amit Bhardwaj, Director, Higher Education, U.P., Prayagraj for his blessings for this conference that have encouraged us to get deeply engrossed and work hard for its success.

I also express my deep sense of gratitude to our Patron Dr. P. N. Dongre, Principal, K. N. Govt. P. G. College, Gyanpur, for trusting me worthy for the responsible task of organizing secretary. He has been the guiding source who inspired us throughout this crucial time with his wholehearted support and instilled enthusiastic commitment among us also, to make this event a great success.

I would also like to extend my vote of thanks to my Convener Dr. Rashmi Singh, who has been a source of inspiration for me through her strenuous conviction for completing the task.

Last but not the least, I am extremely thankful to all our seniors and colleagues for their full support and cooperation in this endeavor.

Dr. Suman Gupta
Dr. Ravindra Kumar Pandey
Dr. Saumya Mishra
Assistant Professor
Department of Botany, K. N. Govt. P. G. College,
Gyanpur, Bhadohi

डॉ. अमित भारद्वाज
निदेशक, उच्च शिक्षा

उच्च शिक्षा निदेशालय, उ.प्र.,
प्रयागराज
0532–2623874 (का.)
9412582038 (मो.)
दिनांक :22 / 03 / 2022

सन्देश

हर्ष का विषय है कि **काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय, ज्ञानपुर, भदोही दिनांक 25 एवं 26 मार्च, 2022 को "नेशनल कान्फ्रेंस ऑन बायो डाइवरसिटी एण्ड इनवायरमेन्टल सस्टेनेबेलिटी"** विषयक एक राष्ट्रीय संगोष्ठी का आयोजन कर रहा है। जिसमें देश के विभिन्न विद्वतजनों की सहभागिता होगी तथा उनके विचारों के पारस्परिक आदान–प्रदान से जैव विविधता तथा पर्यावरणीय स्थिरता की दिशा में अत्यन्त उपयोगी तथा भविष्योन्मुखी विचारों के प्रति जन मानस में चेतना फैलाने का कार्य होगा जो कि मानव एवं समाज के लिए अत्यन्त उपयोगी सिद्ध होगा। यह एक प्रशंसनीय कार्य है।

संगोष्ठी के सफल आयोजन हेतु प्राचार्य एवं संयोजक को मेरी हार्दिक शुभकामनायें।

डॉ. (अमित भारद्वाज)

सेवा में,

डॉ. प्रदीप नारायण डोंगरे
प्राचार्य,
काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय,
ज्ञानपुर, भदोही (उ0प्र0)।

प्रो0 आनन्द कुमार त्यागी
कुलपति
Prof. Anand K. Tyagi
Vice Chancellor

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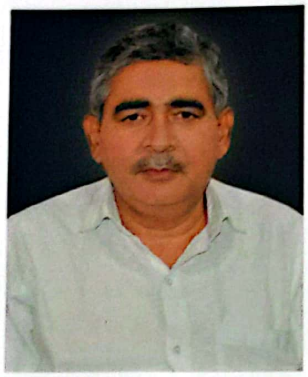

दिनांक 22.03.2022

संदेश

अत्यन्त हर्ष का विषय है कि काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय, ज्ञानपुर, संत रविदास नगर, भदोही दिनांक 25,26 मार्च, 2022 को **"बायो डायवरसिटी एण्ड इनवायरमेण्टल सस्टेनेबेलीटी"** विषयक राष्ट्रीय संगोष्ठी आयोजित करने जा रहा है।

आशा है संगोष्ठी में देश के विभिन्न क्षेत्रों के प्रतिष्ठित विद्वान प्रतिभाग करेगें। जिसमें जीवन की विविधता और पर्यावरणीय स्थिरता पर विचार–विमर्श किया जायेगा। जो विद्यार्थियों, शोधार्थियों एवं समाज के सभी वर्गो के लिए लाभदायक सिद्ध होगा।

मैं संगोष्ठी के सफल आयोजन की कामना करता हूँ तथा आयोजन कार्य में लगें सभी सुधीजनों को साधुवाद देता हूँ।

मंगलकामनाओं सहित,

(प्रो0 ए0के0 त्यागी)
कुलपति

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K. N. Government P. G. College, Gyanpur, Bhadohi-221304, U.P.
(Accredited B Grade by NAAC)
Affiliating University: Mahatma Gandhi Kashi Vidyapeeth,Varanasi
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Principal

Message

The ever increasing human population on the earth and ever increasing needs and greed of man have put enormous pressure on natural resources. This has not only resultant in imbalance in various ecosystems but also has resulted in increasing natural calamities. This necessitate an urgent need for discussion at both social and scientific levels to curb the harmful impact of pollution and disasters. Keeping this view in mind the Department of Botany, K.N. Government P.G. College Gyanpur Bhadohi is organizing two days conference on the topic "Biodiversity & Environmental Sustainability".

We are thankful to state Government of Uttar-Pradesh for the financial assistance and also to Dr. Amit Bhardwaj (Director of Higher Education U.P.) for his continuous moral support.

I wish the organizers all the success.

Dr. P. N, Dongre

I001

Biodiversity and Environmental Sustainability: Current Status and Global Challenges

G S Singh, Rinku Singh, Anil Sharma, S K Patel, Akanksha Yadav, and Sudhanshu Kumar

Department of Environment and Sustainable Development,
Institute of Environment and Sustainable Development,
Banaras Hindu University, Varanasi-221 005, UP
Email ID: gopalsingh.bhu@gmail.com

Abstract

Earth has unique place in universe due to the presence of life that exhibits immense diversity in form of various species expecting five to more than fifty million species on spatio-temporal scale. Geographic and climatic variabilities triggered the existence of diverse ecosystems like deserts, ocean, mountains and rivers comprise the biological diversity or biodiversity. It provides different ecosystem structure, function, services and enormous economic benefits, through natural ecosystems and plays an important role in reshaping. Biodiversity constitutes the most important working component of a natural ecosystem. It helps maintain ecological processes, creates soils, recycles nutrients, moderates climate, degrades waste, controls diseases and above all, provides an index of life and health of an ecosystem. Providing food, medicines and a wide range of the useful products in form of different ecosystem services, it is the natural wealth that exists on land and water environment that support basic need of food security, primary health care and meets the life support system and material needs. Balanced natural ecosystems characterised ecological sustainability, maintain homeostasis, address ecological carrying capacity and foot prints, sustain biomass linked productivity and nutrient cycling, and balance hydrology.

Various anthropogenic activities affect the earth systems as whole and cause change in the biotic structure of the planet declining in species richness in particular and ecosystem function and services in general. Habitat loss is the single largest threat to biodiversity in addition to increasing needs and demands, overexploitation, biological invasion, climate change, pollution, modernization, infrastructure and disease to organisms are also some major threats to biological diversity. Besides these threats some other drivers include loss of keystone species, extinction, and change in species dynamics, accidental mortality and natural disaster accelerate biodiversity loss. The predicted extent of species loss has drawn attention worldwide, increasing efforts raised rapidly to assess and conserve biodiversity at multifarious scales. Fundamental processes of speciation, endemism, coexistence, extinction, and different susceptibility of taxa and habitats are not sufficiently understood in wake of mass extinction of biodiversity. The environment and biodiversity are inseparable. The impact of all these environmental alterations on biodiversity has been discussed in this chapter. Sustainable development practices to conserve biodiversity and natural resources are the need of hour. Sustainable development, reducing overconsumption of resources and slowing human population growth are key factors to deal with the biodiversity depletion. The efforts to safe-guard threatened biodiversity at the global level are failing because many species usually face more than one threat. Moreover, indigenous community linked knowledge in amalgamation of scientific input may address sustainable conservation and management practices.

The growing global challenges and opportunities centered on policy linked with biodiversity conservation and management practices should address internationally. Looking the strength of biodiversity and natural support system various international organizations seek concern for better biodiversity management. Moreover, United Nation has taken various measurable steps UN Decade on Biodiversity (2011-20); UN Decade on Ecosystem Restoration (2021-30); UN Decade on Ocean Science and Sustainable Development (2021-30); UN Decade for Eradication of Poverty (2018-27); UN Decade on Action on Nutrition (2016-25) that strengthen biodiversity globally. Millennium Ecosystem Assessment (2001-05), Millennium Development Goals (2006-15) and Sustainable Development Goals (2015-30) came to achieve development linked sustainable development options in various disciplines. Factors governing biodiversity assessment and policy linked sustainable management would be discussed.

Keywords: *Biodiversity, Sustainable Development, Ecosystem Services, Human wellbeing, Policy*

I002

जैव विविधता ह्रास मानव अस्तित्व के लिए खतरा

डा. कमाल अहमद सिद्दीकी

पूर्व एसोसिएट प्रोफेसर, वनस्पति विज्ञान

सारांश

जैव विविधता जीवन और विविधता के संयोग से बना हुआ शब्द है जो पृथ्वी पर पाये जाने वाले जीवन की विविधता और परिवर्तनशीलता को संदर्भित करता है. जैव विविधता एक प्राकृतिक संसाधन है जिससे हमारे जीवन की संपूर्ण आवश्यकताओं की पूर्ति होती है. दूसरे शब्दों में जैवविविधता पृथ्वी पर पाई जाने वाली विभिन्न प्रकार की उन जैव प्रजातियों को कहते हैं जो अपने– अपने प्राकृतिक आवासीय क्षेत्रों में पाए जाते हैं द्य इसमें पेड़ पौधे, सूक्ष्मजीव पशु पक्षी आदि सभी सम्मिलित होते हैं . जीव जंतुओं में विविधता का प्रमुख कारण भौगोलिक पर्यावरण में विविधता है और यह हजारों – करोड़ों वर्षों की अवधि में चलने वाली प्रक्रिया का प्रतिफल है और प्रत्येक जीव का पारिस्थितिकी तंत्र में एक विशेष महत्त्व है. जैव विविधता एक प्रमुख प्राकृतिक संसाधन है जो हमें जीवन सुरक्षा प्रदान करता है. विभिन्न प्रकार के जीवों की अपनी अलग अलग भूमिका होती है जो प्रकृति को संतुलित रखने तथा पृथ्वी को जीवंत बनाए रखने में अपना महत्वपूर्ण योगदान देते हैं. सूक्ष्मजीव जैसे– विषाणु जीवाणु कवक तथा अन्य सूक्ष्म प्रजातियों का उतना ही महत्व है जितना बड़ी बड़ी वनस्पतियों और प्राणियों का है. वनस्पति एवं प्राणियों के बीच सहजीविता का संबंध होता है और दोनों एक दूसरे के पूरक होते हैं. अतः प्रकृति के निर्माण एवं उस को बरकरार रखने में जैव विविधता की महत्वपूर्ण भूमिका है और प्रकृति में किसी भी प्रकार के जीवों का क्षरण या विनाश प्रकृति एवं पर्यावरण के लिए खतरनाक हो सकता है.

पिछले साठ वर्षों से मानव जनसंख्या में असाधारण वृद्धि औद्योगिक एवं कृषि विकास के कारण तमाम तरह की पर्यावरण विकृतियां होने लगी हैं और पर्यावरण भौतिक एवं रासायनिक रूप से दूषित होने लगा है . जिसके फलस्वरूप तमाम तरह के प्राणियों वनस्पतियों तथा सूक्ष्म जीवों के नष्ट होने की संभावना बढ़ी है. जीवों की प्रजातियों एवं जातियों के लगातार नष्ट होते रहने की प्रक्रिया को जैव विविधता क्षरण के नाम से जाना जाता है. मिट्टी जल और वायु के समान ही जैवविविधता एक मुख्य प्राकृतिक संसाधन है जिसका क्षरण पर्यावरण के लिए नुकसान दायक साबित हो सकता है. अगर क्षरण नहीं रोका गया तो भविष्य में इनके बहुत ही नकारात्मक परिणाम हो सकते हैं. जीव जन्तुओं के आवास विनाश आवास विखंडन आवास विघटन एवं प्रदूषण अत्यधिक उपयोग प्राकृतिक आपदाएं जलवायु परिवर्तन उन्नत प्रजातियों का आगमन एवं उनका उपयोग एकफसली खेती अनियमित जनसंख्या वृद्धि औद्योगिक कृषि जैसी घटनाएं भी जैव विविधता ह्रास के अन्य कारण हैं.

जीव –जंतु प्रकृति एवं वनों के अभिन्न अंग हैं. इनका संतुलन और वितरण पारिस्थितिकी तंत्र एवं पर्यावरण संतुलन के लिए अति आवश्यक है. मानव की सुख शांति एवं प्रगति भी इनके साथ सामंजस्य पूर्ण व्यवहार से जुड़ी हुई है . प्रकृति का अति विशिष्ट प्राणी होने के नाते जीव जंतुओं का संरक्षण एवं ध्यान रखना मनुष्य का विशेष दायित्व है. लेकिन मनुष्य आज अपनी मानवीय गरिमा से पतित होता जा रहा है. वह अपनी भोग विलासिता व लोभ की हवस पूरा करने के लिए अपने ही पर्यावरण सहयोगी जीव जंतुओं को नष्ट करने में जुटा हुआ है . जीव जंतुओं की संख्या दिन प्रतिदिन घटती जा रही है इन की कुछ प्रजातियां तो विलुप्त हो चुकी है और कुछ विलुप्ति के कगार पर हैं. वनस्पति या जीव–जंतु की प्रजाति के विलुप्त होने का प्रभाव सीमित क्षेत्र तक न होकर विश्वव्यापी होता है क्योंकि इससे पारिस्थितिकी तंत्र एवं पर्यावरण का प्रत्येक पक्ष प्रत्यक्ष या परोक्ष रूप से प्रभावित होता है. और परितंत्र में खाद्य श्रृंखला एवं उर्जा प्रवाह में प्रत्यक्ष रुप से बाधा पड़ती है. अच्छा हो कि मनुष्य अपनी मनुष्योचित गरिमा को समझें व अपनी अमर्यादित विलासिता पूर्ण व्यवहारों पर स्वयं अंकुश लगाने की पहल करें. अन्यथा मनुष्येतर प्राणियों एवं वनस्पतियों के विलुप्ति की प्रक्रिया कहीं मनुष्य के अस्तित्व के लिए प्रश्न चिन्ह न लगा दे.

I003

Bioprospection of Traditionally used Medicinal Plants

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Abstract

India is a mega-biodiversity rich country and has varied climatic ones comprising approximately 17000-18000 species of flowering plants of which 6000-7000 are estimated to have medicinal usage in folk practices. In India, around 25,000 effective plant-based formulations are used in traditional and folk medicine and the country enjoys an important position in the global pharmaceuticals sector. Form ancient times, people are known to use the traditional medicinal plant Materia medica and their bioactive compounds for health care purposes. Basically, the medical formulations are developed from different plant parts or their synthetic analogs together with their folklore systems. According to World Health Organization report, more than 80 percent of world's population depend on plant based medicines for their health care needs. The traditionally used medicinal plants have a large range of therapeutic properties, inhibiting growth of pathogens or kill them without causing toxicity to the host cells Due to immense use of allopathic and synthetic antimicrobial drugs, microbes have developed resistance to different antibiotics Herbal extracts and preparation from medicinal plants had come across its journey from the very beginning of the 20th century. Recently, scientists are focusing to develop modern medicines based on the purified active ingredients through modern chemical and biological technologies. Traditionally used medicinal plants are still recognized as common practice for cure of different diseases. Their disease curing ability is attributed to presence of different phytochemicals including alkaloids, flavonoids, and terpenoids. Traditional knowledge offers the source of new drugs developments from plants. Due to recent developments in gene technologies, many biotechnologically rich but biodiversity poor countries are involved in the act of biopiracy by illegally patenting the traditional knowledge of other countries. Hence, there is urgent need of bioprospection of traditionally used medicinal plants in order to have sovereign right on biodiversity.

I004

Role of Biodiversity in Sustainable Agroecosystem

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Abstract

Microorganisms are everywhere, these are found in the air we breathe, in the food we eat and even within our own body. In fact, we come in contact with countless number of microorganisms every day. because microorganisms affect our everyday lives. These microbes play an important role in agriculture as a result of their ability to provide nutrition to the plants. The umbrella of microbial technology in agriculture covers numerous scientific activities ranging from production of biofertilizers to that of microbial pesticides, from biological nitrogen fixation to lignocellulose degradation, from production of biomass and biofuels to transgenic plants.

Sustainability refers to productive performance of a system over time. It implies use of natural resources to meet the present needs. Without jeopardizing the future potential, A sustainable system must be substantial both ecologically and economically, most soils of tropics are low in inherent fertility, currently there is considerable resistance against the use of chemical pesticides and fertilizers. Because of their hazardous influence on the environment and on soil, plants, animals and human health. Hence the current day emphasis is on the use of organic inputs including microbial inoculants which play an important role in the sustainable agriculture.

I005

Conservation of Ecosystem Biodiversity for Sustainable Socioeconomic Development

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Abstract

Biodiversity refers the variability among living organisms and ecological community of which they are integral part, essential for sustainable development and in the long run for human well being as biodiversity provides food, fibre, water more important resilience to climate change, provide jobs in agriculture, forestry and other nature dependent sectors and offer health for humans. Further the term sustainability is derived from the Latin word 'sustinere' meaning 'to hold up' means the ability to maintain at a certain rate or level over a long period of time. The discussion of the environmental dimension of sustainability is often focused around prevailing local and global issues such as climate change, loss of biodiversity, environmental degradation, biogeochemical cycles specially nitrogen and phosphorus and pollution specially drastic plastic pollution.

WCED (World Commission on Environment and Development) defines the concept of sustainable development as development that meets the needs of the present without compromising the ability of future generation to meet their own needs. Our exemplary people president Dr.A.P.J.Abdul Kalam truly stated regarding sustainable development as "it does not imply absolute limits to growth and it is not a new name of a environmental protection instead the concept leads a unique meaning to development and sets an integrated target for the measurement of development which has a combination of parameters including economic status, poverty, education, health, women empowerment, harmony, physical connectivity and environmental aspects." This vital concept involves the protection of natural, anthropogenic and human capital resources for future generations too. Society, environment and economy are the three pillars on which sustainable development blooms. People, their living environment and economic development are interrelated thus interdependent and any sort of disturbance between these aspects can create awful situations which are noticed at many places in the present world. Ecosystems provide food, fresh air, shelter, business, growth and inturn development. Every part of ecosystem bears its paramount significance as if soil is required for growing food, water for drinking and agriculture, air for survival then, equally significant is waste disposal and its biodegradation, maintenance of balance in vital biogeochemical cycles. It is very apparent that we cannot survive in an isolated system and very much dependent on environment for our existence. Any disturbance in the existing natural balance by anthropogenic activities, lead to pathetic consequences which pose serious threats to the existence of living beings. Stability and success of any society dependent on healthy and productive population. Therefore understanding the role of each ecosystem component is necessary for sustainable development and long term stability of the economy and environment are the principal objectives of sustainable development which can be well earned by integrating and accepting all the intertwined aspects related to environment, society and economy.It should be kept in notice that present scenario of change in the environmental conditions and

natural resources due to over exploitation has led to headstrong need of taking initiatives at global level with co-ordination and co-operation to halt the deterioration of environment and its resources.

I006

Health priorities in current scenario

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Abstract

Survival of any organism, particularly depends upon some basic things, such as food and shelter. Later clothes were added. These three commodities are largely governed by money. Therefore, in order to earn adequate money to meet these basic needs, service and business sectors developed. In light of the increasing the money, the list of basic needs also grew at an alarming rate. This inspired the human to earn more and more. People engaged themselves in more and more earnings at the cost of their health.

As per present scenario of the society large number of people are suffering from BP, diabetes, cardio problems and many more. Also, large casualties are also due to these types of hidden occupational health hazards. It is demand of the time to be alert and to educate oneself for the causes, consequences and remedial measure of these problems.

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H026	अथर्ववेद में विद्यमान पर्यावरणीय संवेदन"ाीलता
H027	जैव–विविधता एवं पर्यावरणीय सतत विकास

E001

Diversity And Environmental Sustainability in Education

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Abstract

Diversity plays an important role in human life and life style. It is more essential for human being to grow, to get ideas, to creativity, critical thinking and to make learning environments. Diversity is generally understood to encompass race, ethnicity, class, gender, age, and political and religious beliefs. And while in the past it has focused on strengthening inter-cultural tolerance and inclusion have developed, shifting the focus towards enriching human learning and experience, so-called 'unity in diversity.' Diversity in and out of the classroom will continue to grow, so it's essential for teachers who prepare students to adapt to an evolving world and embrace those different from themselves. Diverse study environments also drive creativity when interpreting and using knowledge, data and facts. Group activities with diverse group members helps create a positive atmosphere and group dynamic for creative and collaborative learning. Bringing diverse students together helps with critical thinking or problem-solving**.** Diverse classrooms help develop tolerance and a greater sense of security when in environments with other foreign cultures present. It also helps students learn about other languages and cultures, encouraging them to be interculturally sensitive. Teachers will have to learn how to create positive classroom environments and can serve as a foundation for understanding how to promote diversity in your classroom. The recognition of education as a tool to increase knowledge and awareness about biodiversity is not only acknowledged. Environmental Education (EE) and Education for Sustainable Development (ESD) were both established as strategies to address environmental concerns through education, although each emerged at different times and from different contexts. How is to control diversity in school system as sustainably. It may be challengeable but gainful for all humans in the whole world.

Keywords: *Diversity, environments, Unity in Diversity, Sustainable.*

E002

Green Hydrogen for Environmental Sustainability

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Abstract

Solar and hydrogen energy are non-conventional energy sources that will be available for ever. The reduction of traditional energy sources is one of the major sources of concern for all of us. The rate at which fossil fuels are consumed exceeds the rate at which they are produced by nature. As a result, there will be a global shortage of motor fuel, causing a slew

of problems in the transportation sector. The other component is the pollution produced to our environment by these sources, which increases as more of these sources are used, resulting in a low quality of life on this planet. There is a continuing hunt for alternative fuels to overcome energy shortages and offer us with clean energy. As a result, hydrogen is the most frequently cited source, as it provides a clean kind of energy when burned in the air. Green hydrogen is emerging as a critical component in achieving energy transition and securing a long-term future. The lower cost of manufacturing green hydrogen using renewable sources, along with a need to reduce greenhouse gas emissions, has given clean hydrogen a boost never seen before. Low-carbon hydrogen has the potential to be a valuable source of clean energy in the fight against global climate change and poor air quality. In numerous sectors, such as transportation, shipping, global energy markets, and industrial sectors, a hydrogen-based economy can be a huge potential for a country like India. However, large-scale hydrogen production costs, infrastructure investments, bulk storage, transport & distribution, safety considerations, and matching supply-demand uncertainty remain impediments to the implementation of a hydrogen-based economy. Hydrogen is already being used as the preferred fuel for space missions all over the world. It will be used to power aircraft vehicles and give energy and portable water to the international space station's inhabitants. The conference will discuss and demonstrate hydrogen storage and applications in the current energy landscape. In this paper, I undertake a parametric analysis to look at the consequences of hydrogen energy use on global stability and sustainability. In order to calculate the hydrogen energy-based sustainability ratio, the previously created green energy-based sustainability ratio is adjusted to provide a new parameter, namely the hydrogen energy utilization ratio through non-fossil fuels. We use actual historical data from major sources to establish the significance of hydrogen energy in achieving sustainability and create some future estimates as a hydrogen economy road plan.

Keywords: *Hydrogen Energy, Environmental Sustainability, Hydrogen based economy, Green hydrogen.*

E003

Biodiversity and Water management in India

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Abstract

Water is a very useful resource for life on the earth and it is useful to humans. It is important because it is needed for life to exist. It is an ecosystem service; Biodiversity can play an important function in cleaning of water and to maintain properties of it. When water passes through lakes, wetlands and streams, it often encounters different species of fungi and bacteria. In the present studies we will discuss about the role of Biodiversity in water management in India.

Keywords: *Biodiversity, natural resources, Ecosystem.*

E004

Carbon Nanomaterials Implications for Sustainable Agriculture Production

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Abstract

The use of carbon nanomaterials in agriculture has sparked a lot of attention. However, previous research shows that carbon nanomaterials have a variety of effects on plants, ranging from increased crop output to acute cytotoxicity and genetic modification. Soil microbial populations influence soil quality directly through processes like nutrient cycling, organic matter decomposition, and symbiotic connections with terrestrial plant species. As a result, protecting soil microbial biomass and diversity is a critical agricultural concern. The interaction of carbon nanomaterials with the soil microbial population is currently poorly understood. Organic substances and/or poisons' toxicity may be increased or decreased by carbon nanomaterials. Fullerene, carbon nanotubes, carbon nanodots, carbon nanohorns, and graphene interact with plants in order to provide specific information on their effects on plant growth and productivity. The benefits and drawbacks of several carbon-based nanomaterials are studied. In several cereals and horticultural crops, carbon nanofertilizers have been proven to boost seed germination, seedling growth, shoot-root length enhancement, chlorophyll content and photosynthetic rate enhancement, and plant biomass increment. The movement of carbon-based nanoparticles in plants is depicted, as well as how their accumulation produces phytotoxicity. The potential of carbon nanoparticles in agriculture for commercial production of nanocarbon as fertilizer is also highlighted. After a specific high concentration level, several carbon-based nanomaterials displayed phytotoxicity, however more research is needed to determine the optimal threshold concentration for each crop-carbon nanomaterial model for maximal growth and production.

Keywords: *Nanocarbon, Fullerene, Nanofertilizer, Carbon nanodots, Graphene.*

E005

Graphene Oxide: Carrier for Slow Release of Plant Micronutrients

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Abstract

Novel materials offer opportunities to develop new types of fertilizers which could potentially increase efficiency of nutrient use in agriculture. Slow-release fertilizers can be more effective than traditional nutrient sources and simultaneously reduce negative impacts of nutrients to the environment. Two-dimensional ultra-thin carbon nanomaterial e.g., graphene with high mechanical strength, excellent conductivity and high surface area is being utilized for various applications, including field effect transistors, sensors, transparent electrodes, batteries, supercapacitors, composited materials and agriculture. The graphene sheets were prepared by chemical method contains various oxygen functionalities such as carboxylic, epoxide and hydroxyl groups. The slow- release fertilizer consists of graphene oxide (GO) and fertilizer material, wherein the fertilizer material may be a primary nutrient, macronutrient or micronutrient, such as copper (Cu) and zinc (Zn), in which the nutrients are efficiently bonded with the functional groups at the surface and sides of the GO sheets due to their affinity to the unpaired oxygen atoms in the GO. The prepared Cu-graphene oxide (Cu-GO) and Zn-graphene oxide (Zn-GO) fertilizers showed a biphasic dissolution behaviour compared to commercial zinc sulphate ($ZnS0_4$) and copper sulphate ($CuS0_4$) fertilizer granules, showing both fast- and slow-release micronutrient release.

E006

Destruction of ecological diversity by humanity

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Abstract

Humanity has taken for granted the world as designed by nature and has exploited it in such a way and to such an extent that human society cannot endure for long time. People within a community compete with one another for the goods and services of nature. In turn, each community competes with every other community within a society and each society competes with every other society for the same goods and services. In that competition, each community within a society has become so needy and so specialized in the materialistic sense that today we live in a global collection of competing societies, which stands like a house of cards. If one major society falls, the ripples of collapse are felt throughout the world, at times with stunning rapidity. The day must therefore arrive, the citizens of this planet come to understand that if local communities and their societies are to survive, we must set aside our historic, exploitative, environmental competition and begin instead to co-operate and to co-ordinate with one another.

Only then will planet Earth be adaptable two changes brought by the hand of humanity. Diversity is the outcome of relationships and all we as humans do in life is practice relationship. Therefore, if we, you and I to change anything for the better, we must work constructively and purposefully with other people at our respective local levels because that is where we have the most intimate living relationships with one another and our environment.

Keywords: *Community, Competition.*

E007

Environment Impact Assessment and Sustainable Development

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Abstract

The present era of fast development and growth is aimed at raising the quality of human life by providing greater opportunities for employment, better provisions of basic amenities and comforts. The analysis of any possible change in the environmental quality caused by developmental projects of government or a private company is called Environmental Impact Assessment (EIA). Earlier, when a developmental project was to be started only two considerations were kept in mind by the policy makers and the project executioners. These considerations were: -

1- The project should be technically feasible, and,
2- The project should give maximum economic return.

If these two considerations were fulfilled a green signal was given by the planners.

But keeping in view the concept of sustainable development new dimensions were added to the list of factors for deciding the fate of the project. The evaluation report should now have these aspects-

- Is the project sustainable?
- What are minimal short-term and long-term effects on the environment?
- Suggested safeguards against those activities that may have adverse effects on the environment.

In short, the Environment Impact Assessment evaluates the beneficial and adverse effects of the developmental projects before it is initiated. Further, for achieving the goals of the real improvement in the quality of human life development should be based on sustainability principles. Thus, sustainable development aims at growth with judicious use of resources and causing minimum damage to the environment. In India the gazette notification on Environment Impact Assessment was issued in 1994 vide which the ministry of Environment and forests proponents to have Environment Impact Assessment and prepare an Environmental Impact Statement prior to clearance of the project.While preparing Environmental Impact Statement-Effects on land, deforestation and compensatory afforestation, air pollution, water pollution, loss of flora and fauna, socio-economic impacts including displacement, risk analysis disaster management, recycling and reduction of waste. These things are usually Incorporated. Environment Impact Assessment is done with an aim to select the best alternative through which adverse impact on the environment can be nullified or minimized without compromising with the economic and social benefits of developmental projects these alternatives are considered: -

- Alternate technologies
- Alternate controlling mechanism
- Alternate Phasing
- Alternate site

Thus, the main purpose of Environment Impact Assessment is precisely to estimate the type and level of damage caused to natural environment in a well-defined time scale so that the remedial measures can be initiated on those aspects requiring action in the right time.

Some of the important measures for sustainable development are Reduce, reuse recycle approach, promoting environmental awareness, resources utilization as per the carrying capacity improving quality of life. Some of the means suggested to inculcate public awareness in favour of sustainable environment. Thai is rallies from schools and colleges, leaflets, pamphlets and literatures in local languages, seminars at district, state and national level should be arranged regularly. Although much of these efforts have been made more are still being made but their continuance with increased frequency is yet desired.

E008

Appearance of "refractory cycle" in the field of animal husbandry in twentieth century India

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Abstract

Animal count data indicate a refractory cycle. The number of animals within any district is dependent on the demand for bullocks and is driven by them. The worse the conditions of animal husbandry, more will be the tendency to rear them in large numbers. Fertility of cows decreases. The size of their calf becomes small, due to which the farmers are not satisfied. So they breed more and more animals to get useful bulls. As numbers increase or better grazing lands are encroached upon for cultivation, there is a shortage of cows. This puts pressure on the available food supply and leads to a situation where cows, bulls or buffaloes have to be brought from other provinces to help in farming. Such a situation had come in Bengal. How will the cows of that province be compared to those in a reasonably controlled herd? It won't be that easy either. Animals are small in size and are born in large numbers. The speed at which conditions go from bad to worse for the breeding of the best livestock is further accelerated. From this it should not be assumed that the amount of food needed for a hundred small animals will be the same for 50 animals of twice the size. As animals become smaller in size, the amount of manure required increases in proportion to their size. Therefore, if a certain quantity of fodder is arranged for one year for one hundred animals per 100 percent weight weight, then the same fodder will be sufficient for about 8 months for 200 animals per 5 constant weight weight. Therefore, where the supply of manure decreases during certain seasons of the year, a large number of small animals prove to be a serious sucker of any country, as seen in India. This series is still continuing. Such a large animal population has been acquired in India that in many places the size of animals is so small that the task of reversing the process of decline in their size and improving livestock in this country has become even more difficult. But the improvement of livestock depends to some degree on the prosperity of agriculture. This fact is poorly understood in India and there is a serious challenge to be faced.

E009

Effect of polymeric electrode on clarification of cane juice: An ecofriendly and economic beneficial method

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Abstract

Clarification is the primary step of sugar manufacture. This clarification process includes removal of possible non sugar constituents such as colloids, organic and inorganic salts and coloring matters such as polyphenol from cane juice. This method of clarification plays a very important role because it contributes to the quantity and quality of sugar produced by way of reduction of losses and therefore is closely associated with economic benefits of factory. In the present work the authors have made efforts to clarify the cane juice by electrolysis. The earlier electrolytic clarification methods involving Iron, Copper, graphite electrodes have many limitations. Thus, cane juice was electrolyzed by using polypyrrole coated graphite electrodes and various physico-chemical clarification parameters were studied at regular interval of time as well as different potentials. The process requires no chemicals for the removal of impurity from cane juice and therefore the process is said to be an ecofriendly technique. Use of polypyrrole coating eliminated the chance of passage of additional inorganic impurities, due to corrosion of electrode.

Key words: *electrolysis, clarification, purity, color removal, polypyrrole, ecofriendly process.*

E010

Visible-light-mediated synthesis of (*E*)-vinyl thiocyanates via decarboxylation of cinnamic acids

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Abstract

A simple and efficient approach to the synthesis of vinyl thiocyanates from decarboxylative cross-coupling reaction of cinnamic acids with KSCN under the synergistic interactions of visible light irradiation, Rose Bengal as the photocatalyst, Cs_2CO_3, and air as the terminal oxidant at room temperature has been developed. The reaction takes place by a radical pathway as evidenced from our experiments and literature. The established protocol, in contrast with the conventional methods, relies on the use of an inexpensive and readily available organic dye, Rose Bengal as the photocatalyst and air as the terminal oxidant. Moreover, this method provides a straightforward and novel process for the construction of vinyl thiocyanates from cinnamic acid, employs environmentally benign and inexpensive starting materials and is characterized by easily removable by-product CO_2.

Keywords: *Visible light, Photoredox catalysis, C-S coupling, Radicals, Green Synthesis.*

E011

Environmental Education and Sustainable Development towards Developing Awareness

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Abstract

The sustainable development has emerged due to overexploitation of resources as well as due to mismanagement of technology. The aspects which require monitoring of sustainability include climatic change, biodiversity, disposal of hazardous and toxic wastes, and disposal of pollution generating industries and food and ecological security. The deterioration in the ecological base in various countries in spatio-temporal terms due to irrational management of the resource and environmental systems having damaging repercussions are reflective of unsustainable policy frame and planning strategies followed so far. The environmental problems are multidimensional and varied in nature in developed and developing countries. There are global problems which have had their impact throughout the world. On the other hand, every country has its own development as well as environmental problems. The problems created by technology transfer from developed countries to third world countries have become a cause of environmental degradation.

Sustainable development is the need of the present time not only for the survival of mankind but also for its future protection. On the political and economic levels, it will involve, among other things, the overhauling of development and trade practices which tend to destroy the environment, and the encouragement of sustainable practices through fiscal and legal controls and incentives. On the social level, it will involve a renewed thrust towards universal primary education and health care with particular education and social liberation of women. On the environmental level, we are talking about afforestation projects, organic farming, biopest control and the vigorous protection of biodiversity.

The international community is serious about achieving even a modest degree of global environmental sustainability and sustainable development. Effective policies must be implemented to curb consumption by the affluent. We need moral education to instill genuine environment respecting moral values in the young budding engineers and other specialized area students who, in their professional careers as planners, designers, builders and decision makers, will bear considerable responsibility for mankind's impact on nature and the natural environment. Conventional engineering education is no longer adequate for the real needs of tomorrow. Future engineers must acquire knowledge and skills in engineering and keep pace with rapid advances in practically all branches of engineering and other areas too.

Thus, for a worldwide sustainable growth, there is a need for effective environmental education. There has been an eternal debate on the mode of environmental education treatment in schools. While a few curriculum planners advocate an infusion model others insist on transaction environmental education as a separate subject in the schools. There are arguments and counter arguments with regard to both schools of thought. What is of greater importance is how environmental education is taught? What are the transactional strategies that have to be followed to make it effective so that it sensitizes and motivates desirable action by the students? In this direction, orienting teachers, designing suitable, pragmatic activities that are regional and local specific are the urgent need. In this exercise, NCERT has initiated several levels of interaction with various educational functionaries such as administrators, curriculum planners, teacher educators and teachers.

E012

Antifungal Properties of Essential Oils against Dermatomycoses

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Abstract

Herbal medicines are being used by about 80% of the world population primarily in the developing countries for primary health care. They have stood the test of time for their safety, efficacy, cultural acceptability and lesser side effects. Thus, plant products (essential oils) found successful during in vivo investigation may be exploited as indigenous, biodegradable, Eco-friendly, nontoxic, natural antifungal agent for control of superficial mycosis. Key words: Acceptability, Essential Oils, Antifungal, Mycosis.

E013

Cr(VI) Removal from dead biomass of *Mucor rouxii*

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Abstract

Dead biomass of *Mucor rouxii* has been used for the removal of Cr(VI). The effects of different parameters such as contact time, adsorbate concentration, pH of the medium and temperature were investigated and maximum uptake of Cr(VI) was 313.75 mg g^{-1} at pH 2.0, initial Cr(VI) concentration of 200 mg L^{-1}, and temperature of 40^0C. Effect of pH showed that adsorbent was not only removing Cr(VI) from aqueous solution but also reducing toxic Cr(VI) into less toxic Cr(III). The sorption kinetics was tested with first order reversible, pseudo-first order and pseudo second order reaction and it was found that Cr(VI) uptake process followed the pseudo-second order rate expression. Different thermodynamic parameters viz., changes in standard free energy, enthalpy and entropy have also been evaluated and it has been found that the reaction was feasible, spontaneous and endothermic in nature. The Langmuir and Freundlich equations for describing sorption equilibrium were applied and it was found that the process was well described by Langmuir isotherm. Desorption studies was also carried out and found that complete desorption of Cr(VI) took place at pH of 9.5.

Keywords: *Adsorption, Cr(VI), Mucor rouxii, Endothermic, pseudo second order, isotherm.*

E014

Role of Mulching in sustainable development

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Abstract

Agriculture is the life line for human kind. Many efforts have been done for crop production not only in India but across the world. There are always certain challenges in agriculture such as how to reduce sun heat damage, suppress weed growth, retain moisture during summer so that soil stay cooler and plant root does not stress from sun heat, insulate crop from excessive heat and increase soil nutrient. The solution of above challenges are mulching. The mulches may be organic such as leaves, gross chipping, peat moss, wood chips, bark chips, straw, pine straw, biodegradable mulch and cardboard/newspapers since earlier times. On emerging the synthetic materials, rubber and plastics also played very important role in mulching to cope up the problems. Polyethylene mulch is made up of polyethylene polymers. Polyethylene is used mainly for weed reduction, whereas polypropylene is used mainly on perennials. This mulch is placed on top of the soil and can be done by machine or hand with pegs to keep the mulch tight against the soil. This mulch can prevent soil erosion, reduce weeding, conserve soil moisture, and increase temperature of the soil. Ultimately this can reduce the amount of work a farmer may have to do, and the number of herbicides applied during the growing period. The black and clear mulches capture sunlight and warm the soil increasing the growth rate. White and other reflective colours will also warm the soil.

Key words: *Mulch. Biodegradable, Polythene.*

E015

Organocatalytic mediated sustainable approach: A versatile new L-valine activated synthesis of diverse and densely functionalized 2-amino-3-cyano-4H-pyrans

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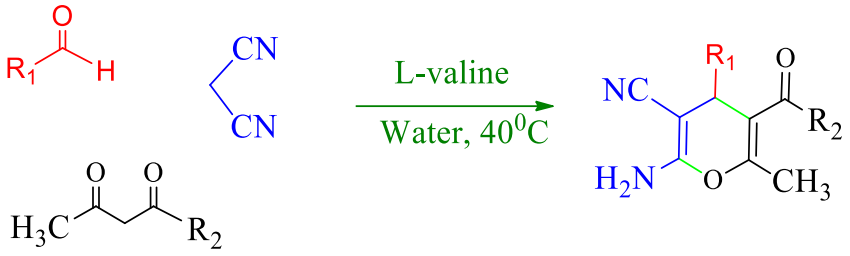
Abstract

The discovery of a new L-valine promoted facile and versatile green synthesis of diversified 2-amino-3-cyano-4H-pyrans using a one pot multicomponent-tandem reaction of aromatic aldehydes, malononitrile and diverse electron-rich enolizable carbonyl compounds is described. To the best of our knowledge this is the first report on the use of native L-valine as a catalyst in organic synthesis. Environment friendly, mild reaction conditions, use of easily available inexpensive starting materials, short reaction time, excellent yields, high atom economy and recyclability of organocatalyst are the major advantages of the disclosed protocol.



Keywords**:** *L- valine, Multicomponent, environmentally benign synthesis, 2-amino-3 cyano-4H-pyrans, Water.*

E016

Environment friendly green synthesis of silver nanoparticles AgNPs with the help of aqueous extract of *Artemisia annua* L. leaf.

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Abstract

As a result of global difficulties related with environmental concerns, 'green' environment friendly methods in chemistry and chemical technologies are becoming increasingly popular and greatly required. Silver is one of the most commercialized nanomaterials, with annual output of 500 tons of silver nanoparticles expected to rise in the upcoming years. It has been recognized to have powerful inhibitory and bactericidal effects, as well as anti-fungal, anti-inflammatory, and anti-angiogenesis activities, in addition to its substantial involvement in the field of high sensitivity biomolecular detection, catalysis, biosensors, and medicine. Unfortunately, many nanoparticle synthesis processes use hazardous chemicals or high energy requirements which are time consuming and involve costly time-consuming purification process. Greener nanoparticle syntheses are also superior to previous approaches because they are simple, one-step, cost-effective, environment friendly, and relatively repeatable, and they often result in more stable compounds. Our finding suggests that aqueous solution of *Artemisia annua* have potential to reduce Ag+ to AgNPs with the help of bioactive compound present. This was confirmed by UV-Vis Spectrophotometer, FTIR, EDAX, and TEM. This will open a new gateway for synthesis of AgNPs. and later we will check its implication.

.

Keywords: *Eco friendly, green synthesis, Artemisia annua, silver nanoparticles.*

E017

Education for sustainable development

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Abstract

Education for Sustainable Development (ESD) creates and upgrades knowledge, skills, values and attitudes for promoting awareness about different issues related to global environmental crisis. ESD aims to build a balanced and sustainable world for all. It encompasses some priority areas of action strategic objectives and target groups. UNESCO developed a framework, ESD for 2030. In the framework, policies, teaching – learning environment, capacity development, transformation at the individual, social and technological levels, are the key areas. Policy makers, learners, educators, parents and communities can play important roles for sustainable development. Ultimately it brings structural and functional changes among individuals and communities for a sustainable future.

Keywords: *ESD, UNESCO, Structural and functional changes*

E018

Effect of sheath blight disease on chlorophyll content in corn plant

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Abstract

The primary objectives of this study are to evaluate/influence the composition of corn chlorophyll and to establish a possible correlation between the extracted photosynthetic pigments. Chlorophyll content is very beneficial for their agro-economically important growth. The goal of this study was to determine the relationship between chlorophyll levels and spectral measurements in a corn (*zea-mays*) crop. In a field experiment, spectral measurements were observed and the chlorophyll content of leaf samples was noted. The total chlorophyll in the leaves was measured. Spectral response measurements are an important alternative for identifying plant status in order to make decisions on input applications and to monitor crop status. Chlorophyll is a pigment that has a significant impact on the environment. Nitrogen is an important component of chlorophyll and is required for photosynthesis. Chlorophyll content is an important alternative for making nitrogen supply decisions for crops, which is critical in agriculture. Nitrogen is one of the most important nutrients in agriculture because of the role it plays in growth and crop production, as well as the amount required by plants. It is also a basic component of plant and animal proteins, as well as the genetic materials DNA and RNA, and is essential during periods of rapid plant growth. Nitrogen applications account for a significant portion of agricultural production costs; thus, decisions about application rate, time, and source are critical to agricultural competitiveness and sustainability. At the moment, N and /or

estimates of chlorophyll are beneficial in a variety of applications, including precision agriculture and the global carbon cycle.

Keywords: *Chlorophyll, Sheath blight disease, Zea mays, Nitrogen.*

E019

Double Perovskite Materials for Photovoltaic Applications: Need for Sustainable Development

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Abstract

Solar power is the most plentiful and free available source for renewable and sustainable energy on Earth. In response to the demanding need to the development of efficient, low-cost photovoltaics (PVs) material to harness the solar power. The perovskite solar cells (PSCs) have recently developed as a potential disruptive PV technology. However, the state-of-the-art PSCs employ lead-based organic-inorganic halide perovskites as light absorbers, raising concerns regarding their chemical stability and the use of toxic element lead (Pb) that may be released into the environment. Therefore, it is of long-term practical importance to develop eco-friendly, stable, and efficient double perovskite materials for future PSCs that can eventually be commercialized and help in sustainable development. The discovery and development of new Pb-free perovskite light-absorber materials that are eco-friendly and stable has become an active research area in the field of photovoltaics (PVs). These perovskites are being considered for possibly replacing the Pb-based organic-inorganic halide perovskites in state-of-the-art perovskite solar cells. Moreover, discovery and development of these new double perovskite materials will have profound consequences on a broad range of opto-electronic applications, including, but not limited to, solar cells, light-emitting devices, lasers, photodetectors, and X-ray imaging.

Keywords: *Double perovskite, sustainable development, solar energy.*

E020

Germination studies on allelopathic effects of weeds on maize

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Abstract

A laboratory experiment was conducted to assess the effect of extracts of 20 weed species on germination and seedling growth of two varieties of maize (Zea mays L.), namely, Azad Uttarm and Amrit-1. The treatments consisted of 1, 2 and 5% extracts of leaf extracts and seedling growth was measured at 7 DAS. The data were analyzed statistically using critical difference at 5% level of significance. The results indicated inhibitory allelopathic effect on all

the test parameters taken into consideration viz., percent germination, root length and shoot length and such an effect was found to be extract concentration dependent.

Keywords: *Allelopathy, seed germination, weed, maize, interference, Extracts*

E021

Ethanomedicinal important plants of Sonbhadra region

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Abstract

Sonbhadra, The Energy Capital of India is the second largest district of Uttar Pradesh. It had been the centre of activities of pre-historic man which is evident from the rock paintings (pre-historic cave art) in the Valley of Son and Belan Rivers. The region has diverse in nature as northern part contain plateau of the Vindhya Range and is Belan, Rihand and Karmanasha rivers. The South part has the Kaimur Ranges and the valley of the Son River. The southern portion is hilly and fertile stream valleys. Sonbhadra has a relatively subtropical climate with high variation between summer and winter temperatures which gives moist deciduous forests and dry deciduous forest. About 36-40 percent of its geographical area is covered with dry mixed deciduous type of forest, which has several valuable tree species and medicinal plants. Several tree species are generally found scattered under traditional agro forestry system. These forest and tree become boon for the rural and tribal people of the area for common illness. Medicinal important plants are diverse in this region such as Acacia catechu (khair/ kattha) which help in Diarrhoea, sore throat, Skin diseases, Rheumatism etc. Aegle marmelos (Bel) used in diabetes, fruits act as astringent, used in diarrhoea, dysentery and piles. Paste of Albizia lebbeck (Shirish) bark is applied in mouth ulcers, used in cough and as antidote to snake bite. Leaf juice of it used to cure night blindness and also used as blood purifier and anti-inflammatory agent. Leaf juice of Anthocephalus cadamba (Kadamb) is used in stomach pain, wounds, fever. Leaf of Bauhinia purpurea (Gulabi Kachnar) is used in jaundice and its stem bark is used to cure wounds while flowers of Bauhinia variegate (Kachnar) are laxative and dried buds are used to cure diarrhea. Boswellia serrata (Salai) Resin is used in rheumatic and joint pain and in hair tonic. Its leaves are used in wound healing. Buchanania lanzan (Chironji) Seed oil is applied to glandular swellings of neck. Its Bark is used in diarrhoea stomach pain. Chironji leaves are valued for their tonic and cardiotonic properties and their powder is a common medicine for wounds. Butea monosperma (Dhak/palsh) Leaf juice is used in worm infestation and leucoderma. Its flower is used for eczema. Dalbergia sisso (Shesham) Leaves are used in liver disorder, jaundice and gonorrhea. Bark powder is used in bleeding piles and diarrhea. Cassia fistula (Amaltash) Flower paste is used in burns. Diospyros melanoxylon (Tendu) Root paste is used in scorpion sting. Flowers are used to cure leucorrhoea, Dysentery. Madhuca latifolia (Mahua) Flower is used in rheumatism. Alcohol obtained from flower is applied externally in body pain. Twigs are used in pyorrhea. Leaves ash mixed with butter/ghee is applied on burns and scalds. Terminalia arjuna (Arjun) bark is used in Dysentery, high blood pressure. So there are several variety of plants belonging to different families are used by tribal and rural peoples. The knowledge of medicinal value can strengthen our links to the natural world. The knowledge (Ethanobotany) help in learning of diverse plants and as well as understanding and interpreting the medicinal properties of plants.

E022

The effect of environmental issues in literature

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Abstract

During the last few decades, Environment has posed a great threat to human society as well as the mother earth. The extensive misuse of natural resources has left us at the brink of ditch. The rainforests are cut down, the fossil fuel is fast decreasing, the cycle of season is at disorder, ecological disaster is frequent now round the globe and our environment is at margin. Under these circumstances, there arose a new theory of reading nature writing during the last decade of the previous century called Ecocriticism. It is a worldwide emergent movement which came into existence as a reaction to man's anthropocentric attitude of dominating nature. The present paper seeks to explore the ecocritical perspectives as envisaged in some select world literature as well as Indian writing in English. This environmentally oriented study of literature brings about an ecological literacy among the readers who in the process become ecoconscious, thereby taking good care of Mother Nature. Environmental concern being one of the major concerns of the day, Ecocriticism has undergone rapid development during its short tenure since introduction. It is interpretive tool of analyzing nature writing which is commonly associated with Environmental criticism.

Keywords: *Environment, Literature, Ecocriticism, Development*

E023

Antioxidant efficacy of *Emblica officinalis* on diabetes

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Abstract

The present study was designed to investigate the concerted effect of *E. officinalis* on antioxidant enzymes and osmotic fragility of erythrocytes in normal as well as STZ induced diabetic animal models. The biochemical assays for measurement of different enzymes activities and estimation of total protein contents were conducted using standard protocols. The results revealed that the untreated diabetic rats were subjected to oxidative stress indicated by significantly diminished activities of free radical scavenging enzymes catalase (CAT) and superoxide dismutase (SOD) by 37.5%, ($p<0.001$) and 18.6%, ($p<0.01$) respectively. However, the *E. officinalis* seed extract treatment showed marked improvements in CAT and SOD activities by 47.09% ($p<0.001$) and 21.61% ($p<0.001$) respectively. The enhanced lipid peroxidation (LPO) by 30.87% ($p<0.001$) in erythrocytes of untreated diabetic rats was significantly accentuated in the extract treated animals by 23.72% ($p<0.001$). The increased erythrocytes osmotic fragility due to diabetes in terms of hemolysis recovered to the normal level in diabetic treated group. Thus, the findings suggest that the *E. officinalis* seed extract can be exploited for developing a potential agent of high antioxidant defense in the diabetic models.

Keywords: *Emblica officinalis, Erythrocytes, Diabetes, Oxidative stress, Osmotic Fragility.*

E024

Role of PRIs (Pannchyati Raj Institutions) to Achieve Sustainable Development Goals (SDGs) in Rural India

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Abstract

The Sustainable Development Goals (SDGs) are a new, universal set of goals, targets and indicators that 193 countries in the world have jointly set. The concept of SDGs was born at the United Nations Conference on Sustainable Development, Rio+20, in 2012. The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by the United Nations. They are included in a UN Resolution called the 2030 Agenda or what is colloquially known as Agenda 2030. The twin objectives of the panchayati raj system as envisaged by the Indian Constitution are to ensure local economic development and social justice. Panchayats will have a crucial role to play in achieving the SDGs. Panchayats are expected to play an effective role in the planning and implementation of functions related to 29 subjects enlisted in the Eleventh Schedule of the Constitution. Many SDG targets are within the purview of these subjects. The Ministry of Rural Development and the Ministry of Consumer Affairs are striving to bring about rapid sustainable development and socio-economic transformation in rural India with an integrated approach towards improving the quality of life of rural poor and ensuring effective people's participation. Any strategy for sustainable development must involve the people at all levels. For this, there is a need for revitalising panchayati raj institution. The panchayati raj institution can be recognised as a catalyst for participative planning and implementation of various development programmes especially sustainable development at grass-root level. People's participation in preserving the environment is important not only for today but also for future generation. There are crucial roles of panchayati raj and various governmental schemes launched in rural areas for preserving the natural resources like water, mountains, riverbeds, soil, sand and land etc., which are to be used by future generation too.

E025

Sustainable conservation of biodiversity in India

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Abstract

Biodiversity conservation, the practice of protecting and preserving the wealth and variety of species, habitats, ecosystems, and genetic diversity on the planet, is important for our health, wealth, food, fuel, and services we depend on. It plays an integral role in supporting many sectors of development. Conservation of biological diversity leads to conservation of essential ecological diversity to preserve the continuity of food chains. The genetic diversity of plants and animals is preserved. It ensures the sustainable utilization of life support systems on earth. It provides a vast knowledge of potential use to the scientific community. A reservoir of wild animals and plants is

preserved, thus enabling them to be introduced, if need be, in the surrounding areas. Biological diversity provides immediate benefits to the society such as recreation and tourism. Biodiversity conservation serves as an insurance policy for the future. Loss of biodiversity occurs when either the habitat essential for the survival of a species is destroyed, or particular species are destroyed. The former is more common as habitat destruction is a fallout of development. The latter reason is encountered when particular species are exploited for economical gain or hunted for sport or food. Extinction of species may also be due to environmental factors like ecological substitutions, biological factors and pathological causes which can be caused by nature or man.

E026

Genetic diversity and individual differences

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Abstract

Every person in this world differs from any other person, the cause behind this genetic diversity and an environmental condition. The product of a recombination of a genetic material during the inheritance process is a genetic diversity. It shifts with the passage of time and space. Individuals with distinct physical features and the ability to adapt to stress, diseases, and unfavorable environmental situations have a different genetic diversity. Environmental changes that are natural or due to a human intervention, lead to the natural selection and survival of the fittest. Hence, due to a genetic diversity, the varieties that are susceptible, die and the ones who can adapt to changes will survive. Maintaining distinct variations of genes that may be resistant to pests, diseases, or other situations is crucial for a healthy population. a genetic diversity reduces the occurrence of inherited traits that are undesirable.

In the period of conception genes have combined by many types, 16777216 combinations of chromosomes made in a time period of a conception. so that single parent's children have lots of changes, this is Law of a variation. The environment and heredity affect a multipliable form in development of human, if heredity is zero then good environment * 0=0, and if an environment is zero so good heredity cannot affect the development of human. lastly aim of a study by create a good environment and genetic diversity decrease abnormalities and develop the different abilities in human.

E027

Environmental sustainability: An outlook

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Abstract

As earth economizing and societies alter to minimize, mitigate, and balance their environmental influence and adjust for environmental sustainability. Industrial and corporate psychology includes a major function to recreate and a commitment to donate to organizational greening industries. In constructing our issue, we first define how financial movements,

organizations, and workplaces of today are in the depth of remarkable change in terms of their influences and connections with the realistic environment. To secure notional clearness, we then delineate environmental sustainability constructs that are applicable in work backgrounds and differentiate them from related ideas. We also supply an outline of psychological contributions to environmental sustainability and note that so far there is restricted psychological analysis and application. We complete this by explaining methods in which psychologists can donate.

E028

Technical approach towards sustainable development of society by mathematical modeling

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Abstract

Sustainable growth of the society is not the same as measure of living but is additionally affected with the attribute of life that unites factors such as grade of the surroundings (air, soil, and water), level of crime, the extent of drug misuse, availability of basic social services as well as religious and spiritual aspects of life. A good way to gauge how well a society is doing is by asking about sustainable development, welfare, and seeing if people are happy. A family or person in need can apply for assistance from a social welfare program like food stamps, Medicaid, Medicare, etc. Models describe our beliefs about how the world functions. In mathematical modeling, we translate those beliefs into the language of Mathematics. Whether the problem is huge or little, the process of interaction between the mathematical and the real world is the same. Real-world situations usually have so many facets that we can't take everything into account, so we decide which aspects are most important and keep those. At this time we have an idealized version of the real-world situation, which can then translate into mathematical terms and we have a mathematical model of the idealized question. We then apply our mathematical instincts and knowledge to the model and gain interesting insights such as approximation, theorems, and algorithms. We translate all these into real-world situations and we have a theory for the idealized question. Then we are interested to know: are the results practical, the answers reasonable, and the consequences acceptable? This entire process is what is called mathematical modeling. Mathematical models are used in various branches of science, technology, and society such as biological problems, Statistics, Numerical Computation, Economics, etc. which are highly related to several social welfares. Mathematical modeling is a modern approach to deal with the sustainable development of society.

Keywords: *Mathematical modeling, social welfare, Numerical methods, Sustainable Development.*

E029

Herbal immune-boosters: Substantial warriors of pandemic Covid-19

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Abstract

Current scenario depicts that world has been clenched by COVID-19 pandemic. Inevitably, public health and safety measures could be undertaken in order to dwindle the infection threat and mortality. Moreover, to overcome the global menace and drawing out world from moribund stage, there is an exigency for social distancing and quarantines. Since December, 2019, coronavirus, SARS-CoV-2 (COVID-19) have come into existence and up till now world is still in the state of shock. At this pointof time, COVID-19 has entered perilous phase, creating havoc among individuals, and this has been directly implied due to enhanced globalisation and ability of the virus to acclimatize at all conditions. The unabated transmission is due to lack of drugs, vaccines and therapeutics against this viral outbreak. But research is still underway to formulate the vaccines or drugs by this means, as scientific communities are continuously working to unravel the pharmacologically active compounds that mightoffer a new insight for curbing infections and pandemics. Therefore, the topical COVID-19 situation highlights an immediate need for effective therapeutics against SARS-CoV-2. Towards this effort, thepresent review discusses the vital concepts related to COVID-19, in terms of its origin, transmission, clinical aspects and diagnosis. However, here, the novel concept hitherto, ancient means of traditionalmedicines or herbal plants to beat this pandemic. The wonderful endeavours of entire clinical and pharmaceutical fraternity have successfully been able to produce vaccines against novel COVID disease. As of late, the Government of India has dispatched two effective vaccines Covishield and Covaxin to counter COVID-19. Health experts and professional, nonetheless, additionally exhort the importance of innate immune system for efficiency of vaccine. Agreeing the distressing health effects of COVID-19, numerous nations executed a widespread and severe non-drug intervention to moderatethe rate of contamination. Herbal preparations have consistently been focused on, among the few potential competitors, for further development of resistance. Use of herbs to improve the resistance stands more pertinent in Indian subcontinent where Ayurveda holds the foundations of clinical framework. Ayurvedic preparations have served as a cure for many deadly and contagious diseases since time and memorial. As recommended by Ministry of AYUSH, commonly used herbs have been selected for the study. These herbs are as follows: Garlic (*Allium sativum*), Dalchini (*Cinnamomum zeylanicun*), Lemon (*Citrus limon*), Coriander (*Coriandrum sativum*), Jeera (*Cuminum cyminum*), Turmeric (*Curcuma longa*), Mentha (*Mentha spp*.), Black pepper (*Piper nigrum*), Clove (*Syzygium aromaticum*), Ajwain (*Trachyspermum ammi*), Methi (*Trigonella foenum-graecum*), Ginger (*Zingiberofficinale*), Neem (*Azadirachta indica*), Amla (*Emblica officinalis*), Tulsi (*Osmium sanctum)*, Giloy (*Tinospora cordifolia*), Ashwagandha (*Withania somnifera*). The herbs selected for the survey are popular culinary herbs which are used in regular Indian cuisine and/or are practiced under Indian Ayurveda medicine. These medicinal herbs are most widely used as antioxidants, antiseptic, anti- carcinogenic, antibacterial, antiviral, antimalarial, anti-common flu, indigestion, edema, cough, immune boosters and immune-modulatory agents. Amla, Giloy, Neem, Kutki, Ashwagandha, Shilajit and Mentha have been known for their role as immune-modulatory, anti-inflammatory and antiviral agents. Considering the efficiency and

use of herbs by common people in their day-to-day life, a study was conducted through a general web-based survey among Indian adults regarding the awareness of herbsas important immune booster to fight against COVID-19 and to reduce its spread.

E030

Role of budget in socioeconomic environment

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Abstract

With the proclamation of the principles of strengthening independence and increasing the levelof sustainable development of different regions, the role of the budget as the main financial tool in the system of state regulation is increasing. Via the budget the state stirs up investmentsand innovations, stimulates economic and social development of territories, and ensures meeting public needs. The current research topicality is caused by the fact that a carefully studyof the budget nature, its functional properties make it possible to identify its capabilities and possibilities for organizing budget planning, which is the basis for ensuring efficient management of processes in the budget and other management areas. The work explores the budget functionality in connection to the stages of the budget process, determining the conditions and possibilities for the functioning and development of socio-economic systems. An assessment is made of the degree to which the budget functions are implemented: the content is revealed, the nature of their actions is determined from the point of view of efficiency of the budget functions. The research revealed that some budget functions did not reach the expected efficiency. The effect of the reproductive and regulatory functions of the budget in terms of, for example, changes in the structure of the economy is poorly expressed, which is confirmed by the continued leading role of the raw materials industry in the Arctic regions. The planning function aimed at achieving balanced budgets partially fulfils its purpose - it does not provide full coverage of expenses with budget revenues. The control function is not fully implemented at the stage of development and further implementation of tax tools.

E031

Histopathological Changes in Liver and Kidney of *Heteropneustes fossilis* (Bloch) on Chlorpyrifos Exposure

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Abstract

Aquatic organisms are inadvertently exposed to runoff water carrying pesticides and chemical fertilizers from agricultural land. Chlorpyrifos is one of the most commonly used organophosphate insecticides applied in agriculture for insect control. Effect of chlorpyrifos on kidney and liver in Heteropneustes fossilis (Bloch) was studied after exposing the fish for short term -24h, 48h, 72h and 96h. Healthy adult fish were exposed to sub-lethal concentration 1.56 mgL-1 (75% of 2.08 mgL-1 96h LC50). Histopathological changes in liver and kidney were examined at given time intervals after sacrificing fishes and tissue fixation followed by

histological examination of Haematoxylin and Eosin (H/E) stained sections of tissues under light microscope. Fishes exposed to chlorpyrifos exhibited histomorphological alterations in kidney and liver while fishes in control were normal with no observation of any damage in these organs. Liver cells in exposed fishes showed necrosis and vacuolization together with random observation of denucleated cells and eosinophilic material in the cytoplasm. In kidney necrotic lesions were observed with presence of pyknotic nuclei and dilation of renal tubules. In this study it was observed that chlorpyrifos was highly toxic for the fish Heteropneustes fossilis and has profound adverse effect of one of the most vital organs, the liver and kidney.

Keywords: Chlorpyrifos, *Heteropneustes fossilis*, histopathology, kidney, liver

E032

Greener approaches in organic synthesis for a sustainable future

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Abstract

Paul T. Anastas and John Warner (1998) coined the 12 classic principles of Green Chemistry, which contribute the sustainability of chemical reactions, energy economy, lesser toxicity of reagents and final products, decreasing the risk of global pollution and reuses of various waste materials. More over these principles give a keen attention for the planning of any synthetic routes for various materials to have greener approaches.

Since the human utility demands have been increased day by day, the industries fulfill it by enormously increasing its production units without any regulations hence causes uncontrolled environmental pollutions. This makes the environmental chemists of great concern; thus green chemistry was introduced to influence the chemical industries for better environmental sustainability. Over 20 years, green chemistry principles have influenced the organic chemists and so far, synthesis of organic compounds has been considered on waste prevention, safer solvents, design for high energy efficiency and use of renewable feed stocks. This short review, discusses the contemporary physicochemical process useful for the green synthesis and elaborate various green approaches which are useful for better understanding of green synthesis. A series of nanomaterials and nanoparticles of metals, nonmetals, quantum dots etc., are synthesizing with green approaches. On the same way the synthetic routes for other materials such as cement, ceramics, adsorbents, polymers, bioplastics etc., are improved with respect to the environment concern. Several non-classical methodologies e.g., microwave heating, ultrasound assisted, electromagnetic irradiated and hydrothermal processes or ball milling are important tool to promote green synthesis.

E033

Bio-Diversity: A recent study of Gorakhpur district (UP) with special reference to fishes and plants

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Abstract

The term Biodiversity refers to the variety of life forms, from genes to species to broader scale of ecosystems. This living wealth of earth is the outcome of millions of years of evolutionary history. Biodiversity has been viewed in many ways depending upon the perspectives of people. In many instances, it has also been referred to "life" or "wilderness". The distribution of biodiversity is uneven on the earth because of the different environmental conditions. Gorakhpur is a city along the banks of the Rapti river in the purvanchal region of the Indian states of Uttar Pradesh (lies at 26˚ 48`N and 82˚ 08E) and district of Maharajganj, Basti, Mau, Deoria and Sidharthnagar bounded it. People have since long used biological resources as source of medicine. 44 species of aromatic plants that belongs to 32 genera and 14 families of which may are being used in a day to medical therapy. Kushmi, Sohgibarwa and Anand Nagar (Maharajganj) forest areas are the main source of wood and non-timber in this area. A number of plant species have lost their habitat because of increased human interference like construction of roads, under pass (Kauwa Bagh and Nanda Nagar Railway crossing) across natural ecosystems. With reference to fresh water ecosystems, new government project (Naukabihar, Taramandal and over bridge construction near Maheshara Lake) has destroyed large habitat of hundreds of aquatic flora and fauna. Exotic species are harmful to our native plant communities. For example, *Lantana camara* introduced as an ornamental hedge has now become a serious invader of forests. Like this the freshwater Fish *Clarias garipines* introduced for better productivity but it become a problem of our natural aquatic bodies. Due to overexploitation by fish farmers presently only 47 species are available in Ramgarh lake in comparison to 87 fish species.

The concern of development planning is not only to manage land surface and soil profile for better nutrient supply to the plants and more beneficial distribution of limited water source but also to ensure Sustainable Livelihood Security (SLS). The right Government restrictions and policies such as Education, Protection of species and habitats, prevent overhunting and overfishing, prevent species invasion, Restriction on introduction of exotic species without adequate investigations can help in stopping the biodiversity loss.

E034

Role of sketching and paintings in environmental sustainability

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Abstract

Environmental art may be a vary of inventive practices. It is supply of inspiration and creation.It explores the inventive use of fine arts for students' environmental awareness. Art, together its forms, painting, sculpture, design, music, dance, literature, photography will activate the senses, stimulates and enrich students, experiences, develops their imagination and important thinking provides new ways in which of expressing emotions, perceptions and reflections, enhances their ability and develops their ability. In instructional programs, the educational useof art is for enhancing children's contact with the atmosphere helps children deepen their information and strengthen their relationship with it. Art considerably contributes to environmental awareness, because it cultivates through associate degree emotional approach the experience and therefore the development of a reference to atmosphere.

Artistic and inventive activities are necessary tools that facilitate the emotional affiliation between folks and places. The arts can contribute to the emotional engagement with the natural atmosphere and its protection. Inventive approaches will encourage children to explore and reflect. Art is extremely inventive means for children to attach with nature.

The involvement of sustainability thinking in art is massively increasing. There is a line of interaction between art and science that do not essentially take sustainability as their content inan ecological sense. Sustainable art will strive against a spread of forms looking on the materials used and therefore the purpose behind the piece. Sustainable practices and eco-friendly art have been distended upon recent years as society begins to become a lot of attentive to their impact on the environment and way forward for our planet. Whereas sustainability needs a reconsideration of however we tend to consume, manufacture and style art and objects. It also provides the opportunity for artists and designers to rethink their approach. Sustainable art blurs the line between science and design.

Keywords: *Art, Environmental education, environmental awareness, information production, sustainability science.*

E035

Occurrence of ecto-parasites in Indian major carp, *Catla catla* collected from river Rapti of district Shravasti and Balrampur

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Abstract

An investigation was made on the helminthes and crustacean ecto-parasites of Indian major carp, *Catla catla* collected from different sites of river Rapti of district Shravasti and Balrampur. A total of 250 host fishes were examined during the study period, of which 90 fishes were found infested by four genera of ecto-parasites. Among them two were helminthes i.e. *Dactylogyrus sp., Gyrodactylus sp.,* and two were crustacean i.e. *Lernaea* sp. and *Argulus* sp.. The infestation exhibited seasonal fluctuations, the maximum in pre-winter to winter and the minimum in the rainy season. Prevalence, intensity and abundance of the infestation were also found to be related on different length group of the host fishes, the smaller sized fishes were less infested, the medium sized fishes were more infested and while the larger fishes showed lesser infestation.

Keywords: *Catla catla,* River Rapti, Ecto-parasites.

E036

Eco-chemical and biorational approach in pest management

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Abstract

Food commodities like cereals, legumes, vegetables and spices are highly prone towards fungal and mycotoxin contamination due to their prolonged and inappropriate post-harvest storage. Fungal and mycotoxin contamination of food commodities leads towards their quantitative and qualitative losses that adversely affect their shelf life. Approximately 25% of the world agricultural products have been reported to be deteriorated due to fugal and mycotoxins contamination. Among all the mycotoxins aflatoxin B_1 (AFB_1) secreted by *Aspergillus flavus* is considered as more dangerous due to its hepatotoxic, teratogenic and immunosuppressive effects. In addition, international agency for research on cancer also recognized AFB_1 as Class 1 human carcinogen. Currently, ranges of synthetic preservatives (sorbic acid, benzoic acid, propionic acid) are successfully used to prevent molds and mycotoxins. However, their excessive use imposes hazardous effects on health and environment. In past few decades, plant based green chemicals including essential oils (EOs) and their bioactive compounds are gaining interest as a promising alternative to synthetic preservatives. Green preservatives are biodegradable, ecofriendly and nontoxic substances which are also categorized as Generally Recognized as Safe (GRAS) substances by U.S. Food and drug administration. The mechanistic investigation against *A. flavus* demonstrates

ergosterol, ion leakage and methylglyoxal as their targeting mode of action. In addition, newly emerged nanotechnology also boosted the efficacy of green preservatives. Therefore, EOs and its encapsulated form may be recommended as an eco-friendly, biorational plant-based preservative against fungal and AFB_1 contamination of stored food commodities.

Keywords: Essential oil; Ergosterol; Methylglyoxal; Aflatoxin

E037

Ecology, environment and folk lore: A retrospection of oral tradition

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Abstract

Folklore in the form of tales, sayings, songs, ballads, dances and oral music are the best record ofhuman behaviour towards nature. When man was not so much scientifically developed even thenwe preserved the idea of ecology through the celebration of relationship in the forms of different festivities. We respected the survival of each species and believed in their importance and their existence. With the advent of documented science and technology, we crossed those barriers. We started to call ourselves more rational and reasonable. I wouldn't go as far as to say that scienceis a threat to environment and ecology; However the humility and respect that we have had in folklore is hardly seen anywhere now. One might feel that the modern science may fill our mindsswith regret and reproach. Folklore can play a vital role in a more sensitive understanding of ecology and environment. The elements of fear, devotion and prayer are always present in various songs and other festivities of cultural traditions. People sang to bring rain, to get good crops and to achieve what not. Human life has been dependent on nature which has always been recorded in various forms of folklore. In Indian culture people assigned various trees with the names of Gods; They did the same with the animals, seas, winds and directions. Some may call itsuperstition or staunch faith; yet it shows the man and nature relationship which they symbolize.
The present paper will go through a few north Indian folkloric songs and stories to posit the ideaof ecological balance that selected songs and stories talk about.

Key Words: *Ecology, Environment, Folklore, Culture, Tradition, Myth and Science*

E038

Heusler Alloys: Novel Material for Photovoltaic Applications

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Abstract

Energies are basic need of living organism. One of these, electrical energy produces as per conventional ways, continuously diminishes. Sun is vital source of energy for a long time. Transformation of sunlight radiation into electrical energy by means of solar cells to replace or

augment their conventional energy sources. Currently Silicon crystal, Polymeric, Perovskites and Heusler Alloys solar cell employed for conversion of sunlight radiation into electrical energy. Silicon, Polymeric and Perovskite type based solar cell have its own restriction and limitation due to availability and toxicity. Comparatively Heusler alloys are mostly non-toxic, more efficient and cost effective. Solar cell invention has proved to be a promising and valuable source of energy. It is renewable, sustainable, reliable and truly clean energy.

Keywords: *Energy, Environment Impact, Solar Cell, Huesler Alloy, Sustainability.*

E039

Biodiversity and sustainability: A global concern

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Abstract

Over the last century, humans have come to dominate the planet, causing rapid ecosystem change and massive loss of biodiversity across the planet. While the Earth has always experienced changes and extinctions. Biodiversity has cultural value to humans as well, for spiritual or religious reasons for instance. Many basic needs humans obtain from biodiversity such as food, fuel, shelter, and medicine. Further, ecosystems provide crucial services such as pollination, seed dispersal, climate regulation, water purification, nutrient cycling, and control of agricultural pests. Biodiversity provides opportunities for indigenous and other communities to cultivate market niches based on traditional knowledge and livelihood practices. Indeed, biodiversity and the ecosystem processes in which it is implicated provide a host of services to people. In addition, biodiversity provides goods and services that underpin sustainable development. It supports the ecosystem functions essential for life on Earth, such as the provision of fresh water, soil conservation, and climate stability. Sustainability is the principle of intergenerational equity means need to preserve natural resource for the benefit of future generations. The principle of intragenerational equity means equitable use of natural resources which implies that use by one state must take in to account of the needs of other states. We have to recognize our own limits in claiming the fruits of the earth and in managing and manipulating nature. The lifestyle choices of individuals and communities can have a large effect on their impacts on biodiversity and the environment. By understanding threats to biodiversity, and how they play out in context, we can be best prepared to manage conservation challenges. The conservation efforts of the last decades have made a significant difference in the state of biodiversity today. Major direct threats to biodiversity include habitat loss and fragmentation, unsustainable resource use, invasive species, pollution, and global climate change. The underlying causes of biodiversity loss, such as a growing human population and overconsumption are often complex and stem from many interrelated factors. While we might not be able to prevent all negative human impacts on biodiversity, with knowledge we can work to change the direction and shape of our effects on the rest of life on Earth.The good news is that it is within our power to change our actions to help ensure the survival of species and the health and integrity of ecological system. Our planning and learning towards the future must be evaluated. We must distinguish – both in prospect and retrospect – between appropriate and inappropriate, successful and unsuccessful, good and bad, attempts to

assemble future social-ecologies. We may value biodiversity because of how it shapes who we are, our relationships to each other, and social norms. These relational values are part of peoples' individual or collective sense of wellbeing, responsibility for, and connection with the environment.

Keywords: *climate, human, impact, survival, equity.*

E040

Yoga Benefits and Environment

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Abstract

Yoga is often partially understood as being limited to asanas or poses, and its benefits are only perceived to be at the physical level. However, we fail to realize the immense benefits yoga offers in uniting the body, mind, and breath. When you are in harmony, the journey through life is calmer, happier and more fulfilling. So, if you are keen to lose weight, develop a strong and flexible body or being at peace, then yoga can help you achieve it all.

E041

Gum acacia-CuNp-silica hybrid: an effective, stable and recyclable catalyst for reduction of nitroarenes

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Abstract

A gum acacia –CuNP –Silica hybrid behaved as an effective catalyst for the sodium borohydride reduction of nitroarenes. The hybrid in combination with 0.1 M sodium borohydride was capable of reducing 4 –nitrophenol into 4-aminophenol within 2.3 minutes at room temperature. The reduction did not require any exclusion of oxygen or moisture. The catalyst retained its full activity even after one month storage under the laboratory conditions. It could be easily recycled for six repeated cycles with only marginal loss of catalytic activity. The conditions for borohydride reduction of 4 –nirtophenol have been optimized and under this condition the reduction of 4-nitroaniline and 4-nitrobenzoic acid was possible within 3.15 and 8.3 minutes respectively.

E042

Major Issues of Food Security in context of Biodiversity

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Abstract

"*Access to food is the birth right of every individual on this planet.*"

-Norman Borlaug

Food security is recognised as having four dimensions: Availability, Access, Utilization and Stability. All these dimensions of food security depend on biodiversity. Biodiversity is a measure of variation at the genetic, species and ecosystem level. It helps us to understand & measure the variability of Earth's plants, animals and micro-organism. Biodiversity's contributions in regarding food security can made more effective through the availability of a range of different species and of genetically diverse populations within species. Biodiversity is the basis of agriculture and our food system. As the number of species in any particular type of ecological system declines, that system can potentially lose its resilience. Farmers, Livestock keepers, forest dwellers and fisherfolk are managers and custodians of biodiversity.

Food insecurity can worsen diet quality and consequently increase the risk of various forms of malnutrition's, potentially leading to undernutrition as well as overweight and obesity. According to FAO& WHO,2020 report more than 690 million people (8.9% of world population) are affected by hunger and 2 billion people in the world did not have regular access to safe, nutrition's and sufficient food in 2019.

As we know that biodiversity is critical for safeguarding global food security, underpinning healthy and nutritious diets, improving rural livelihoods, and enhancing the resilience of people and communities. FAO Report suggests that the increasing loss of biodiversity for food and agriculture puts food security and nutrition at risk. Report further reveals that wild food species and many species that contribute to ecosystem services that are vital to food and agriculture, including pollinators, soil organisms and natural enemies of pests, are rapidly disappearing. Food security faces significant challenges due to population growth, poverty, globalization, climate change, and other factors. Supplying healthy food to all citizens is crucial for global development—to reach it, not only food production but also equitable access to food for all people must be improved substantially. Agricultural biodiversity is essential to satisfy basic human needs for food and livelihood security. The importance of agricultural biodiversity encompasses socio-cultural, economic and environmental elements. All domesticated crops and animals result from management of biodiversity which is constantly responding to new challenges to maintain and increase productivity under constantly varying conditions and population pressures.

Major issues of food security are directly correlated with biodiversity Hence, there should be a strong need to use biodiversity in a sustainable way so that we can better respond to rising challenges of climate change and produce food in a way that doesn't harm our environment.

Key words: *Biodiversity, Food Security, Ecosystem, Sustainability*

E043

Flyash reserves as a sustainable soil supplement in arable lands

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Abstract

Fly ash (FA) is a heterogeneous mixture of various elements that outcomes as a residual product after coal combustion. It emanates considerable soil pollution. FA's mismanaged dumping leads to deterioration of the surrounding ecosystem and affects the biodiversity. However, perusal of some reports clearly documents that FA in lesser concentration has soil modifying properties. This quality can be deployed in the arable lands. The beneficial edaphic properties of FA can be exploited in agriculture system with the aim of recycling this nutrient rich by-product with the prime motive of judicious reclamation of FA disposal sites. With this objective, following research was conducted on plant system *i.e.*, leguminous crop. For this, four graded concentration of Fly ash was prepared by mixing FA in pure soil; a control set was also evaluated as the standard. The experiment was conducted in five replicates each of the treated set and the control. Seeds of Guar were sown in the fly ash amended soil. Plants were observed for preliminary growth responses after emergence of cotyledons. Biochemical study was conducted on the plants. Morphological data was also recorded. Cytological study was also performed. These results concluded that FA has promising role in promoting plants growth. Based on this finding, it is proposed that FA utilization in arable lands should be motivated as soil supplements and this endeavor can prove instrumental for environmental sustainability.

Keywords: *Fly ash, Legume, germination percentage, survival percentage, biochemical study*

E044

Instrumentalizing diplomacy to tackle climate change: Assessing India's climate negotiation strategy

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Abstract

Problems without passports require counter-measures coordinated across borders to tackle them effectively. Climate change qualifies as a problem without a passport that cannot be tackled effectively by any state, irrespective of the power, prestige and wherewithal a state possesses. Therefore, diplomacy has emerged as a critical collective instrument to tackle the climate challenge. This paper seeks to figure out the contours of India's climate strategy and investigate the role of diplomacy in India's climate negotiation strategy. Based on the resources collected from official statements, issued a communique, press briefings, negotiators interviews, commitments made in the negotiations and measures adopted at home to fulfil the

obligations emanating from signed and rectified climate-related treaties and laws; this paper argues that India's climate strategy is based on four pillars namely fixing historic responsibility; assessing per capita carbon footprint, instead of calculating carbon emission at the national level; common but differentiated responsibilities in respective capabilities; and carbon shrinking. It concludes that although diplomacy is a linchpin instrument to tackle climate challenges, yet, it is not sufficient because domestic measures to support diplomatic endeavours is also important. In absence of fulfilling domestic obligations by signatory states, no international treaty can address the cause and tackle the challenges it sought to address.

Keywords: *Diplomacy, Ozone, Climate Politics, Kyoto Protocol, Peris Agreement.*

E045

Fabrication of conducting nanochannel using SHI in polymeric membrane for fuel cell and removal of radionuclides waste

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Abstract

Latent tracks in pure polymer and its nanohybrid are fabricated by irradiating swift heavy ions (SHI) (silver ions) having 140 MeV energy and through nanochannels of size ~80 nm are generated by selective etching of the amorphous path caused by the irradiation of SHI. Grafting is done within the nanochannels using the free radical arises from high energy radiation followed by tagging of ionic species convert the nanochannels exclusively highly ion conducting. The uniform dispersion of two-dimensional nanoparticle better controls the size and number density of the nanochannels and thereby converts them into effective membrane. The nanoparticle and functionalization induce the piezoelectric b-phase in the membrane. The functionalized membrane removes the radioactive nuclide like Am^{+3} (a-emitting source) efficiently (~80% or 0.35 $mg.cm^{-2}$) from its solution/waste. The confinement effect along with better retention of radionuclide in nanohybrid membrane is revealed from the kinetics of a-emission from different depth profile. Functionalized nanohybrid membrane acts as corrosion inhibitor (92% inhibition efficiency) together with its higher proton conduction (0.13 $S.m^{-1}$) ability. The higher ion exchange capacity, water uptake, ion conduction and high sorption by the nanohybrid membrane are explored from its extent of functionalization and control nanochannel dimension. Membrane electrode assembly has been fabricated to construct a complete fuel cell which exhibit superior power generation (power density of 45 mW/cm^2 at a current density of 298 mA/cm^2) much higher than the standard Nafion measured in a similar condition. Further, piezoelectric matrix along with its anticorrosive, high sorption characteristics and greater power generation make this class of materials as smart membrane widely used for many different applications.

Keywords: *Polymeric Membrane, Nanohybrid, Fuel cell, Radionuclides waste*

E046

Plant extracts utilizes as eco-friendly control agent of human pathogenic fungi, *Trichophyton* and *Microsporum*

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Abstract

It has been observed worldwide incidence of fungal infection and increases resistance to some species of fungi against different chemical fungicide used in medicinal practice in the past few decades. Most of antifungal used for the treatments of infections have many drawbacks like toxicity to both man and environment, efficacy and frequently used, lead to the emergence of resistant strains. Hence there is great demand to develop an antifungals agents acting selectively on targets without any side effect or with least side effects. Natural products like plant extracts or pure phytocompounds provide unlimited opportunities for new drug because of their having normally matchless chemical diversity. To examine *in vitro* antifungal potential of plant extracts essential oils, selected phytocompounds to determine the broad class of bioactive compounds behind their activity. The bioactive compounds were investigated for inti-fungal properties against two primary genera of human pathogenic fungi *Trichophyton* and *Microsporum.* Of all the selected essential oils tested, cinnamon and thyme were the most potent against the test pathogens. More study is necessary to understand the ways essential oils inhibit the growth of dermatophytes. Comprehensive research aimed at understanding the mechanism of action of essential oils and their components may provide the basis for a natural alternative to topical antifungal drugs.

Keywords: *dermatophytes, essential oils, antifungal, Microsporum and Trichophyton*

E047

Polymer based nanohybrids for sustainable energy harvesting applications

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Abstract

Electrospun poly (vinylidene fluoride) (PVDF)-Ionic liquid (IL) nanofibers is prepared through electrospinning technique at an optimized conditions with varying IL concentration. Addition of IL to the PVDF matrix leads to better electrostatic interactions which results in the better fiber quality as evident from the SEM micrographs. Development of good quality beadless fibers is due to the transformation of the non-polar part to piezo- active part which is clearly evident from the XRD and FTIR analysis. The change in melting temperature on addition of the IL suggests the development of the electroactive phase which supports the observation from structural analysis. The electrospun scaffold is then fabricated into a device to measure the electromechanical response of the prepared nanohybrids and pristine polymer. Maximum output voltage (peak-to-peak), maximum current and power density obtained for

nanohybrid P-IL-5 is around 48 V, 1.4 μA and 47 μW cm^{-2} respectively as compared to pristine PVDF (20.8 V, 0.06 μA and 21.2 μW cm^{-2}). The prepared device was able to produce considerable amount of output from different human motions which clearly explains the efficacy of the material prepared. The morphological, structural and electromechanical observations clarify the prepared materials as an efficient piezoelectric energy harvester.

E048

Intra-specific morphometric variation of *Zeldia tridentata* Allen and Noffsinger, 1972 (Nematoda: Cephalobidae) between Indian and other populations.

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Abstract

Zeldia tridentata is distinguished from other species of the genus by the presence of three teeth associated with each cheilorhabdion and the longer tail. This species is widely distributed throughout the world and has been collected from India, Jamaica, Philippine Islands, Srilanka, Taiwan, Thailand, Brazil and Venezuela. Most of the species of the genus were collected from the soil or sand around the root zone of different plants. The present population was also collected from the sandy soil, around the root zone of Guava and Cashew Nut plantations near Chilika Lake, Orissa.

The measurements and descriptions of specimens of present population agree well with the description of Type population of *Zeldia tridentata* Allen & Noffsinger, 1972. However differences from original population were found in the lateral fields (outer incisures crenated *vs* smooth). Rashid *et al.*, 1984, collected two females of this species from Itapebi, Lombardia, Brazil, (Host: *Theobroma cacao*) and they illustrate and redescribed the species with more details to the original description. In Brazilian population, cuticular punctations were not observed, however the punctations have been reported in the original descriptions and are distinctly visible in present population also. They also mentioned the ovary with a double flexure posterior to vulva but in Indian population the specimens without any flexure were also found along with the specimens having double flexure. In Brazilian population the phasmid lies at about 5-6 annules posterior to anus however, in present population phasmid lies just posterior to anus. The study unveiled the variations in the populations of *Z. tridentata* and suggest a detailed molecular study *to depict further variations amongst the populations of *Z. tridentata*.

E049

Prospects of wetland biodiversity in India

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Abstract

Wetlands are one of the most biologically diverse ecosystems having wide range of plants and animal species diversity.Wetland biodiversity in India accounts for 4.7% of total geographical area of this country. These wetlands provide numerous ecosystem goods and services and are important in supporting species diversity of that particular area. But in current scenario wetland biodiversity are under tremendous pressure. Some of the main reasons for wetlands biodiversity loss in India are subjected to anthropogenic pressure, Industry, households, overexploitation of catchment area, change in land use pattern, pollution, and speedy urbanization. Also there is no forecasted regulatory framework for conservation of wetland biodiversity in India. Future research for conservation of wetland biodiversity should focus on institutional factors influencing their condition.
KEY WORDS: Wetlands, conservation, Biodiversity

E050

Carbon-Carbon bond formation using Hypervalent iodine (HVI)

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Abstract

Historically, it has been evident that hypervalent iodine (HVI) has served tremendously in developing novel and extraordinary methodology for carbob-carbon bond formation. Du and Zhao *et al.* has used HVI for intramolecular aryl-aryl coupling for dearomatization /rearomatization. Chen group has discovered the benefits of using hypervalent iodine in photoredox reactions where azide was reduced under biocompatible conditions. The above example indicates the need of HVI for biocompatible C-C bond synthesis. Hence, the diverse reactivity of HVI reagents needs to use for the development very important carbon bond formation in organic chemistry via green methods. The development of hyper-valent iodine-guided electrophilic substitution, arylations using hyper-valent iodine, and photo-redox reactions with hypervalent iodine have potential to display great progress in the area of C-C bond formation. The reactivity of hypervalent iodine-guided is blooming currently as the new area of research that can lead a new pathway in the direction synthesis organic chemistry.

E051

Role of Green Solvents in Environmental Conservation

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Abstract

The use of solvents is the key to the majority of chemical processes however it makes hazardous implication on the environment. Green solvents were developed as a more environment friendly alternative as compare to petrochemical solvents. Research concerning green solvents is focused on reducing environmental damages due to the use of toxic solvents in chemistry. Despite abundant safety measure, they inexorably contaminate natural resources like water, land, and air because they are difficult to contain and recycle. So, it needed to get focused on reducing solvent use through the development of solvent-free processes and more efficient recycling protocols. However, these approaches have their limitations, needing a pollution prevention approach and the search for environmentally benign solvent alternatives. This presentation will focus on opportunities for the practical implementation of green solvents like water, fluorous solvents, ionic liquids, organic carbonates, supercritical carbon dioxide, as well as biosolvents instead of conventional organic solvents.

Keywords: *Alternative solvents; Green chemistry; Green solvents; Environmental conservation*

E052

Phytosociological study before, during and after kharif Crop (Rice) at three different study sites.

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Abstract

Weeds compete with the crop. It retard the growth and productivity of crop. Phytosociological studies of weeds are needed for understating the relationships between crops and their weed flora. Phytosociological studies takes by the quadrate method. Quadrate is 50x50 cm^2., 25 quadrates were randomly placed in each field of study sites to take phystosociological observations. Detamine and identified the dominant weeds was done through phystosociological analysis. All the three selected study sites, out of two are milki and Baira village from Bhadohi District and one another site- Chetaganj from Mirzapur District. Represented as site I, site II and site III respectively. Species of each quadrate were recorded with their number, diameter of individual by these observation calculate the frequency, relative frequency, relative density relative dominance and IVI. Phytosociology in rainy season- Study record indicated that 25, 21,19 weed species were associated with rice at site I, II, III, respectively. 12 species were common to all the three sites, 17 in site first and I, 15 in site I and III and 15 in side II and III. The total no. of weeds from all the three study sites was 31

Phytosociology in winter season- recorded table indicated that 15, 13 and 12 weed species were associated with wheat at site I and III and wheat + Mustard at site II, respectively. 9 species their common to all the three sites, 10 in site I and II, 11 in site first and III and 9 in site I and III. The total no of weeds from all the three sites was 18.

Keywords: *phytosociology, site, weed, season, quadrate*.

E053

Environmental Sustainability of Life

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Abstract

Human wellbeing is closely linked to the health of the environment. Around the world, 24% of deaths can be traced back to avoidable environmental factors, according to the World Health Organization. People need clean air to breathe, fresh water to drink, and places to live that are free of toxic substances and hazards.

Environmental sustainability is the responsibility to conserve natural resources and protect global ecosystems to support health and wellbeing, now and in the future. Because so many decisions that impact the environment are not felt immediately, a key element of environmental sustainability is its forward-looking nature. In fact, the U.S. Environmental Protection Agency defines it as "meeting today's needs without compromising the ability of future generations to meet their needs."

The three principles, or pillars, of the sustainability of life on this planet are 1) solar energy, 2) biodiversity, and 3) nutrient cycling . Each of these themes interacts with one another and earth's systems to sustain life.

- Solar energy is an important component of sustainability. It sustains our energy sources and natural resources. Solar energy alone is something that we can rely for sustainability. Through solar energy, we are able to collect solar energy and turn it into electricity . Since solar energy is renewable and perpetual, it can be pivotal in making our energy sustainable.
- Biodiversity You might be wondering what biodiversity is and why it is important. Here are the answer to both. Biodiversity is the amount of species found in a certain area. The more species in an area, the higher the biodiversity. Biodiversity is important, because it is vital to a healthy environment
- Nutrient cycling replenishes some of earth's natural resources, such as carbon, water, nitrogen, and sulfur. Nutrient cycling is all about the circulation of chemicals from the environment, through organisms (and man-made systems), & then back to the environment.

E054

Biodiversity and Climate change in India

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Abstract

Climate change is a continuous natural process. The life on earth has always had to deal with a changing climate. The need to adapt to new patterns of temperature and rainfall has been a major influence on evolutionary changes that produced the plant and animal species. Variation in the climate is perfectly compatible with the servival of ecosystem and their functions ,on which we each depend for the essentials of life.The links between biodiversity and climate change run both ways , biodiversity is threatened by climate change , but proper management of biodiversity can reduce the impact of climate change .In the present studies we will discuss about the role of Biodiversity in climate change in India.

Keywords: *Biodiversity, natural resources , Ecosystem , Climate change etc.*

E055

Biodiversity and Agriculture in India

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Abstract

Maintenance of diversity is a matter of global not just local issue. Five thousand plant species have been used as food by humans, but less than twenty now feed the majority of world's population and just three or four crops are staples for a vast majority. Human society is highly dependent on genetic resources including those from wild and semi- domestical sources for productivity in agriculture. In the present studies we will discuss about the role of Biodiversity in agriculture in India.

Keywords: Biodiversity, natural resources , Ecosystem etc.

E056

Photovoltaic Cells: eco-friendly renewable source of light harvesting

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Abstract

A photovoltaic (PV) or solar cell devices are utilized for conversion of natural energy (sunlight) into electrical energy by use of photovoltaic effect. Although promising, PV cells suffer from less efficiency and high cost of production which refrains it from large scale use. Many efforts have been taken to increase efficiency of PV cells so that price of the electricity can go down. Solar cells consist of indium tin oxide and protective glass layers. These cells are designed in the form of sandwich structure, with organic layers between different charges collecting devices in that one side should be transparent and other side may be aluminum or lithium fluoride coated. The fact that the cost of indium is high and it is a rare material leads to solar cells to be much more expensive in future. However, the replacement of graphene instead of indium became more economically feasible for the solar cells production industries. In addition, indium tin oxide's conductivity and flexibility are very less compared with graphene, which attracts more interests on the replacement of indium by graphene in solar cells production. Some researchers reported that graphene layers show efficient photoelectron conversion. Yue et al. reported that the graphene-modified molybdenum sulfide composites exhibited better power efficiency than Pt electrode. There is an advancement of solar cells called organic photovoltaic cells, which has its own advantages compared with traditional solar cells. Nevertheless, replacement of indium tin oxide by graphene made remarkable revolutions in the solar cells industries. Many published reports reveal that the implementation of GSs as a counter electrode in the solar cells showed better power conversion efficiency. In addition, graphene nanosheets produce better transportation of elections and exciton dissociation in the solar cells. Applications of solar cells are remarkable because of the low-cost process involved in obtaining large quantity of outcome. Nevertheless, further production cost reduction is been targeted with assistance of graphene nanosheets and its related derivatives. This is because the revolution of graphene in solar industries will become remarkable in the future.

E057

The need for sustainable development and biodiversity conservation for a new emerging India

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Abstract

The great strides in economic development that India has made in the last two decades is remarkable. While this has resulted in improving incomes in several sectors of society, it has also had side effects leading to the loss of a real 'quality of life' of a large proportion of people. A large trigger for this deterioration has been the fact that the natural resources on which economic development has been essentially based (both directly and indirectly), has been seriously misused in the last few decades. In the rapidly expanding urban and potential megacities of India, the quality of life, as judged by different stakeholders, has shown that their access to resources such as water, air, land, housing and amenities such as health care, availability of green space, recreation, security and peace has actually decreased! The time spent in congested traffic has led to a loss of their personal productivity Increasing pollution is seen as a cause of ill health and preventive health care is sorely missing. Most people in urban India now feel that the 'happiness' that economic development should have produced with their better salaries is only related to availability of more consumer goods and products. However, their overall quality of life has deteriorated.

Sustainable development can be defined as development that meets the needs of the current generation without compromising the change of future generation to meet their own needs. In the emerging countries such as India and China, the issues related to Sustainable Development are those seen in both the developed and the developing countries. This further adds to the complexity of bringing about a common understanding of sustainability that would be relevant for all sections of Indian society. The need to provide an action-related education and awareness strategy for all the different stakeholders that affect sustainability at individual and community levels is a major challenge in India. Appreciating the ill effects of unsustainable development designed for rapid economic growth is the first step towards the understanding of sustainability.

Since the majority of development issues deal with the utilization of resources and energy, or the consequences of their misuse and overuse, it is essential that people everywhere appreciate the new challenges that character the over use of nature's resources in relation to the needs of future generations. A matrix of parameters linked to the levels of sustainability based on the three pillars of development (economic social and environmental) can be used to conceptualize design and implement learning strategies that can be used for an action-oriented teaching 'Education of Sustainable Development.

Sustainable lifestyle changes that every individual can make contribute to the overall 'quality of life' of us all. This requires an action-oriented component to education that must be appreciated by each and every one of us.

E058

Conservation of biodiversity and environmental sustainability

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Abstract

The functioning of ecosystems, including man's survival depends upon the availability, preservation recycling of natural resources such as minerals, water, land and energy resources. Modern civilization entails the high-risk irreversible deterioration of the environment accompanied with overpopulation, overproduction, wastage and exploitation of available natural resources due to continuous increase in the number of endangered species of plants and animals. In response to conservationist's demand, the Indian wild life (Protection) Act came into action in the year 1972. Constitution of India (Article 51A) states that's it shall be the duty of every citizen of India to protect and improve the natural environment. Man, who is near the master of nature, directly and indirectly depends on his environment and man has modified to it according to its benefit. So, man gets their basic needs like air, water (H_2O), food and shelter directly from the natural resources. Man has removed the vegetation and his necessity has brought increased population, industrialization, urbanization and increased number of automobiles etc. A balance exists in nature in the relationships between organisms and their physical environment. Man has disturbed the natural balance by excess use of natural resources and thus excess activities of man has resulted in the loss of natural resources. Conservation may be defined as the “most efficient and most beneficial utilization of natural resources." Whatever is drawn from the environment must return to the environment in some way. For example-a tree remove from a forest should be replaced by growing another. Conservation means protecting the full natural diversity of living species and communities on earth and also to include the development of the greatest man-made diversity in the cities and towns, in all the urban and rural space that man occupies.

Keyword: *Biodiversity, Conservation, Management.*

E059

Role of education in developing environmental awareness

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Abstract

Education is important for a person to know about his rights and duties. Education enables a person to know about various process. Now a days Environment is the hottest topic in all over the world and the need for action to protect our planet. Education plays a crucial role in rising awareness of environmental challenges in shaping the attitudes and behaviour that can make a difference. Lack of awareness about preservation and conservation of environment effectively add fuel to fire. Environmental Awareness not only educates the world

population about the natural environment and its problem; but also aims at developing in them the knowledge, attitudes and skills necessary to protect the natural balance in environment besides working for its enrichment. Environmental Education is nothing but teaching a man how to interact fully with the surrounding world, so as to improve his inner world. Environmental Education enables one to maintain his life thus in turn helps in preservation of human race. The role of teacher is to help the children as well as illiterate adults to know, to protect and to enrich the environment. Children emulate their teachers and draw inspiration from them. Therefore a teachers plays an important role in developing positive attitude towards environment by shaping cognitive, affective and psychomotor domains.

Keywords: *Environmental Awareness, Environmental Education*

E060

Challenges and Management of environment with Special Reference in India

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Abstract

Earth is a unique and a glorious planet whose history dates back at least 4.5 billion years ago. Nature took 600 million years to develop the environment as it exists today. The environment as a dedicated guardian gave us opportunity to interact with the nature and use the resources irrespective of political borders, standards of living and natural economic power. We are all members of a global environmental community that links abiotic and biotic factors together in to one great integrated whole but in the blind race of industrialization and development we have forgotten our friends, philosopher and guide and reached at the crossroads where we have a huge population which is to be fed. Today at the cost of environment we have made our lives more comfortable and conducive due to rapid irrational development, industrial growth and many new discoveries which is irreversible and for which we would have to pay serious repercussion. Same is the case in India. A country known for its culture and tradition and were religion and environment protection together. According to the report of environmental performance index 2020, India is the 12th worst country in the world in handling environmental issues out of 180 countries in the world. The present paper is not only and effort to analyze the environmental challenges, causes, its affects that the country is facing today but also is an attempt to throw light in the probable solutions to overcome the problems which cannot be ignored so as to make India as a clean and green country once again.

E061

Assessing soil erosion and agrarian crisis in tons alluvial plain, M.P., India

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Abstract

This comprehensive study deals with gully morphology in the sub-tropical raverine environment of Tons alluvial plain. The study area lies between $25^{0}00$-$24^{0}45$'N to longitude $81^{0}15$- $81^{0}45$ 'E covers an area about 523 km^2 located as it in the central part of the peninsular foreland and between the alluvial stretch of the great Gangtic plain and Vindhyan scarp land, so it naturally presents a transitional zone incorporating a typical plateau of central India locally known as "Rewa plateau" mainly in Madhya Pradesh. For the delineation and classification of gullies in Tons alluvial plain used the Landsat ETM+ (2004), Topographic maps at 1: 50,000 scale (1973). Arc GIS 9.2 and ERDAS EMGINE is used in the preparation and analysis of present investigation. The outline of ravine affected areas of the area was delineated based on survey of India Toposheet map dated 1972 and LANDSAT ETM + data dated September 2002. The gullied area of the study region can group in to three or four broad categories ;(i) Foothill gullied zone (ii)Moderate gullied zone (iii) Intensive gullied zone with forest clear land. Result provide new insights into the gully morphology and gully forms in alluvial plain. Gully morphology is partially controlled by lithological condition in the Tons alluvial plain. It would be clear that the rate of gullies expansion is depending upon local soil morphology and size of gullies. The alarming rate of gullies expansion is badly affected on agricultural activity of the study area. The agrarian crisis in the study area pushed the farmer towards trap of poverty and debt traps, which have led them towards uneven development.

Keywords: *Land sat ETM+, Georeferencing, Foothill gullied zone, alarming rate*

E062

Soil degradation problem and its impact on lives

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Abstract

Many environmental problems in various part of the world during the recent decade's showsthat concern about ecological degradation is growing at global as well as local scales. Degradation of natural resource is the most vital problem that faces many countries. Land and water is basic requirement of any form of life to sustain on earth. Land degradation is complex problem that is being increasingly faced with the passage of time. It is a result of the dynamic interplay of physical and social - economical, and institutional factors.. The

mostproblematic area of land erosion on the western ghat (both slope side), the northern fore landof peninsular India, and hill slopes of the Siwaliks. Generally speaking, gully used to be a current word for ravines, but it is not so neither all ravines may be considered as gullies nor all gullies as ravines. Further a gully initiates along the animals trails, road and paths on the agricultural uplands. On the contrary, a ravine from along the river side and encroaches uponthe catchments area of the banks by headword erosion. The effects of soil erosion go beyondthe loss of fertile land. it has led to increased pollution and sedimentation in Strems and rivers, causing declines in fish and other species. And degradable land are also often less able to hold onto water , which can worsen flooding.

Keywords: *Gully, Ravine, Degradable land, Fertile land*

E063

Power generation via heating application of plasma: A sustainable development approach

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Abstract

Today's scenario, energy plays an important role for human being. There are various energy resources available globally but all of them less or more affects directly our environment which is not good shine for sustainable development. Plasma resources of energy can be applied environment friendly for sustainable development. Most of the universe consist of plasma typically 98 %. Plasma promises the novel medium for electromagnetic waves interaction. We have studied the high power laser plasma interaction for heating application. The beat wave has frequency $\omega = (\omega_1 - \omega_2)$ and wave vector $\vec{k} = \vec{k}_1 + \vec{k}_2$, would exert ponderomotive force on electrons via nonlinear interaction of two high power laser beams. This force has potential to drive electron Bernstein wave (EBW) in both homogeneous and inhomogeneous plasma. An analytical theory is also developed for the anomalous heating of electron by the same mechanism. A convective loss of waves in inhomogeneity of plasma is achieved. The variation of normalized potential and power distribution with normalized frequency and beam direction is demonstrating the excitation of EBWs under resonance conditions. It is found that the laser parameters such as beam width, modes index, and frequency much affect the EBWs excitation and rate of electron heating. This method of electron heating might be possible application in high power generation and current drive experiment. This technology might be environmentally safe and sustainable economic solution for alternative power generation.

Keywords: *Electron Bernstein wave, Laguerre- Gaussian, Hermite-Gaussian, Beat wave, Magnetized plasma, Heating*

E064

Literature and Environment

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Abstract

So far as the question of literature & environment is concerned then we can say that literature & environment are inseparable from each other. Literature would not be complete without the imagination of environment. All the literary poets, writer could continue to their literary devices with the healthy support of environment. Literature advocates for the implementation of flora and fauna in their natural form. All the romantic poets in English Literature are in the favour of nature. They are against the ecological imbalance. They believe that the whole universe is the creation of God. And the God is pervading in all of them. There is life in all of them. So, environment and environmental things should not be imbalanced. William Wordsworth believes in the existence of the Supreme Being in the whole universe and he writes in one of his poems namely "Lines written in Early spring" the lines run thus:

"And tis my faith that every flower
Enjoys the air it breathes"

The continous release of pollutants to the ecosystem is catastrophic and cause of irreversible change in the ecosystem. It is only the poets and the writers through their literature and literary devices can educate the people of coming generation to not to imbalance the environment, otherwise the whole humanity, civilization, rituals would be dissolved.

Keywords: *Literature, Environment, Ecological balance, nature, Ecosystem, Flora & Fauna, God.*

E065

Impact of climate change on Indian agriculture

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Abstract

The agriculture sector is the prime mover of economic growth in India almost forty one percent of the total work forces engaged in agriculture, means this is the only sector where such a huge work force is engaged. So it is imperative to study constraint faced by them such as physical, institutional, infrastructural and technological factor affecting agriculture in India, viz., climate, soil, topography, market, transport facilities, labor, irrigation facilities, adequate availability of quality seeds, electrification, capital and government policies etc. Especially the effect of global climate change could be potentially serious over the next century include regional increases in floods and drought, inundation of coastal areas, high-temperature events, fires, outbreaks of pests and diseases, significant damage to ecosystem, and threats to

agriculture production. Climate change will also pose a major risk to human health and safety, especially among poorer communities with high population densities in areas like river basins and low-lying coastal plains, which are vulnerable to estimate related natural hazards such as storms, floods, and droughts. Changes in climatic condition severely affect the crops since increase in the temperature of the due to anthropogenic activities modifies the precipitation pattern that result in decreased rainfall over all regions. So, a proper step should be taken by the whole world to minimize the effect global warming in welfare of human being.

Keywords: *IPCC, CFC, HYV, RF, Ecosystem*

E066

Sustainable development and biodiversity

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Abstract

Biodiversity is termed as the commutability among the living organisms. Biodiversity is mainly of three types:

A) genetic variation.
B) ecosystem variation.
C) species variation.

Sustainable development is the integration of economic social and as well as environmental development. The Sustainability and Biodiversity are the two terms which are always interrelated to each other. The structure and functional relations of the biodiversity should be well managed such that the sustainable pathway for economic development can be attained.
Due to increase in population the resources are used in a large volume which is deplishing the resources available and it's being the threat to the biodiversity, and everyone of us like the producers and the consumers has to take care such that everyone should use the products in effective and controllable manner such that there will be sustainable development. Challenges for sustainable development are:

a) energy crisis
b) climatic changes
c) Food Insecurity
d)loss of biodiversity

Looking at future prospective we can see that until now there has been various debate and eventually it came to conclusion that the biodiversity loss has been very intense and whatever needs to be done needs to be done very quickly and a drastic change needs to happen to reverse all that have done and even its impression that we would be able to reverse everything. Even though changes are happening for Sustainable Development of Biodiversity but the question remains: are they effective? Unfortunately, they are not. There are many complications which are coming as human beings are very complicated the proper protection of conservation is not kept in the minds of the people, the companies as well as the government.
There should be more education to its people and all communities on the importance of conservation and sustainable development of biodiversity as soon as possible.

Keywords: *Sustainable Development, Biodiversity, Interconnection, Preservation.*

E067

Restoring the tropical dry forests in the twenty first century: Challenges and opportunities

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Abstract

Tropical dry deciduous forests (TDFs) exhibit worldwide distribution with canopy ranging from highly discontinuous savannas to multi-layered forests. TDFs face high level of anthropogenic disturbances and pressure in the form of agricultural conversion and population density leading to degradation of the ecosystem, precisely habitat of the species on the top of the trophic level. The United Nations decade on Ecosystem Restoration (2021-30) aims to reverse the degradation of ecosystems by eradicating or amending reasons of ecological degradation and by restoring the natural processes. Habitat of species is the integral part of an ecosystem and restoring them will ensure functionally restored ecosystem. Restoration should focus on restoring the trophic interactions (biotic and abiotic interactions), natural processes and disturbances and elements of dispersal of population. Active management can restore previously present missing natural processes. Dispersal of population is facilitated by removing or improving the artificial barriers to the connectivity within and among ecosystems. Poorly managed ecosystems with no connectivity leads to failure of restoration projects. The anthropogenic pressure can be managed by restricting human activities i.e., very little or non-human intervention and thus creating space for natural processes to take over. Successful restoration and self-sustaining forests also help achieve various sustainable development goals such as SDG 2: Zero hunger, SDG 3: Good Health and Wellbeing, SDG 13: Climate Action, SDG 14: Life below water and SDG 15: Life on Land. This article aims to explore the challenges and opportunities in restoring Tropical Dry Forests.

Keywords: *Ecosystem restoration, Tropical Dry Deciduous Forests, Biodiversity, Restoration, Sustainable Development Goals*

E068

Rare earth doped glasses for solid state lighting

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One of the main sources of energy-related greenhouse gas emissions is the generation of electricity, and a significant amount is due to lighting using incandescent lamps and fluorescent lamps. Hence, there is a demand for cost effective, energy efficient and high quality environmentally benevolent replacement technology. Solid-state lighting (SSL) has attracted much attention after the demonstration and development of high-brightness blue light emitting diode (LED), and has a bright future replacing existing lighting for general illumination. SSL means greener homes and businesses, uses substantially less electricity, and enables our less

dependence on fossil fuels. There are also specialized applications, such as automobile headlight, instantaneous 3D image, fluorescence microscopy, and micro-satellite lighting in aviation field. Blue LED, due to its low power consumption, high efficiency, long lifetime, and environmental friendliness, is used at the heart of SSL. Single or multiple phosphors are used as wavelength converter, and the powdered phosphor is dispersed in epoxy resin mixed with silicone and fixed on the chip. The blue light is down-converted into visible light, and the two lights are mixed to form white light. Oxide glasses are chemically stable and are suitable host materials for rare earth ions (REIs) due to their high REIs solubility and large emission cross-sections. Among different oxide glass systems, tellurite and borate glasses are widely used due to their attractive properties, such as high transparency, low melting point, high temperature stability, and good REIs solubility. REIs doped glass phosphors have high light transmittance and simple preparation technology is more resistant to water and heat, and can circumvent the resin aging problem. Moreover, NP can also be incorporated into glass host materials together with REIs, and is an ideal sensitizer to enhance the REIs emission efficiency, due to the local surface plasmon resonance effect and the energy transfer effect. With the addition of NPs, the color-rendering and fluorescence intensity of REI are also improved. This paper presents the generation of white based on a new class of NPs enhanced REIs codoped glass phosphors.

E069

Home gardens: A nature-based solutions for conservation and production system in the Anthropocene

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Abstract

Present humanity is facing multiple crisis in the Anthropocene era, this menace has strengthen after COVID-19 pandemic and climate change. The natural production and conservation system acquires a nature-based approach to meeting the targets of sustainable developments goals (SDGs). It enhances the linkage with small production systems and provides a nature-based solutions for degraded ecosystems and their conservation. Small scale traditional home garden practices are often consider one of the neglected but remarkably sustainable production system. This provides a space of resources, management techniques and human cultural heritage. It involves the deliberate management of a diverse categories of multipurpose trees and shrubs in intimate association with cultivated and wild crops and invariably livestock. Garden practices are ecologically sustainable, socially viable and economically beneficial to human well-being. These systems have significant role in food security for marginal population in world, especially in the dry tropical. Wild foods are the major constituent of tropical gardens, contributing the major resources of nutrition for poor farmers in resource stress condition. Thus, there is need of hour to adopt nature-based approach of production which are more resilient food system that diversify the agro-ecosystem and strengthen the local food production. Garden practices are an important strategies to enhancing the production and conservation of rare species at household and communal scale. High production and conservation of important plant species in megacities, town areas and village including small patch farming near the house, local community gardens, indoor and top-root

farming and vertical farming would provide a nature-based solutions for degraded ecosystems and achieving several United Nations Sustainable Development Goals (UN-SDGs).

Keywords*:* *Conservation; Crop diversity; Wild food; Nutrition security, SDGs*

E070

Environmental sustainability and critical thinking

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Abstract

The concept of sustainable development was described by the 1987 Bruntland Commission Report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainability is made up of three pillars: the economy, society, and the environment. These principles are also informally used as the profit, people and the planet. The economy and society depend directly and indirectly on the environment. Therefore, the conservation of environmental Sustainability is of utmost importance. There are two primary ways in which environmental sustainability can be achieved: by individuals and by corporations and government bodies. Sustainability can be attained by use of renewable energy, such as solar, wind, hydroelectric, and biomass etc. Sustainability in agriculture includes crop rotation, crop cover, and smart water usage, while sustainability in forestry involves selective logging and forest management. In modern lifestyle if we try to manage the sustainable use of resources that will help in the near future.

Keywords: *Sustainable, conservation, economy, society, energy.*

E071

Role of Mathematics to Study, Learn, Teaches and Educate about Environmental Sustainability

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Abstract

Excluding Nature from the math classroom is unnatural. Including Nature would enliven the subject. The Mathematical Association of America has a Mathematics and the Environment website to guide this integration. To most educators, environmental math may sound strange, but the two go together well. Scientific literacy requires skill in math, as does learning about ecology and environmental systems. There is plenty of math to be discovered in the natural world, from patterns in Nature to Nature's engineering, and a symbiosis exists between basic scientific principles and their mathematical expressions in Nature.

We may be taught sustainability using simple math, such as sharing with basic mathematics—percentages, ratios, graphs and charts, sequences, sampling, averages, growth,

calculus, variability and probability—all relate to current, critical issues such as pollution and the sustainable availability of resources. Understanding the math of exponential growth and limits to growth is essential for environmental literacy. Mathematical modelling is essential in assessing global environmental change. Exponential, limitless growth continues, so environmental depletion, degradation, and pollution have now exceeded the planet's carrying capacity. Global warming is the worst market failure ever. Mathematics not only helps us to understand natural phenomena, it also **allows us to sustain the majority of human activity on the planet.** Transport networks, the Internet and business transactions are all practical applications of research, graph theory and number theory. Online curricula teach math through current global issues, including population growth, biodiversity, climate change, natural resource use, and ecological footprint. The absence of Nature in math is extended to the math of accounting.

One solution is to start teaching the mathematics of sustainable development by insisting on integrating social and environmental costs (and the internalization of such) into the teaching of environmental sustainability. As we can see, many knowledge areas concerning the Earth require mathematics for their development.

Keywords: *Environmental sustainability, Mathematical modelling, Natural phenomena Environmental depletion, Graph theory, Number theory, Sustainable development*

E072

Microplastics: The silent threat to ecosystem

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Abstract

Plastic contamination is currently a grave environmental issue. Over the decades researches have highlighted the migration and leaching of plastic additives, which were ended in ecosystem sink. Microplastics (MPs) refer to all plastics particles that are less than 5 mm in size. They have been ubiquitously detected in a wide range of shapes, polymers, sizes and concentration in marine water, freshwater, agroecosysytem, atmosphere, food and water environments, drinking water, biota and other remote places. It is estimated that 5.25 trillion macro and micro pieces of plastic ends in our ocean. The accumulation of microplastics in terrestrial and aquatic biomes has raised concerns due to their adverse effects on human health and ecosystem functions. These synthetic polymers act as vector for the transport of various types of chemicals in natural ecosystem. Furthermore, microplastics can act as mimicking agents, cause synergy effect and bio-accumulate in organisms. Therefore, the main focus of this paper is to screen out the scenario of micro plastics in our habitation, hence the purpose of this paper is: (i) to study the physical properties and toxicological profile of micro plastics, (ii) to evaluate the possible approaches in order to cope with the problem of plastics. The omnipresent presence of microplastic is beyond imagination, for that reason awareness programmes and researches should be done on this critical issue to achieve environmental sustainability.

Key words: *Microplastics, contamination, environment, toxic*

E073

Restoring the riparian ecosystem of the ganga river for biodiversity conservation, human well-being and environmental sustainability

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Abstract

Restoring the riparian ecosystem of the Ganga River is crucial for fulfilling the UN-Sustainable Development Goals (UN-SDGs). Furthermore, it is also pivotal for attaining the targets of the UN-Decade on Ecosystem Restoration (UN-DER). Riparian ecosystems are the transitional zones of water body and terrestrial ecosystem. These biodiversity rich habitats supply a wide range of ecosystem functions and services that play a key role in biodiversity conservation, human well-being and environmental sustainability. The Ganga River and its riparian ecosystem sustain the lives of millions in the Indian subcontinent. But in recent decades the health of the Ganga River and its riparian ecosystem is declining at an alarming rate and consequently impacting the lives of millions who depend on this largest river of India. The riparian ecosystems are integral to the river ecosystem and restoration of these ecosystems would pave the way for a healthy river and sustainability of ecosystem services. We propose different approaches of nature-based solutions (NBS) for restoring riparian ecosystem of river Ganga. These approaches were identified from literature review, field survey, observations, and interviews with local people. NBS use ecosystems and the services they provide to address societal challenges such as climate change, food security or natural disasters. This article proposes various NBS such as restoration of catchment water bodies and wetlands, creation of riparian buffers, sustainable agricultural practices (e.g., agroforestry, use of organic compost, less water cropping, zero or reduced tillage, intercropping and crop rotation), home gardening, plantation in catchment, community awareness, payment for ecosystem services, and involvement of stakeholders. We recommend the Government of India to include the NBS in their policy and planning and incorporate these approaches in the *Namami Gange* to restore the Ganga River health and its riparian ecosystems.

Keywords: *Ganga River, Biodiversity, Nature-based solutions (NBS), Sustainable development goals (SDGs), Riparian ecosystem*

E074

Securitizing climate refugees: It's challenges to India's national security

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Abstract

In recent years, climate induced displacement of people has come at the forefront. It refers to the increase in large scale migration and cross border mass movements of people partly caused by such weather-related disasters. According to Global Climate Risk Index 2021 India is the seventh most climate change affected country. Major cities like Mumbai and Kolkata are at risk of

drowning by 2050. Climate related migration has evolved into a global crisis by displacing a large number of people from their homes and forcing them to flee, due to environmental degradation and natural disasters. Environmental refugees are not protected by international laws, so no yet responsible for their protection and rehabitation. Climate refugee confront numerous problems such as different laws, languages and cultures, they encounter conflict with indigenous residents, education and health care system, additional pressure on their scared resources thus they face livelihood crises. But the question arises where they would settle? How will they survive? What will be identity and legal status?

Climate refugees are serious concern to India's national security such as cross border movement from Bangladesh and inter-state displacement of peoples. In India, over 38 lakh new displacement took place due to environmental disaster in 2020. It is thousand times of displaced by conflict (according to internal displacement monitoring center). India would have no alternative but to accept and rehabilitate the refugees, ensure food security, safeguards to the fragile indigenous population, requires legislative and policy measures so that the refugees get their due rights of settlement and rehabilitation.

Keywords: *Refugee, Degradation, Disasters, Rehabitation, Indigenous, Livelihood, Security, Displacement, Legislative.*

E075

Prioritization of biodiversity conservation and economic welfare

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Abstract

In any area to achieve the goal of biodiversity conservation, the existing resources must be strengthened, which are helpful to provide the alternate livelihood or income to the local people. Particularly in developing countries the sustainable livelihood of the local people is difficult if restrictions are imposed on their traditional access rights over the natural resources. Based on the extensive field work, we found that if the people are having the alternate options for earning, their reliance on the existing resources (not for commercial purpose) will become much lower. Therefore, the biodiversity in these areas is conserved and managed in a healthy way. In this paper, prioritization of biodiversity and economic welfare of local people are discussed.

Through field investigations, this paper indicated that high density of many ecosystem provisions would present in those areas where people have profitable options to earnings. Therefore, in any area, the biodiversity conservation and economic security are both important for local people. We concluded the following three points based on this study: a) If the income of local people were generated from non-vegetation related activities, conservation will happen; b) If the decline of revenue from vegetation related activities can be compensated with other activities, conservation is achievable; and c) People with low income are trying to maximize their income from the existing forest resources, leading to severe environmental degradation. Hence, the documentation of such knowledge is crucial as rapid socio-economic and cultural changes are taking place in the societies.

Keywords: *Biodiversity conservation; Ecosystem provisions; Local community, Sustainable livelihood, economic welfare*

E076

Use of non-conventional green routes in synthetic organic chemistry for a sustainable future

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Green chemistry has been a keen interest for significant research in organic synthesis. The concept of "green chemistry" emerged in the early 1990s by Paul T. Anastas and John Warner and is now widely used to overcome the fundamental scientific challenges to protect the living beings and environment while simultaneously achieving commercial feasibility. Although there are 12 classic principles of Green Chemistry, which contribute the sustainability of chemical reactions, energy economy, lesser toxicity of reagents and final products, decreasing the risk of global pollution and reuse of various waste materials. In extension the use of non-classical methods for the synthesis of materials are underexplored and it minimizes the generation of hazardous substances and increasing product yield. Non-conventional methods focus on increasing the efficiency of synthetic methods, using less toxic solvents, reducing the stages of the synthetic routes and minimizing waste as far as practically possible. In this way, the use of some non-conventional techniques in organic synthesis will be part of the sustainable development. Microwave (MW) and ultrasonic assisted techniques are the potential non-conventional, eco-friendly techniques are being used for last decade. These techniques are extensively used in various type of organic reactions, such as substitution, C-H activation, cross-coupling, multi-component synthesis etc., providing a versatile and facile route to obtain the desired product. This short review paper highlights use of microwave (MW) and ultrasound techniques for various class of reactions used in recent years. These techniques are also compared with some classical methods and proved itself a better choice for the product synthesis.

Keywords: *green chemistry, non-conventional methods, Sustainable developments*

E077

The future of biodiversity

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Abstract:

The current epoch also known as Holocene epoch is undergoing a wave of mass extinction due to human interferences. Extinctions occur periodically but mass extinctions are defined as periods with much higher extinction rates. The affected species range from microbes to mammals, birds, invertebrates etc. The destructing anthropogenic activity has also affected various biodiversity hotspots thereby making it impossible to report such exterminations as they are made extinct before they are located. Modern extinction rates average around 100 E/MSY i.e. birds, mammals and amphibians have been going extinct 100 to 1000 times faster. If all species currently deemed "threatened" become extinct in the next century, then future

extinction rates will be 10 times recent rates. Modern technologies do help to track such annihilations but they are only as good as our records of biodiversity rich areas.

Keywords: Holocene epoch, anthropogenic, biodiversity hotspots

E078

Application of cyanobacterial biodiversity improve our food and health

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Abstract

Cyanobacteria, one of the oldest groups of known organisms, are photosynthetic prokaryotes. Their unique ability, the ability to fix nitrogen and carry out oxygen-evolving photosynthesis and oxygen-labile nitrogen fixation within the same organisms, has always fascinated researchers. Cyanobacteria is the source of biofertilizer is one of the route for alternative energy. Besides fixing nitrogen, cyanobacteria excrete Vit B_{12}, auxins and ascorbic acid which may also contribute to the growth of rice plants. This can reduce farmer's dependence on chemical fertilizer as well as reduce the environmental hazards. Cyanobacteria may become beneficial in the interest of farmers and public health. Biofertilizer such as cyanobacteria increase the soil fertility which is necessary for maintenance of biodiversity and cyanobacterial biofertilizer also increase the protein contents in the grains which ultimately use as basic food throughout the world.

Keywords: *Cyanobacteria, Biofertilizer, Vit B_{12}, Protein, Health, Food.*

E079

Nanoencapsulated plant essential oil as an eco-friendly approach against biodeterioration of wheat flour caused by insect pests.

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Abstract

The present study was undertaken to investigate the bioactivity of chemically characterized *Melissa officinalis* plant essential oil (MOEO) and its mode of action against the red flour beetle *Tribolium castaneum*, the prominent insect pest of wheat flour. GC–MS analysis depicted citral (44.51%), caryophyllene (11.48%) and limonene (9.23%) as the major components. In the contact bioassay, 100% mortality was achieved at 0.157 µL/cm^2 (24 h) against both adults and larvae. MOEO exhibited absolute fumigant toxicity at 0.10 µL/mL air (LD_{50} = 0.071 µL/mL air) following 24 h exposure. The EO showed strong repellency and feeding deterrent activity at 0.028 µL/cm^2 and 0.071 µL/mL respectively. Compared to control, a significant elevation in ROS level accompanied with impairment in enzymatic (SOD-CAT)

and non-enzymatic (GSH/GSSH) antioxidant defense system was reported in the EO exposed insect pest. However, sub-lethal dose of EO has no significant effect on *in vivo* acetylcholinestearse enzyme activity. When encapsulated in chitosan polymer matrix and tested as fumigant, toxicity was increased dramatically, where LD_{50} value after 24 h exposure was just 0.048 µL/mL air. The SEM, FTIR and XRD results confirmed the successful encapsulation. The findings of our study suggest MOEO as potential biorational alternative to synthetics against *T. castaneum* infestation in stored wheat flour.

Keywords: *Essential oil, nanoencapsulation, Tribolium castaneum, stored food preservation.*

E080

Importance of algae on the abatement of atmospheric corbon dioxide.

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Abstract

The world's oceans have played an important role in sequestering atmospheric carbon dioxide through solubility and the action of algae. Fixation of atmospheric carbon dioxide by photoautotrophic algal cultures has the potential to diminish the release of carbon dioxide into the atmosphere, thereby helping to alleviate the trend toward global warming. This paper aims to assess the atmospheric CO2 capture by algal cultures by mathematical modeling approach. Our model is based on the fact that carbon dioxide is consumed by algae for their growth which in turn reduces the concentration of atmospheric carbon dioxide. Partial Rank Correlation Coefficients (PRCCs) technique is used to address how the concentration of atmospheric carbon dioxide is affected by changes in a specific parameter disregarding the uncertainty over the rest of the parameters. Parameters related to algal growth are shown to significantly reduce the level of atmospheric CO2.

Keywords: *Mathematical model, Algae, Atmospheric carbon dioxide, Global warming.*

E081

Narratives of Ron Rash: Cautionary Tales of Eco-Crisis

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Abstract

Literature has always worked to awaken the consciousness of society for any matter that needs attention. In recent years, a stock of literary materials in forms of poetry, novel, essays etc. has shaken the sleeping mind of man to see his injustice, atrocities towards nature. Nature with its beauty, flora and fauna has always been sung by bards of literary world. The sounds and sights, the nuanced colours and contours of the immense world of mountains, rivers, valleys, flora and fauna has retrieved into the epistemology of human existence the

consciousness of mankind's symbotic connection with nature. Writers like Tolkein, George Mclean, Cormac MacCarthy, Margaret Atwood, Ron Rash etc. have engaged the readers in deep ecology, social ecology, ecocriticism, ecofeminism, eco-spirituality, landscape mysticism. They have also portrayed how nature has taken ravage shape in past few decades and started taking revenge for unmindful acts of man towards it.

This paper would deal particularly with the novels of Ron Rash whose narratives function as cautionary tales of eco-crisis that our civilization is facing. His narratives makes us alert about the escalating impact of environment destruction evident in smog ridden cities, the melting glaciers, the disappearing Dead Sea, increasing global warming, decreasing environmental resources and remind us of the stark fact that we are already at the brink of ecological crisis.

Keywords: *deep ecology, ecocriticism, ecofeminism, eco-spirituality.*

E082

Groundwater management: A study

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Groundwater is sometimes called an invisible resource. Everybody uses it. It is mostly free, available to those with access and the means to extract it. It sustains critical ecosystems, such as lakes, wetlands and woods. It is however, largely invisible and users have no knowledge about aquifers that yield the groundwater they use, and what constitutes sustainable and equitable usage of this common – pool resource. India is the largest user of groundwater in the world, using more than a quarter of the available global resources. Groundwater has played an important role in ensuring the food security of the country. It was a major driver in ensuring the success of the 'Green Revolution' through millions of energized tube wells. Increasing and unsustainable extraction of groundwater has resulted in significant depletion, with consequent adverse environmental impact. Currently, groundwater resources in nearly one- third of the country are under different levels of stress. Small and marginal farmers, women and weaker sections of the society, disproportionately bear the brunt of groundwater depletion and contamination. In this paper, various measures and methods will be discussed relating with ground water and its management.

Keywords: *Groundwater, ecosystem, resource, tube wells, Farmers, India, Government Schemes.*

E083

Depletion in ozone layer and impact of UV-B on the plant life

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Abstract

The by-product of oxygenic photosynthesis *i.e.*, oxygen had played significant role in the development of ozone layer, a UV-B and UV-C sunscreen since Precambrian thereby this ozone shield in the stratosphere has made the possibility to migrate life from ocean to the land. Since then, our land surface is appeared green due to the plants. In recent years, excessive anthropogenic activities have released several toxic substances to the environment among these ozone depleting substances such as chlorofluorocarbons (CFCs), methane, and nitrous oxide etc. causing great distress to our environment. In recent years, CFCs are capable to deplete ozone and therefore, the earth is receiving the elevated level of UV-B (280-320 nm) and thus, causing damaging effect on plants and other living organisms particularly found on the land surface. UV-B radiation is rapidly absorbed by important biomolecules such as lipids, proteins and nucleic acids and causes their destruction.

E084

The mutualistic interactions of myrmecophilic plants and ants

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Abstract

All living organisms in the ecosystem have significant interactions with other organisms throughout their lifetime. Ants are the eusocial insects belonging to the family Formicidae of the order Hymenoptera. Ants are the ecosystem engineers and good bio-indicators. Ants interact with plants, insects, fungi and bacteria. These interactions between individuals of different species are called interspecific interactions. Ants and plants are intertwined organisms on planet earth due to their mutualistic behaviour by protecting plants from herbivores, clearing parasitic fungi on leaves and dispersal of seeds and fruits. Ants are the most important predators of few arthropods and are attracted by Myrmecophilic plants, which produce Extra Floral Nectar (EFN). EFN is consumed by ants as food. These interactions are most commonly facultative, involving opportunistic attraction of ants nesting elsewhere to plant-produced food rewards.

Leaf cutter ants are associated with fungi they cut the leaves and carry to their nests, ants do not eat leaves. Ants use these leaves to grow a special type of fungus to build underground compost piles which is used as food for their larvae. The ants get benefit from the fungus which provides food for their colony, and the fungus is benefited as the ants bring fresh leaves to grow

on, keep it free from pests, and carry the fungus along with them when they establish new colonies. Ants also carry the seed to the nest for the nutrition of larvae and some are discarded underground where it has a favourable condition of sprouting. Ants help in the dispersal of seeds far away from the parent plant, so they do not compete with their parent plant for light and nutrients. The seed dispersal by ants is known as myrmechochory. This review article emphasizes the mutualistic interactions of plants and ants are the key indicators of ecosystem.

Keywords: *Mutualism, Extra Floral Nectar, Myrmecophilic, Fungi, Seed Dispersal.*

E085

Biodiversity and sustainable use of Medicinal Plants

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Abstract

Biodiversity is a technical term which depicts about the diversity among biota. The biotic domain has since always been the richest source of basic needs of life. Fulfillment of the excessive needs society, industrialization has exploited the biota to a great extent. As a result, a great loss of biodiversity, a serious threat of availability of natural resources to forthcoming generations has raised head and a need of necessary, limited and sustainable use of bioresources is required.

Overexploitation of herbal medicature and destruction of habitat loss has always been a seriour threat to the biodiversity of medicinal plants. If we consider about the history of medicine system of India and some other ancient civilizations like Unan and Rome and several others, it is observed that almost all systems were solely dependent on plants to obtain medicines and other medicinal objects. In terms of chronology the time and use of medicines has been subdivided into three main time slots ie ancient, middle and modern. In ancient times, the populace used the herbs to cure the ailments but with the advancement of modern science and industrialization in the middle age, the active alkaloids and biochemicals were synthesized in laboratories and the medicines were produced from industries and this system was called Allopathic medicine but the use of such medicines has various side effects.

Now a days of modern time Herbs has again attracted the people as it has no or very little side effects, but the industrialization has affected the modern herbal medicinal system. A huge number of herbs are being destructed. If we revert to herbal medicine to cure the ailments, we have to follow the ancient mode of procuring the herbs from nature to ensure the sustainable use of herbal medicines.

Actually, people were directed to invite the herbs in special rare muhurta, lagna, ghati, pal along with enchanting mantras. Deification of herbs was also an ethical way to conserve the herbs and ensure the sustainable use of them.

E086

Bioprospecting Plant Biodiversity

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Abstract

Biodiversity is the backbone of life which caters to fulfill food security, medicine, fresh air, water, shelter and a clean and healthy environment. Loss of biodiversity means losing an opportunity to face future challenges such as climate change and food security. India is a megadiverse nation housing around 10% of worlds' species on only 2.4% of world's land area. The floral diversity in India is mainly concentrated in four biodiversity hotspots which harbours 33% of endemic angiosperms. The number of plant species in India is estimated to be over 45000, about 11.8% of the world's flora which includes over 17,500 flowering plants of which 4950 species are endemic to India. 22% of all plant species face extinction with 75% of crop diversity lost from 1900 to 2000. Today only 15 crop plants provide 905 of world's food energy intake rendering global food system highly vulnerable to shocks.

Plant bioprospecting is methodical search of plant diversity for novel products (pharmaceutical /industrial) of commercial value. Plant based traditional systems of medicine such as Chinese, Unani, Ayurveda and Ethnobotany coupled with plant bioactives of pharmaceutical value in modern system of medicine reiterates the vast potential of plant biodiversity. The antimalarial drugs quinine and quinidine are still produced from bark of Cinchona, Catharanthus roseus is still the main source of anticancer drugs vincristine and vinblastine and also antihypertensive drug ajmalacine, artemesinin used for drug resistant malaria is still sourced from Artemisis annua are some examples quoted to highlight the significance of plant diversity as medical breakthroughs till date.

The vast library of phytochemicals of plant kingdom from algae to angiosperms including unique secondary metabolites of lichens serve as leads for development of new medicines with a potential to combat the onslaught of ever evolving microbes such as SARS, Coronavirus.

Plant bioprospection with the dual purpose of sustainable development and biodiversity conservation is the focal point of Millenium Development Goals of Agenda 21. However, the discovery of anticancer drug taxol from Pacific Yew and search for taxol like compounds has shown how bioprospecting can substitute threats to biodiversity from overharvesting to threat to biodiversity from habitat conversion.

E087

The impact of Sustainable Agriculture on Food Security

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Agriculture is one of the most significant disciplines that humanity has evolved in order to ensure its existence and spread around the globe. Agriculture was the only reason why humans abandoned their nomadic lifestyle and established in colonies that are today known as cities, towns, or villages. Despite significant technological advancements and unprecedented

chemical use, recent surveys reveal that approximately 870 million people are currently hungry as a result of various resource scarcities. As a result, the FAO reported in 2012 that agriculture production must increase by 60% if we are to meet the needs of a population of approximately 9 billion people by 2050. To date, farmers have primarily relied on the use of artificial fertilizers and pesticides to increase crop yield. Agricultural sustainability can be achieved by utilizing and implementing farming systems that improve crop production to fulfil the demands of a growing population while also conserving and protecting the environment and its natural resources. While global food production has been sufficient in the last 50 years, modern agricultural development approaches have not been outstanding in terms of providing food security and maintaining environmental sustainability. According to the United Nations' Sustainable Development Goals Report (2018), economic development is required to achieve sustainability and is directly linked to food security, improved nutrition, and sustainable agriculture. To achieve the goals of food security and sustainability in the agricultural sector, traditional biological methods must be combined with recent biotechnology and bio-engineering innovations in order to utilise unculturable microbes, their genes, and metabolites, as well as improve the industrial production of bioinoculants, respectively. Only through focusing on tying agriculture to nutrition and health, as well as designing agricultural, nutrition, and health policies that reflect nutritional demands, can long-term solutions to malnutrition be achievable. We now know that biological alternatives are the only way to preserve agriculture from disaster and ensure food security through sustainability.

Keywords: *Agriculture, Sustainable, environment, malnutrition, and food security.*

E088

Role of sketching and painting in environmental sustainability

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Abstract

Literacy rate of India is 74.04 % according to the census of 2021 i.e., the remaining 25.96 % of the Indian population is illiterate. To aware this one fourth population, matters should be displayed in the form of sketching and painting. By means of this technique we can convey our thoughts to these people in a very effective manner. For example, a layman can understand any fact with the aid of visual impact in a potent way rather than understanding the same fact through textual communication. We can also take the example of traffic signals involving the deep impact of colours on the brains of even a child or an illiterate person. They can understand the traffic rules very well through colors and pictures. In the same way the colourful paintings leave a great impact and thus effectively communicate any message. Successively, 8.6 % of the total Indian population is tribal and these people preserve the nature/environment in the best possible way but unfortunately, they are illiterate by 41 %. Among these tribes, sketching and painting is the best way of transferring their thoughts to their descendants. Besides this when we go through the literature/history of our nation, we have seen that the main mode of communication was the sketching and painting only, be it the world-famous Ajanta-Ellora cave paintings or the Bhimbetka paintings. So, it is our culture to use the drawing as the main script. We can also cite the example of Harappa civilization in the same manner.

Thus, we can conclude that the illiterate population can be efficaciously well informed in terms of the environmental protection and sustainability through paintings and sketching rather than the literary knowledge.

Keywords: *Literacy, Painting, Script, Sketching, Sustainability, Tribe.*

E089

A friendship of butterflies and flowering plants flourish the ecosystem

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Abstract

Butterflies are the most diverse group of Insects with brightly coloured wings and conspicuous fluttering flight. They include 16,823 species all over the world and about 1,800 species in India. Butterflies provide a crucial ecological service and are the indicators of a healthy ecosystem. They are an important element of the food chain and are prey for birds, bats and others insectivorous animals. These winged guests visit flowering plants to collect nutrient-rich nectar and significant pollinators for economically important crop plants. Flowering host plants are intricately tied to a butterfly's lifecycle since their caterpillar stage. Caterpillars are usually herbivorous, and each caterpillar species uniquely relies on a narrow set of plants that evolved with them their host plants to provide them with their specific nutritional and chemical requirements. This delicate bond between butterflies and their host plants is irreplaceable, and the distribution and abundance of caterpillars are heavily influenced by the distribution and abundance of their host plants if their hosts disappear, their guests of particular species of butterfly disappear too. Minor changes in their habitat may lead to the extinction of species. The present investigation reveals that the conservation of butterflies through the conservation of flowering plants which improves the diversity and abundance of butterfly species in the ecosystem.

Keywords: *Pollinators, Herbivorous and insectivorous.*

E090

Forests that heal: Medicinal plants as an ecosystem service

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Abstract

Forest biodiversity contributes to the healthy diet, nutrition and subsistence of people and in increasingly market oriented economics. Forests are important repositories of medicinal compounds. Traditional knowledge of forest plants is used in commercial development of products including pharmaceuticals, herbal medicines, cosmetics, crop protection. Medicinal plants play a crucial role in drug discovery. Many developing countries largely rely on

traditional medicine and herbal remedies for primary healthcare. However, despite the growing economic importance, medicinal plants as an ecosystem service crucial to human health, livelihood and knowledge are not popular in discourse. Degradation of forests and loss of species make few plant species unavailable for the use local communities; as a result, traditional methods are lost. Healthy ecosystems and biodiversity are sources of various services that nurture life and enhance human well-being.
The loss of forest diversity may also take with it important cures for diseases of both those we face now and those that may emerge in the future. Forest biodiversity can reduce climate change and also helps in regulating infectious diseases.

Keywords: *Medicinal Plants, Biodiversity, Health*

E091

Biodiversity and sustainability: Two sides of same coin for maintenance of ecosystem health

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Abstract

Biodiversity is increasingly being acknowledged as a critical component and one of the most representative traits of a healthy ecosystem on a global scale. It supplies human society with a variety of ecosystem services that are significant to local and global environmental concerns and sustainability. Biodiversity contributes significantly to the economic well-being of communities and the maintenance of a healthy human civilization by ensuring a steady supply of natural resources and ecological services, hence reinforcing sustainable development in numerous ways. Numerous ongoing challenges to taxonomy, community, and ecosystems, on the other hand, result in biodiversity loss and ecosystem destabilization, thwarting efforts for sustainable development. As a result, biodiversity conservation becomes a key goal for effective environmental management. Here in this paper, I will discuss the key challenges to biodiversity, such as deforestation, land degradation, and soil degradation together with some of the other associated dimensions such as habitat degradation, overexploitation of natural resources, pollution and climate change. Conservation initiatives, rules, and regulations, as well as public awareness, have been cited as critical elements in mitigating biodiversity threats and ensuring sustainable development.

Keywords: *Biodiversity, Conservation, Climate change, Biodiversity threats, Sustainability*

E092

Scientific Management Policies of Biodiversity: A Study with Sceptical Approach

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Abstract

In the last few decades, the world has experienced a lot of problems related to the environment. For example, climate change, changes in physical surroundings, extinction of many species of plants and animals etc. are environmental related problems. In addressing to the solution of these problems there resulted the formulation of policies of diverse sorts known as Scientific Management Policies, prepared by individuals, organizations, and state machinery. For example, the strategies adopted by the agencies like International Conservation of Natural Resources (IUCN) in cooperation with the United Nations Environmental Program (UNEP) and the World Wildlife Fund (WWF) for the conservation of nature. Certain schools of environmental thoughts tag the polices of these agencies as standard view of conservationists which are individualistic. Particularly, deep ecology, an approach of environmental philosophy believes that the argument of these agencies is thoroughly anthropocentric in the sense that all their recommendations are justified exclusively in terms of their effects upon human health and basic well-being.

This paper looks into the problems of environmental crisis in a deeper way. At the same time, it sees the scientific management policies preserving biodiversity in a sceptical way. In other words, this paper reflects its doubts about the technological optimism and scientific management of ecological crisis considering. At the same time, it is critical to materialistic, consumer-oriented and limitless economic growth. Moreover, this paper attempts to see the moral status of all biological components in the greater realm of existence.

Keywords: *Biodiversity, Anthropocentrism, Deep-ecology, Ecocentrism, Moral-status*

E093

Biodiversity, Environment and Society

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Abstract

Biodiversity is the shortened form of two words "biological" and "diversity". It refers to all the variety of life that can be found on Earth as well as to the communities that they form and the habitats in which they live. It represents the variability within and among them.

At the 1992 Earth Summit in Rio de Janeiro, world leaders agreed on a comprehensive strategy for "sustainable development". One of the key agreements adopted at Rio was the Convention on Biological Diversity (CBD). This pact among the vast majority of the world's governments establishes three main goals: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits from the use of genetic

resources.Every year, the United Nations marks 22 May as the International Day for Biological Diversity, to increase understanding and awareness of biodiversity issues. The theme for the event is 'Our solutions are in nature' promote human well-being, tackle climate change and protect our living planet. Some major issues faced during the period:

HABITAT DESTRUCTION As our numbers rise, cities, infrastructure and cropland are growing and merging into each other, fragmenting the remaining habitat and leaving isolated "islands" of natural populations of plants and animals too small to survive.

OVEREXPLOITATION Humankind's relentless consumption of resources such as timber, oil and minerals is continuing to destroy natural habitats around the globe. We are also putting enormous pressure on populations of wild species.

CLIMATE CHANGE On the planet, climate crisis due to endless production of greenhouse gases including carbon dioxide and methane by the end of the century Earth will get warmer to 3-4 °C which will result into serious temperature increase and ecological disbalence.

POLLUTION Disposal of waste from households, agriculture and industry, becomes an increasingly serious issue. Our oceans are becoming choked with plastic waste which is killing millions of animals, from sea turtles to whales

Awareness and adaption are two key steps towards conserving this boon called environment. Each one of us can and should do their bit to curb the effects of these environmental issues and ensure that our future generations have a healthy planet to live.

Keywords: *Crisis, Diversity, Convention, Sustainable, Climate, Consumption of resources, Environmental issues, Awareness*

E094

Green Energy and Sustainable Development

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Change in energy pattern has been perhaps the largest single factor which have rendered environmental degradation in the last few centuries. With coming of the age of industrialisation and shifting of energy consumption from primordial to traditional often referred as hydrocarbon, the humanity has witnessed largest ever environmental degradation in the written human history. In recent years, global energy consumption pattern has been changing from hydrocarbon-based energy to green energy, including solar, wind, hydrogen, hydro, and last but not least, nuclear energy. The international community is further focusing on and investing in the development of necessary technology to smooth harnessing of the greener sources of energy. This paper attempts to discover and underscore how the energy consumption patterns has affected the human-environment relations. Drawing upon the data available at different data sets, this paper argues that the gradual departure from the hydrocarbon-based energy consumption to green energy has potential to drastically redefine the human-environment relations. It concludes that green energy has great transformative potential. However, while moving towards a new green energy regime, the humanity will have to be vigilant and self-corrective, when necessary.

Keywords: *green energy, sustainable development, climate change, greenhouse gases, biodiversity.*

E095

Rhizobium-legume symbiosis and nitrogen fixation under severe conditions and in an arid climate

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Abstract

Biological N2 fixation represents the major source of N input in agricultural soils including those in arid regions. The major N2-fixing systems are the symbiotic systems, which can play a significant role in improving the fertility and productivity of low-N soils. The Rhizobium-legume symbioses have received most attention and have been examined extensively. The behavior of some N2-fixing systems under severe environmental conditions such as salt stress, drought stress, acidity, alkalinity, nutrient deficiency, fertilizers, heavy metals, and pesticides is reviewed. These major stress factors suppress the growth and symbiotic characteristics of most rhizobia; however, several strains, distributed among various species of rhizobia, are tolerant to stress effects. Some strains of rhizobia form effective (N2-fixing) symbioses with their host legumes under salt, heat, and acid stresses, and can sometimes do so under the effect of heavy metals. Reclamation and improvement of the fertility of arid lands by application of organic (manure and sewage sludge) and inorganic (synthetic) fertilizers are expensive and can be a source of pollution. The Rhizobium-legume (herb or tree) symbiosis is suggested to be the ideal solution to the improvement of soil fertility and the rehabilitation of arid lands and is an important direction for future research.

E096

Green accounting for sustainable environment

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Abstract

Green Accounting refers to the process of evaluating the natural asset of the nation for sustainable development. It refers to management of natural economic resources by evaluating overall cost and benefit aspect of environment for the economic development of the nation. Accounting is prepared in the similar fashion of financial accounting at the end of the year. The rationale behind the study is to minimize the negative impact of corporate sector on environment and protect the biodiversity through several corporate social responsibilities. The different measures that can be followed during the business activities are the use of eco-friendly process such as recycling of resources, eco-friendly production process to prevent contamination of air and water resources. India being developing nation, there exist a trade -off between protection of natural resources and economic progress. Thus adopting the green accounting process is acompensatory act on the part of corporate for the welfare of society through protection of environment.

Keywords: *Accounting, Sustainable, Development.*

E097

Sustainable Future: Green Accounting Practices, a way ahead.

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Abstract

Purpose of the study; The purpose of this study is to get a better understanding of the role played by green accounting in the growth of the Indian economy, as well as its aims, stages, form, necessity, and difficulties.
Research Methodology; The paper's research methodology is based on secondary sources, specifically in relation to the role performed by green accounting in the development of India. The article is a research paper on a theoretical notion.
Main Findings; Green accounting is the path that should be taken in order to achieve a more sustainable future. Green Accounting is a method of achieving a stable level of revenue while not depleting the nation's natural resources and so protecting the environment. When the economic damages caused by the exhaustion of natural resources are taken into consideration when computing the national income, this is referred to as Green Accounting. Companies are beginning to incorporate the notion of an environmental factor into their daily operations. Green accounting will assist the company in identifying resource use as well as incurred costs for the organisation. Practically speaking, for emerging nations such as India, it is a dual dilemma of environmental preservation and economic development. This strategy is used to keep track of the costs and advantages of a commercial concern.
Social Implication; India's green accounting and reporting practises are still in their early stages, both inside corporations and at the national level. It is not enough to just express a desire to embrace green accounting practises; action must be taken. It is not enough to simply understand the significance of green accounting; it is also necessary to put that knowledge into practise in the workplace. Not only is it necessary to act quickly, but it is also necessary to put everything into motion simultaneously.

Keywords: *Green Accounting, Natural Resources, Sustainable Future, Environment, Nature*

E098

Pollen grains studies in district Fatehpur for Mellissopalynological investigation

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Abstract

Honey is a unique product of the Nature. Its demand amongst human folk has remained consistently persistent since a time immemorial. This natural product has remained matchless till now, due to the complete absence of any synthetic product comparable to it. It is produced by honey bees as well as some other insects (Crane, 1990). It is

the regurgitated floral nectar of honey bee. On account of diversity in nectar sources along with the diversity in the preferences of bee species for different plant species, countless varieties of honey are available worldwide. Bees store the regurgitated product in multi chambered hive, the colonial abode of bees, after collection of nectar. Collected honey is kept by bees in wax made honeycomb (Crane et al, 1984; Crane, 1990). Honey has a long shelf life as it is not easily fermented (National Honey Board, 2010). Though uses of honey is mostly referred with its medicinal attributes, the product has much wider implications on being a food adjunct for the preparation of a variety of food-stuff as well as being used for various purposes in different religious and cultural practices (https://en.wikipedia.org/wiki/Honey). Any record of the earliest practice of collection and use of honey is lacking. However, the discovery of a cave painting by human being in Valencia, Spain, on the collection of honey by people, of a date almost of 6000 B.C. (Hunt and Atwater, 1915, Crane, 1983) proves the very early association of this natural product with human civilization.

In this paper a site for collection of honey is selected. Khaga District-Fatehpur has been chosen for this purpose. First of all, pollen calendar of this area has been prepared. Authors are discussing this calendar in this paper.

This work is a part of minor project entitled “Mellissopalynological Investigation to Understand Foraging Preferences of *Apis* sp. for Apicultural Practice in District Kaushambi and adjoining areas, U.P." sanctioned by Government of U.P.

E099

Role of green human resource management in environmental sustainability

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Abstract

Those who work in Human Resources departments and are in charge of managing the workforce of companies and helping to establish a great culture have an important role to play in developing sustainability strategies to protect planet Earth. The term Green Human Resource Management is used primarily to refer to the endowment of HRM policies and practices towards the broader corporate environmental agenda. The main objective of greening is to minimize the possible adverse effects of energy consumption and pollution on the environment. The implementation of green technology as a corporate plan will promote business success in an ever-evolving world. The unavoidable fact is that organizations will play a critical role in the fight against global warming. HRM will honour the company's dedication to green practices with the help of management and its employees. Within thousands of businesses today, sustainability plans are constantly growing due to the threats and uncertainties that climate change has brought to our world. Organizations need to carry out an environmental audit that should focus on recycling and help society and its people. It will help workers and members of organizations understand the use of natural resources and promote ecological goods. As a process, Green HRM helps achieve higher productivity with minimal expense. It helps to eliminate ecological waste and makes the best use of renewed goods, equipment and human resource techniques. Its objective is to increase the commitment of workers in a work environment that allows the company to operate in an environmentally friendly manner.

Keywords*:* *HRM, Job satisfaction, Environment sustainability, Green technology*

E100

Perceived environmental hazards, coping strategies and well-being of people living in industrial areas

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Abstract

The major environmental problems of the present world are air, noise, water pollution, depletion of resources, acid rain, hole in the ozone layer, nuclear waste destruction of rain forests, land satiation and famines, loss of bio-diversity, industrial effluence and others. Environmental hazards are identified as perceptions of environmental pollution, pests, noise and odor disturbances, and neighborhood conditions. The main objective of the present study was to assess perceived environmental hazards, experienced stress, coping strategies and well-being of people living in industrial areas. The study was carried out in Delhi, Allahabad and Kanpur. The sample consisted of 128 males and 115 females. A semi-structured interview schedule was developed in Hindi language which consisted of information relating to demographics and scales to measure perceived environmental hazards, experienced stress, coping strategies related to environmental problems and well-being (both physical and psychological). The findings showed that as age increased respondents perceived less environmental hazards, experienced less pollution stress and used lesser amount of problem focused coping strategies to deal with pollution. Respondents with increasing educational levels used greater number of problem-focused strategies to deal with pollution, and reported lesser physical and psychological health problems. The findings further suggest, when individuals perceive greater intensity and lesser control, they experience greater stress. Results also showed that individuals who perceive lesser control over pollution, use greater amount of emotion focused coping, but who perceive greater control over pollution, use greater amount of problem focused coping strategies to deal with pollution. The implications of the findings would be discussed.

Keywords: *Perceived Environmental Hazards, Stress, Emotion focused/Problem focused coping, Physical Health, Psychological Health.*

E101

Ecological Concerns: The Purāṇic Approach

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Abstract

Purāṇic texts recognizes that the human body is composed of and related to five elements (earth, fire water, air and space) and connects each of the elements to one of the five senses. the human nose is related to earth, tongue to water, eyes to fire, skin to air and ears to space. This link between our senses and the elements is the foundation of our human

relationship with the natural world. In ancient time nature and the environment are not outside us. they are an inseparable part of our existence. A quote from vishnu purana states: “as the wide-spreading nargodha (sanskrit for banyan) tree is compressed in a small seed, so at the time of dissolution, the whole universe is comprehended in thee as its germ; as the nargodha germinates from the seed, and becomes just a shoot and then rises into loftiness, so the created world proceeds from thee and expands into magnitude”. The varah purana says, “one who plants one peepal, one neem, one bar, ten flowering plants or creepers, two pomegranates, two oranges and five mangos, does not go to hell.” As in all traditional Societies, the Purāṇic world-view was based on empirical knowledge and traditional values, and not on any scientifically conducted investigations and experimentation as is common in modern societies. In Purāṇic tradition, there was many ritual practices and daily practices to promote ecological balance.

E102

Sustainable development: role of society and an individual citizen.

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Abstract

As the population is expanding, we all are worried about food security and everyone talk about sustainable development, the convention on biological diversity defines sustainability as “the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations. Even United Nations to adopt and commit to a long-term, comprehensive strategy to tackle the world’s greatest challenges related to global sustainable development. The result was the SDGs, a list of 17 goals to achieve a better and more sustainable future for all by 2030.Whenever we talk about sustainable development we think about germplasm conservation, gene banks, seed banks etc. which cannot be easily achieved by society and as individual citizen. This paper deals with how small society and an individual citizen can play a big role in achieving the sustainable development goals and also can play an important role in biodiversity conservation it also explains the role and importance of taxonomist and botanist. Though sustainability is neither simple to define nor easy to implement and, perhaps, our actions as individual citizens of the Earth may have in the long-run the most lasting effects.

E103

Biodiversity conservation strategies of river Gomati for maintaining ecological integrity

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Abstract

The ecological integrity of river generally maintained by habitating different varieties of flora and fauna. The reduce of aquatic biodiversity of river Gomti by destruction of habitat through pollution load is an issue of serious concern in the present. The rapid industrialization, urbanization and agricultural activities such as use of chemical fertilizers and pesticides along the river basin destroy the water quality and natural habitats of aquatic biota. The entry of these pollutants in river body reduces the dissolved oxygen (DO) below 3mgL^{-1} and increase the BOD and COD level above the prescribed limit of WHO. This condition shows that no aquatic life can be sustain for a long time. Several species of flora and fauna of river Gomti are facing the threat of extinction due to the deleterious effect of various pollutants on their health. Therefore, the conservation of biodiversity and its habitats in the river Ganga is required. The present research highlights various strategies to prevent the entry of point and nonpoint pollution sources and also solid waste deposition to improve water flow and maintain the ecological integrity of the river ecosystem.

Keywords**:** *Gomati River, Solid waste, water quality, Aquatic Biodiversity*

E104

Literature and environment – A symbiosis

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Abstract

Symbiosis is a mutually beneficial relationship between different people or groups. In the context of the theme of this Seminar this may appear to be a bit exaggerated but Literature and Environment has been symbiotic since prehistory.

We can comprehend the essence of Literature as an effective tool or a canvas to portray the human – environment interactions.

With the emergence of various environmental moments and their gradual development naturally lured the literary geniuses of their time to pen down various fictional and non – fictional creations that highlighted the human and nature interdependency. The theme of most of the writings in recent era reflects the serious consequences of the imbalance in this mutual relationship. Some of the writers even went as far as 'End of Human Civilization' if human irrationally exploited his Environment.

It was only in late twentieth century when the literary scholars analyzed the environmental concerns and examined the various ways literature treats the subject of nature. They took an

initiative known as 'Ecocriticism'. This movement has far flung contribution in motivating and boosting human consciousness and interest towards our Environment as a whole. For these various forms of Literature, Art and media were extensively used.
Ecocritism is one of the latest additions to the disciplines of Humanities. This is an interdisciplinary study and it accesses the impact of human activities on the environment by examining various forms of narratives and images used in Literature.
In present context there are various challenges related to the declining health of our environment. We need to introspect and device a plan to redeem our coexistence with nature. This question of symbiotic coexistence still awaits an apt answer before we perish along with our literature

"The reasonable man will adjust to the demands of his environment. The unreasonable man expects his environment to adjust to his own needs. Therefore, all progress depends upon the unreasonable man."

-George Bernard Shaw

Keywords: *Symbiosis, Eco criticism, Literature, Environment, Awareness*

E105

Effects of Pesticides on Humans Health

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Abstract

Use of pesticides in agriculture sector poses a serious environmental and public health problem. A pest becomes resistant to a pesticide because it develops physiological changes that protect it from the chemical. In some cases, a pest may gain an increased number of copies of a gene, allowing it to produce more of a protective enzyme that breaks down the pesticide into less toxic chemicals. Such enzymes include esterases, glutathione transferases, and mixed microsomal oxidases. Alternately, the number of biochemical receptors for the chemicals may be reduced in the pest, or the receptor may be altered, reducing the pest's sensitivity to the compound.

Key words: *Pesticides, health effects, pest*

E106

Spirituality and Environmental Sustainability

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Abstract

Environmental sustainability and climate change are multifaceted problems our word is facing nowadays. Environmentalist, educationist and philosophers have had reason ,through emerging knowledge or changes happening to the environment to rethink many aspects of present environmental crisis .In last couple of decades there has been emergence of considerable information regarding environmental sustainability and discourse on spirituality and its role in providing meaning to sustainability is also growing.

The present paper is an attempt to explore the relationship between spirituality and sustainability. In this paper concepts of spirituality and sustainability are discussed then it tries to find out whether there is a detachment from nature, whether this detachment is related in any way to the disconnection from spirituality and whether a possible disconnection from spirituality and nature impacts on environmental sustainability

Finally, this paper includes the ways in which spirituality can help to maintain environmental sustainability.

Keywords: *Environmental, Sustainability and Spirituality*

E107

Seasonal analysis of aerosol properties and its radiative impact one of the Indo – Gangetic Basin region

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Abstract

Atmospheric aerosols, nowadays, play an important role in different atmospheric processes. It has an important influence on climate through its radiative effect and aerosol – cloud interaction. In the present work, analysis of physical and optical properties of aerosol has been done. In this study ground-based measurement is taken using aerosol robotic network (AERONET). Aerosol optical depth (AOD), angstrom exponent (AE), single scattering albedo (SSA), aerosol volume size distribution (AVSD) and radiative forcing (RF) have been analysed season – wise over Kanpur (26.45^0 N, 80.33^0 E) for the year 2017. Inverse relation between AOD and AE during summer and winter was found which shows dominancy of coarse mode particle in summer and higher concentration of fine mode particles in winter season. The result is further verified by the analysis of AVSD which confirms the above finding. SSA values

show that the dominant fractions in summer season are scattering in nature and particles of higher concentrations are mixture of scattering as well as absorbing particles. To see the impact of aerosol particles, RF was analysed and higher value in winter season was found.

E108

Human Dominance of Global Ecosystems Threatens Biodiversity and Environmental Sustainability

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Abstract

Concerns about the loss of Earth's biological diversity sparked two decades of unprecedented scientific intensity, societal importance and intellectual enthusiasm. This research demonstrates that biodiversity is a critical component affecting how ecosystems function. The loss of biodiversity, in particular, has a detrimental effect on the productivity, stability, and efficiency of terrestrial, marine ecosystems, and freshwater. These discoveries come at a time when risks to global biodiversity are quickly increasing as a result of climate change, agricultural land clearing, and pollution driven by the world's growing demand for energy and food. The world faces a monumental, complex challenge: fulfilling global demand for food and energy while protecting the planet's biodiversity and ensuring the long-term viability of both global civilization and the ecosystems upon which all life depends. Solving this problem will need significant advancements in and synthesis of the environmental and social sciences.

Keywords: *Biodiversity, Environmental sustainability, ecosystems*

E109

Preservation of Biodiversity: An Essential Step Towards Human Survival

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Abstract

According to Thomas Lovejoy, "Biodiversity is the sum of the total variety of life on earth. It not only includes the total number of species, but it is actually more complex than that including the genetic diversity within species, the diversity of habitats and biomes, such as the coniferous forests". Tropical forests and tropical oceans are amongst the richest biodiversity regions on the earth. Earth has lost 10% of tropical forests in last 25 years due to human related activities. As per the data from World Wide Fund for Nature (WWF, 2014) the global biodiversity declined by 52% from 1970 to 2010. It is also estimated that 83% of wild mammals have already been lost due to human activities and if the situation continues almost all of the wild mammals on land will be wiped out very soon. Huge losses of many avian, reptilian and amphibian species are also clearly visible. If not halted, this could result into a sixth mass global

extinction in our lifetime. The biggest threats to biodiversity loss are habitat destruction and fragmentation, direct harvest, various forms of pollution, and climate change. Environmental sustainability index is in direct relation to biological diversity. Hence there is an urgent need to protect the diversity so as to sustain life on our earth. Biodiversity conservation must be the top priority in all the nations including India. It is the time to unite and make serious efforts to conserve the biodiversity of the earth, otherwise, the consequences will be far impacting and irreversible. Therefore, we must preserve biodiversity and exploit ecosystems sustainably to ensure the survival of human species.

Keywords: *Biodiversity; Species; Ecosystems sustainably*

E110

Textualizing Orality and Locating Nature-Worship in Northeastern Literature

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Abstract

In Northeastern part of India, literature is experiencing the interface between 'orality' and 'writing orality'. Introduction of English, though as an alien tongue, has started giving shape to the unrecorded oral tradition of myth and folklore in Northeastern literature. The writers belonging to the Northeastern India have made attempt to record the story of multifarious ethnic groups with literary, linguistic, cultural and even mythical diversity.

This paper would I go on to explore the dimension of Arunachal Pradesh in the works of Mamang Dai, particularly the beautiful weave of her myths of the Adi tribe in her fictional work The Black Hill, the plot of which is woven around through the network of various my themes, spirits, supernatural forces, beliefs and dreams. Beyond a very common and stereotypical frame of Northeastern India in literature with the theme of violence, ethnic conflict, militancy and so on; Dai has portrayed its rich cultural heritage of diverse ethnic groups and the serene, pure landscape which loses its blissfulness with the encroachment of mainland politics and culture.

Her The Legends of Pensam, a collection of 19 stories as well as The Black Hill proceed lustfully with its green valley of Arunachal Pradesh through the ordinary but harmonious interrelation of the unexplored ethnic groups with nature, maintaining perhaps the most fragile ecosystem of the world. These stories have beautiful my themes and are part of their routine activities, their rituals, their actions and are centered around worshipping or protecting nature, with a very strong belief that their every activity is being observed by elements of nature, whom they consider as God, and is awarded with good or bad outcome.

However, with these beautiful and eco-friendly narratives, Dai's focus is simultaneously on how these tribes are struggling to remodel their lives for existence against all the odd situation of the modern globalized world as they are forced to alter their way of life according to the changing scenario of the modern time.

Keywords: *Northeast, Myth, Folklore, Orality, Culture, Literature, Adi tribe, Eco-friendly*

E111

Biodiversity conservation as a major tool in maintaining environmental sustainability

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Abstract

Biodiversity, the diversity of life on Earth is defined as the variability among living organisms from all sources, including diversity within species, between species, and of ecosystems. Plants biodiversity play very important role for survival of human beings as well as for maintaining sustainability. Plants are rich source of fibre, food, medicine as well as it also mitigates and provides resilience to climate change, ensuring sustainability of life. In addition, plant biodiversity also provides jobs opportunities in agriculture, fisheries, forestry and many other sectors. Despite of having important role in maintaining sustainability, in current time biodiversity is continuously facing the risk of degradation. Therefore, conservation strategy of plant biodiversity is needed to be improved to preserve environmental sustainability. Hence, the present article deals with importance of biodiversity, major threats to biodiversity along with describing the role of biodiversity in maintaining environmental sustainability.

E112

Controllable $MnFe_2O_4$/reduced graphene oxide nanocomposite for high-performance supercapacitor electrode

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Abstract

Spinel transition metal oxides are now a days one of the most important materials in the fabrication of supercapacitor electrodes, while unexpected stability hinders their practical applications. The main factors associated with these materials for applied energy storage devices are their low specific energy and poor electrical conductivity. To address such issues, herein, we have adopted a simple and facile solvothermal approach to grow $MnFe_2O_4$/hybrid of $MnFe_2O_4$ nanoparticles on the surface of reduced graphene oxide (rGO) and further characterized through X-ray diffraction (XRD), Raman Spectroscopy, Transmission electron microscopy (TEM) and X-ray photo-spectroscopy (XPS) techniques. The structural analyses reveal the successful fabrication of $MnFe_2O_4$ over the surface of the rGO. The rGO nanosheets has been used as a conductive substrate to accelerate the movement of electrons and ions, and also inhibit the aggregation of $MnFe_2O_4$. The capacitive performances of the as-synthesized materials have been accessed through cyclic voltammetry (CV), Galvanostatic charging/discharging (GCD) and electrochemical impedance spectroscopy (EIS) in a three-electrode experimental setup using 3 M KOH aqueous solution as electrolyte. The rGO-$MnFe_2O_4$ hybrid delivers an improved specific capacitance of 332 F g^{-1} at current density of

0.65 A g^{-1} with Galvanostatic charging/discharging (GCD) technique. It has also shown to exhibit a remarkable energy density (33.31 Wh/kg) at power density (27.71 W/Kg) with superior (5% retention) cycle stability after 5000 cycles. These features menifests the as-synthesized $MnFe_2O_4$/hybrid of $MnFe_2O_4$ nanoparticles on the surface of reduced graphene oxide (rGO) to be appropriate for the development of supercapacitor leading to the electrochemical storage applications.

E113

A facile synthesis of marigold flower (Tagetes erecta) derived graphene quantum dots for supercapacitor electrode with excellent cyclic stability

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In the present article, bio-waste Marigold flower (MG; Tagetes Erecta) has been used as a new raw material for the synthesis of highly capacitive graphene quantum dots (GQDs) as an electrode material for supercapacitor energy storage. Various analytical techniques particularly X-ray diffraction (XRD), Raman spectroscopy, high resolution transmission electron microscopy (HRTEM) and Fourier transform infrared (FTIR), have been employed to characterize the as- synthesized GQDs. The Microscopic images obtained using HRTEM analysis clearly reveal the formation of lattice fringe pattern (lattice spacing as ~ 0.22 nm) for GQDs with an average crystallite size ~ 5.7 nm. The super- capacitive performance of the as-synthesized electrode material have been accessed through an electrochemical work station comprising of 3-electrode system. The working electrode made up of GQDs (Active material) on Ni foil (working electrode) with the help of PVDF (binder), has shown specific capacitance of 210 F g−1 at 0.01 V s−1 with cyclic voltammetry (CV), and 200 F g−1 at current density of 2 A g^{-1} with Galvanostatic charging/discharging (GCD) technique. It has also shown remarkable cyclic stability with a capacitance retention of 92% after 3000 cycles. The high magnitude of columbic efficiency (160.08) and energy density (17.78 Wh/kg) signifies the good electrochemical double-layer capacitor (EDLC) behavior of the as-synthesized supercapacitor electrode material and in-turn offers the practical usage of GQDs synthesized through green eco-friendly approach in charge storage applications.

E114

Environmental Accounting Practices in India- Sustainable development

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Abstract

Other name of environmental accounting is green accounting. Environmental Accounting refers to disclosure of environment concerned matters in financial statements of the institutions. It communicates to others or stakeholders how many steps have been taken by the concerned institution for the conservation of environment such as Shareholders,

Government, and Financial Institutions etc. We get all types of resources for our daily life and business from the environment, but how much we give the environment back? No one think about it or we can say only few people have the answer of above question. Now Government has made it compulsory by Companyact 2013 in the name of CSR (Corporate Social Responsibility) and other Acts. Environmental accounting plays a significant role in the CSR of a company. From the last few yearsenvironment accounting is in practice in India but its progress in not at acceptable level

In this paper, it is tried to discuss the recent developments in environmental accounting at the international level comparing with that of India, the progress, and challenges of environmentalaccounting in India, and its future growth.

Keywords: *Environmental Accounting, Corporate environmental Responsibility, sustainabledevelopment, Environment, and economic development.*

E115

Biodiversity and ecological sustainability

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Abstract

For a long time, our understanding of conservation biology and sustainability has evolved independently. Evidence suggests that biodiversity is essential for ecosystem function and theservices on which humans rely, and that it is directly related to the economic, social, and environmental components of sustainability. As a result, integrating research from all of theseareas should and is becoming a priority. This article examines the evolution of each of these fields and, ultimately, their integration. This leads to the exploration of a number of research priorities that allow for the transition from conflict to mutual compatibility between conservation and sustainability objectives. These priorities include research to improve our understanding of (1) the ecosystem services and functions provided by biodiversity that benefit humans; (2) the link between biodiversity and poverty reduction; (3) biodiverse agriculture; (4) the development of indicators that allow for the integrative assessment of biodiversity conservation and sustainability objectives, (5) indigenous knowledge issues.

Keywords: *agriculture; biodiversity; ecosystem service; indigenous knowledge. indicators;poverty reduction; ecosystem function; conservation.*

E116

Genome-wide characterization of Homeobox genes in bread wheat (*Triticum aestivum* L.)

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Abstract

The three amino acid loop extension (TALE) genes of the homeobox superfamily are responsible for numerous biological functions in plants. Herein, we identified a total of 72 TaTALE genes in the allohexaploid genome of bread wheat (Triticum aestivum L.) and performed a comprehensive investigation for gene and protein structural properties, phylogeny, expression patterns, and multilevel gene regulations. The identified TaTALE proteins were further classified into two groups, TaBLHs and TaKNOXs, which were tightly clustered into the phylogeny. The negative Ka/Ks ratio of duplicated genes suggested purifying selection pressure with confined functional divergence. Various signature domains and motifs were found conserved in both groups of proteins. The occurrence of diverse cis-regulatory elements and modulated expression during various developmental stages and in the presence of abiotic (heat, drought, salt) and two different fungal stresses suggested their roles in development and stress response, as well. The interaction of TaTALEs with the miRNAs and other development-related homeobox proteins also suggested their roles in growth and development and stress response. The present study revealed several important aspects of TaTALEs that will be useful in further functional validation of these genes in future studies.

E117

"Biodiversity Conservation and sustainable development"

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Abstract

Biological diversity, abbreviated to **"Biodiversity",** refers to the variety of life forms at all levels of organization, from the molecular to the landscape level. The domestication and breeding of local varieties of crops and livestock's have further affected biodiversity. Biodiversity includes the genetic variability and diversity of life forms such as plants animal microbes etc. Biodiversity is considered as a reservoir of resources to be used for the manufacture of food, medicine, industrial products etc., but with an increased demand of rapid population growth, biodiversity is gradually depleting. Many factors are responsible for causing threat to biodiversity such as habitat destruction, habitat fragmentation, Pollution, over exploitation etc. Human beings should take proper care for the preservation of biodiversity for future generation. Conservation of biodiversity is protection, upliftment and scientific management of biodiversity so as to maintain it at its threshold level and derive sustainable benefits for the present and future generation. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. In the present paper we thoroughly discussed the various issues and so many

aspects relating to Biodiversity conservation and sustainable development. In our ecosystem sustainability should be maintained and checked at every level for their stability.

Keywords: *Biodiversity, Conservation strategies, Hotspot, Sustainable development.*

E118

On Water: Green Approach for the Synthesis of Benzoxazine/Oxazine Fused Isoquinolines and Naphthyridines from ortho-Alkynylaldehydes

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Abstract

An operationally simple and environmentally domino approach for the synthesis of oxazine/benzoxazine fused isoquinolines and naphthyridines by the reaction of ortho-alkynylaldehydes with amines having embedded nucleophiles under mild reaction condition in water is described. The reaction showed selective C-N bond formation on more electrophilic alkynyl carbon resulting in the formation of 6-endo-dig cyclised product. The competitive experiments showed the viability of intramolecular nucleophilic attack over intermolecular attack of external nucleophile. This methodology accommodates wide functional group variation which proves to be useful for structural and biological assessment.

Keywords: *Water, C-N bond formation, isoquinolines/naphthyridines, Green chemistry*.

E119

Carbon Dioxide Utilization for Environmental Sustainability

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Abstract

Permanent carbon dioxide removal (CDR) is necessary to limit global warming to 1.5^0 C over pre industrial levels in many integrated assessment models (IAMs), including the model used by the Intergovernmental Panel on Climate Change (IPCC) report on global warming.[1] New approaches to control global warming are constantly developing. . Reducing existing emissions by moving to cleaner forms of energy is still necessary, but now it is not sufficient to mitigate climate change. The bulk of "safe" warming is already committed in the Earth's system,[2,3] and the alarming situation also call for both deep reductions in existing emissions from large point-sources using carbon capture and storage (CCS), and also for removing CO_2 from the atmosphere (carbon dioxide removal, or CDR).

CO_2 utilization for environment –

It is a process in which carbon dioxide is transformed into useful materials, chemicals and fuels, or carbon dioxide is used directly in crude oil production. In this paper we compared

the potential of following CO_2 utilization methods. CO_2 chemicals, CO2 fuels, Microalgae, CO2-enhanced oil recovery (EOR), Bioenergy with carbon capture and storage , Enhanced weathering, Forestry, and Soil carbon sequestration.

H001

पर्यावरण शिक्षा एवं उसकी प्रासंगिकता

डॉ0 प्रतीक उपाध्याय

काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय,
ज्ञानपुर, भदोही, उ0प्र0

सारांश

जब जब वैश्विक स्तर पर किसी समस्या के समाधान की बात सोची गयी तब–तब एकमत होकर विचारकों ने उसे शिक्षा के माध्यम से पूरी करने का सुझाव दिया, क्योंकि आज भी सभी लोग इस बात से सहमत हैं कि किसी भी परिवर्तन को केवल शिक्षा के माध्यम से ही स्वीकार किया अथवा कराया जा सकता है। मानव जाति का विकास शिक्षा के माध्यम से ही सम्भव हुआ है। वह समस्त ज्ञान जो मनुष्य के लिए आवश्यक है उसे शिक्षा के माध्यम से ही प्राप्त किया जा सकता है और यही कारण है कि वर्तमान पर्यावरण प्रदूषण/समस्या से निजात पाने के लिए पर्यावरण शिक्षा की आवश्यकता सभी विकसित एवम् विकासशील राष्ट्रों द्वारा महसूस की गयी। पर्यावरण को स्वच्छ, सन्तुलित एवं स्वस्थ बनाने के लिए पर्यावरण संरक्षण एवं संवर्धन के लिए मानव का स्वस्थ दृष्टिकोण विकसित करना ही एकमात्र उपाय है अर्थात जनसाधारण को पर्यावरण शिक्षा के माध्यम से ही जागरूक बनाया जा सकता है। पर्यावरण के बारे में जब से चिन्तन प्रारम्भ हुआ और उसके आधार पर पर्यावरण संरक्षण, सुरक्षा और सुधार की बात जब से बुद्धिजीवियों ने उठायी है तभी से इसके लिए नैदानिक तथा उपचारात्मक तरीके अपनाने पर बल दिया गया है। यह बात 'मानव पर्यावरण' पर स्टाकहोम (1972) में आयोजित हुए अन्तर्राष्ट्रीय सम्मेलन में भी रखी गयी है और यह प्रस्ताव पारित किया गया कि पर्यावरणीय समस्याओं को सुलझाने के लिए और उन्हें दूर करने के लिए पर्यावरणीय शिक्षा कार्यक्रम को मूर्तरूप दिया जाय जिसके परिणामस्वरूप शिक्षा के प्रत्येक स्तर पर पर्यावरण शिक्षा प्रदान करने का कार्य प्रारम्भ किया गया है। इसके कुछ सार्थक परिणाम भी देखने को मिले हैं लेकिन अभी बहुत कुछ प्राप्त करना शेष है।युनाइटेड नेशन्स एनवायरमेण्टल प्रोग्राम ने पर्यावरण शिक्षा के निम्नांकित उद्देश्य निर्धारित किये हैं :–

- औपचारिक एवं अनौपचारिक माध्यमों से जनसामान्य में पर्यावरण के प्रति जागरूकता पैदा करना।
- पर्यावरण शिक्षा के माध्यम से लोगों में उन कौशलों को विकसित जो पर्यावरणीय समस्याओं को पहचानने तथा उसका समाधान करने में समर्थ बना सके।
- पर्यावरण शिक्षा द्वारा प्रदूषण निवारण के लिए वृक्षारोपण, सफाई कार्यक्रमों के संचालन, जनसंख्या शिक्षा के कार्यक्रमों के नियोजन व क्रियान्वयन में समाज के सभी वर्गों के लोगों की भागीदारी सुनिश्चित करना।
- समाज के सभी आयु वर्ग तथा लिंग के लोगों को पर्यावरण से सम्बन्धित ज्ञान का प्रचार एवं प्रसार करना ताकि लोग पर्यावरण एवं मानव के सम्बन्ध को समझ सकें और पर्यावरण का संरक्षण कर सकें।
- व्यक्तियों एवं सामाजिक समूहों में पर्यावरण के मूल्यांकन की दक्षता विकसित करना।
- व्यक्तियों एवं सामाजिक समूहों में प्रेम, उदारता, सहअस्तित्व, करुणा, अहिंसा, सद्भाव, समानता, न्याय एवं बन्धुत्व जैसे पर्यावरणीय मूल्य विकसित करना।

अन्त में यही कहा जा सकता है कि पर्यावरण शिक्षा आज की आवश्यकता है। हमें इसकी उपादेयता को स्वीकार करना ही होगा एवं जनसामान्य को इसके कार्यक्रमों की सफलता के लिए अपना सक्रिय योगदान प्रदान करना होगा, क्योंकि पर्यावरण शिक्षा ही अन्ततः हमें 'पर्यावरण की गुणवत्ता' एवं 'जीवन की गुणवत्ता' प्रदान करने वाली है।

H002

भारतीय संस्कृति में पर्यावरण चिंतन

डॉ0 किरण "र्मा

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सारांश

भारतीय संस्कृति अरण्य संस्कृति है। मनुष्य ने उसकी गोद में आंखें खोली और पला बढ़ा है। तब मनुष्य और प्रकृति दोनों एक दूसरे पर निर्भर थे। न कोई वन संरक्षण की राष्ट्रीय नीति लागू थी और न ही पर्यावरण संरक्षण जैसी कोई संस्था। पर्यावरण संरक्षण दैनिक जीवन का अंग था, जिसके मूल में संस्कृति थी। जो आज भी गतिशील है।

धार्मिक कार्यों में वृक्ष पूजा का महत्व आज भी है। पीपल अटल सुहाग का प्रतीक है। नीम में शीतला माता का निवास है (दोनों आक्सीजन देकर पर्यावरण को शुद्ध करते हैं) विल्वपत्र शिव को प्रिय हैं, तुलसी भोग नैवेद्य में पवित्रता की सूचक है। छोटी वनस्पतियों में दूर्वा, कुश, पलाश लोक संस्कृति में समाहित हैं। पौराणिक आख्यानों में समुद्र मंथन से कल्पवृक्ष का निकलना, देवताओं द्वारा उसका संरक्षण, ऐरावत हाथी और कामधेनु गाय की रक्षा, द्वापरयुग में गोवर्धन पूजा का श्रीगणेश। ये सब लौकिक जीवन में पारिस्थितिकी संतुलन को बनाए रखने की सांस्कृतिक पहल थी। मैंने अपने शोध पत्र में पर्यावरण संरक्षण की सांस्कृतिक परंपरा पर विचार किया है। यथा––

सूखी गइले ताल रे,सूखी गइले पोखर
कमल गइले कुम्हिलाय
गंगा जमुन बीच रेत जे पड़ि गइले
कइसे होई गऊरा के बियाह?

H003

पर्यावरणीय सम्पोष्यता और योग दर्शन

डॉ0 प्रमोद कुमार सिंह

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सारांश

यदि यह कहा जाये कि मानव की विकास यात्रा, मानव की पर्यावरण के साथ चलने और उसके उपयोग का इतिहास है तो अनुचित न होगा। इस विकास यात्रा में वह पर्यावरण का सतत उपयोग करता रहा है जिसके कारण पर्यावरण पर प्रभाव पड़ा है। भारतीय चिन्तकों और दार्शनिकों ने

पर्यावरणीय विकास की सही दिशा मार्गदर्शित करने का प्रयास किया है जिसे वह 'जीवन धारण करने योग्य विकास' कहते है। यह ऐसा विकास है जो मानव जीवन की उत्तमता को पर्यावरण को बिना हानि पहुँचाए बनाये रखता है। इस जीवनदायी विकास में पर्यावरण के साथ–साथ मानव जीवन के विभिन्न आयामों, यथा सामाजिक, सांस्कृतिक, राजनीतिक आर्थिक एवं मनोवैज्ञानिक पक्षों का भी ध्यान रखा जाता है।

महर्षि पतंजलि के योग दर्शन में चित्त की वृत्तियों के निरोध को योग कहा जाता है। हमारे इस पारिस्थितिकी तन्त्र के एक प्रमुख अंग मनुष्य के चित्त के अस्थिर होने या विक्षेपकारी कार्यो में रत होने के फलस्वरूप हमें वर्तमान में पर्यावरणीय संकट के विभिन्न आयामों से जूझना पड़ रहा है। जब तक मनुष्य का चित्त स्थिर नहीं होगा, उसकी चित्तवृत्तियों का निरोध नहीं होगा तब तक हम वर्तमान समय में समाज के सम्मुख उपस्थित पर्यावरणीय संकट का सफलतापूर्वक सामना नहीं कर सकते है। चित्त वृत्तियों का निरोध अष्टांग योग द्वारा सम्भव है। अष्टांग योग की साधना पद्धति का आधार संयम है इसमें शरीर–मन–इन्द्रिय–कर्म के संयम पर बल दिया गया है। यह भौतिक और मानसिक अनुशासन द्वारा संयमित जीवन यापन का उपदेश देकर साधक को समाधि के लिए तैयार करके कैवल्य प्राप्त कराना चाहता है पर इसके साथ ही वह साधक के जीवन को समाज और पर्यावरणीय जगत के लिए उपयोगी भी बनाता है। इस प्रकार योग दर्शन एक ऐसा धर्मशास्त्र, निरपेक्ष कर्तव्यशास्त्र, आचारशास्त्र या नीतिशास्त्र माना जा सकता है जो पर्यावरणीय दर्शन की दृष्टि से सम्पोष्य विकास को प्रेरित करने के लिए एक अति उपयोगी दर्शन है।

शब्द कुंजिका– *सम्पोष्य विकास, चित्त की वृत्तियों का निरोध, अष्टांग मार्ग, शरीर–मन–इन्द्रिय–कर्म के संयम पर बल, भौतिक और मानसिक अनुशासन।*

H004

जैव विविधता के संरक्षण का महत्त्व

डॉ0 सुरंगमा यादव

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सारांश

जैव विविधता पृथ्वी पर एक पूरे क्षेत्र में वनस्पतियों और जीवों की विविधता को संदर्भित करती है। वनस्पतियों और जीवों की विविधता जितनी अधिक होगी, यह विभिन्न प्रजातियों के अस्तित्व के लिए उतना ही अच्छा होगा। औद्योगिकीकरण, वनों की कटाई, बढ़ते प्रदूषण, ग्लोबल वार्मिंग और जनसंख्या वृद्धि ने जैव विविधता को बहुत प्रभावित किया है। हम हर साल पौधों, जानवरों, समुद्री जीव, कीड़े और अन्य जीवों की कई प्रजातियों को खो रहे हैं।

विभिन्न कारणों से जैव विविधता का संरक्षण अत्यंत आवश्यक हो गया है। यहाँ कुछ मुख्य कारण हैं जिनकी वजह से हमें जैव विविधता का संरक्षण करना चाहिएरू समृद्ध जैव विविधता खाद्य श्रृंखला की प्रक्रिया में मदद करती है क्योंकि जानवरों और पौधों की विभिन्न प्रजातियां अन्य जानवरों और जीवित जीवों के भोजन के स्रोत के रूप में काम करती हैं।

पोषण संबंधी जरूरतों को पूरा करने के लिए हमें विभिन्न प्रकार के फल, सब्जियाँ, मीट, मछलियाँ और अन्य चीजों की आवश्यकता होती है। पौधों और जानवरों की विविधता में गिरावट का मतलब हमारे द्वारा खाए जाने वाले भोजन की विविधता में गिरावट और इससे पोषक तत्वों की कमी हो सकती है।

पेड़ –पौधे वातावरण से कार्बन डाइऑक्साइड और अन्य हानिकारक गैसों को अवशोषित कर जीवन दायिनी ऑक्सीजन छोड़ते हैं। कुछ वृक्षों में हवा को शुद्ध करने और वातावरण को साफ रखने की अधिक क्षमता होती है। पेड़– पौधों की संख्या और प्रकार में गिरावट हवा की गुणवत्ता को नकारात्मक रूप से प्रभावित कर सकती है।कई कीड़े–मकोड़े, जीव– सूक्ष्मजीव जैसे केंचुआ, कवक और बैक्टीरिया विभिन्न स्तरों पर काम करते हैं और मिट्टी को उपजाऊ बनाते हैं और इसके स्वास्थ्य को बनाए रखते हैं। फसलों के लिए स्वस्थ और उपजाऊ मिट्टी निश्चित रूप से बेहतर है। इस तरह की प्रजातियों का नुकसान कृषि की दृष्टि से भी एक बहुत बड़ी क्षति है।विभिन्न रोगों के उपचार के लिए पेड़–पौधों की कई प्रजातियों का उपयोग किया जाता है। औषधीय महत्व के कई पौधे अतीत में विलुप्त हो गए हैं और कई अन्य वैज्ञानिकों द्वारा अपनी उपयोगिता की खोज करने से पहले ही विलुप्त होने की संभावना है।

इस प्रकार, पृथ्वी पर प्राणियों के अस्तित्व के लिए जैव विविधता की समृद्धि आवश्यक है। इस विषय को गंभीरता से लिया जाना चाहिए और जैव विविधता के संरक्षण के लिए कड़े कदम उठाए जाने चाहिए।

H005

जैव विविधता एवं पर्यावरण सतत विकास

प्रियंका कुमारी

दीपनारायण शिक्षक प्रशिक्षण महाविद्यालय,
चांदन बांका (बिहार)

सारांश

जैव विविधता एक प्रकार से इस भूमंडल पर मौजूद जीवन की विविधता एवं उसमें समयानुसार परिवर्तन शीलता को संदर्भित करता है। जबकि सतत विकास का तात्पर्य इस प्रकार के विकास से है जो वर्तमान पीढ़ी की आवश्यकताओं की पूर्ति इस प्रकार करता है कि आने वाली पीढ़ी को अपनी आवश्यकताओं को पूर्ण करने के लिए किसी प्रकार का समझौता ना करना पड़े। यह सतत या धारणीय विकास का कहलाता है। हमारी प्रकृति में उपस्थित विविध जीव जंतु प्रजातियों एवं अन्य संसाधनों को संरक्षण प्रदान करना जैव विविधता संरक्षण कहा जाता हैप् जैविक संसाधनों का प्रबंधन एवं उनकी गुणवत्ता बनाए रखने की आवश्यकता है क्योंकि जैविक विविधता मानव सभ्यता के विकास का स्तंभ है विश्व समुदाय इसके महत्व को समझता है। इसीलिए 22 मार्च को अंतर्राष्ट्रीय जैव विविधता दिवस मनाया जाता है वर्तमान और भविष्य की पीढ़ियों के लिए औसतन गुणवत्ता बनाए रखना जरूरी है। इस लक्ष्य को प्राप्त करने में भारत की रफ्तार काफी धीमी है किंतु मजबूत इरादों के साथ भारत इस दिशा में सकारात्मक प्रयास कर रहा है। विश्व समुदाय की जवाबदेही एवं दायित्व है कि जैव विविधता के संरक्षण एवं सतत विकास पर प्रकाश डालें।

H006

जैविक विविधता का संरक्षण आवश्यकता एवं उद्देश्य

डॉ अरविंद कुमार पाण्डेय

शिक्षक प्रशिक्षण महाविद्यालय, देवघर (झारखंड)

सारांश

प्रकृति में विद्यमान वनस्पतियों जीव जंतुओं सूक्ष्म जीवों सहित प्रकृति में विध्यमान वनस्पतियों जीव–जंतुओं सूक्ष्मजीवों सहित समस्त जीवधारी को पृथ्वी पर मानव सभ्यता के विकास में सहभागी है ।इस धरती को रहने एवं उपभोग करने हेतु एक सुंदर स्थान का स्वरूप प्रदान करते हैं। व्यवहार आकृति प्रकृति एवं आकार में यह सजीव जीवधारी भिन्न–भिन्न रूपों में धरातल के हर क्षेत्र में पाए जाते हैं इन जीव धारियों में पाई जाने वाली असाधारण वीरता हमारे ग्रह के अभिन्न एवं महत्वपूर्ण विभागों की रचना करते हैं। वर्तमान में निरंतर बढ़ती जनसंख्या के कारण जैव विविधता को गंभीर खतरों का सामना करना पड़ रहा है । इनकी विविधता को अक्षुण बनाए रखने की आवश्यकता है । स्पीसीज विविधता, अनुवांशिक विविधता अथवा पारितंत्र की विविधता इन सभी के स्तरों पर इन्हे सुरक्षित रखने की आवश्यकता है क्योंकि इसमें से एक जैसी जीवाणु से लेकर पौधों एवं जंतुओं तक प्रत्येक स्पीशीज अनुवांशिक सूचना का विशाल भंडार रखती है। माइक्रो प्लाज्मा में जीन की संख्या 450 से 700 होते हैं। यही जीन व् गुणसूत्र विविधता को दर्शाते हैं।

समाज सरकार और व्यक्तिगत का उद्देश्य होना चाहिए कि जीव विविधता को समझ कर उसका संरक्षण करें । वन्यजीव परियोजनाओं के प्रति जागरूक रहें। राष्ट्रीय व अंतरराष्ट्रीय संसाधनों द्वारा निर्गत निर्देशों का पालन किया जाए ।विलुप्त संकटापन्न विलोपित स्पीसीज को समझ कर उनमें विवेक को समझ सके । समुचित प्रयास से ही जैव विविधता को बचाया जा सकता है।

H007

साहित्य और पर्यावरण

दिलीप कुमार द्विवेदी

शोधार्थीपी–एच.डी.राजनीति विज्ञान विभाग
राजकीय पी०जी० मुसाफिरखाना,अमेठी (उ०प्र०)
Email: badshah.dwivedi@gmail.com

सारांश

साहित्य और पर्यावरण चेतना मनुष्य के जीवन एवं पर्यावरण एक दूसरे के पर्याय हैं। जहां मानव का अस्तित्व पर्यावरण से है वहीं मानव द्वारा निरंतर किये जा रहे पर्यावरण के विनाश से हमें भविष्य की चिंता सताने लगी है। हमारे प्राचीन वेदो ऋग्वेद, सामवेद, यजुर्वेद एवं अथर्ववेद में पर्यावरण के महत्व को दर्शाया गया है।

साहित्य में प्रकृति और पर्यावरण में अंतर नहीं किया जाता जो किया जाना जरूरी है। प्रकृति और मनुष्य का साथ मनुष्य के इस धरती पर अस्तित्व के साथ ही है। मनुष्य ने अपने अस्तित्व की रक्षा के लिए आरंभ में प्रकृति को समझने, उसे नियंत्रित करने और अनुकूल बनाने की कोशिश किया। फिर भी प्रकृति के अनसुलझे जटिल रहस्यों के आगे उसे कई बार चमत्कृत होना पड़ा। बड़ी मात्रा में प्रकृति और उसकी शक्तियां मनुष्य के नियंत्रण से बाहर ही रहीं। मनुष्य प्रकृति की देखी–अनदेखी शक्तियों से डरा और उसे प्रसन्न करने के लिए उसकी वंदना में ऋचा गीत लिख डाले। दुर्दम्य प्रकृति को उसने उस मात्रा में अपने अनुकूल बना लिया जितना कि उसके जीवन रक्षा के लिए आवश्यक था। वेद की

ऋचाएं हों या आदि कवि की वाणी, सबमें प्रकृति और मनुष्य का सहज संबंध व्यक्त है। रामायण–महाभारत, कालिदास, संस्कृत साहित्य की अन्य महाकाव्यात्मक कलेवर वाली रचनाओं में प्रकृति और मनुष्य का सहज संबंध नजर आता है।

शब्द कुंजिका– प*र्यावरण, साहित्य, प्रकृति, मानव और अस्तित्व*

H008

जलवायु परिवर्तन : भारतीय दृष्टिकोण

सन्तोष कुमार आर्य

असिस्टेन्ट प्रोफेसर बी0एड0,
काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय, ज्ञानपुर, भदोही

सारांश

भारत जलवायु परिवर्तन के संदर्भ में सजग भी है और इसके नियत्रण एवं संरक्षण के प्रति प्रतिबद्ध भी। इसने न सिर्फ विभिन्न वैश्विक पर्यावरणीय सम्मेलनों में ग्लोबल वार्मिग (वैश्कि ताप) संकट के प्रति विश्व समुदाय को सजग किया है, बल्कि अमेरिका सहित विश्व के अन्य विकसित देशों, जो अत्यधिक मात्रा में ग्रीन हाउस गैसों का उत्सर्जन करते है, को इस दिशा में उत्तरदायित्वपूर्ण आचरण भी करने को कहा। भारत ने हमेशा से यू एन एफ सी सी के मसौदे को स्वीकारा है।

वर्तमान समय में पर्यावरणीय जागरूकता एक सामाजिक आंदोलन की ओर अग्रसर है तथा विश्व में भारत इसमें मुख्य भूमिका अदा कर रहा है। वैश्विक ताप–वृद्धि जलवायु परिवर्तन के लिये सबसे उत्तरदायी कारणो में से एक है। वैश्विक ताप–वृद्धि मुख्यतया मानव–गतिविधियों की देन है। अंतर्राष्ट्रीय प्रयत्न के फलस्वरूप जलवायु परिवर्तन की समस्याओं को सुलझाने के लिए अस्तित्व में लाया गया (यू एन एफ सी) युनाइटेड नेशसंस फ्रेमवर्क कंवेशन आन क्लाइमेट चेंज (1992) ने एक नई दिशा प्रदान की।

H009

निराला के काव्य में प्राकृतिक उपादान

डॉ0 श्रीश कुमार उपाध्याय

विभाग–हिन्दी,
काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय, ज्ञानपुर, भदोही

सारांश

मनुष्य प्रकृति का सर्वश्रेष्ठ उपहार है। वह उसी की गोद में पला–बढ़ा। साहित्य सर्जना अपने परिवे"ा से इतर नहीं हो सकती, इसलिए साहित्य सर्जक अपने काव्य में प्रकृत के मनोहारी एवं विध्वंसक दोनों रूपों का चित्रण करते हैं। सूर्यकांत त्रिपाठी 'निराला' छायावाद के श्रेष्ठ कवि हैं। इनके व्यक्तित्व की भाँति ही प्रकृति वर्णन में भी उत्तरोत्तर निखार आया है। 'जूही की कली' से लेकर 'बादल राग' इसका ज्वलंत उदाहरण है। निराला की प्रकृति जड़ नहीं बल्कि इसपर मानवीय भावनाओं का आरोपण दृष्टिगोचर होता है। इसी कारण प्रकृति भी सुख–दुखात्मिका हो गयी है। प्रकृति के मृदु और कठोर दोनों :पों का द"ान निराला जी के काव्य में होता है –

अरे वर्श के हर्श!
बरस तू बरस रसधार!
पार ले चल तू मुझकों,
बहा, दिखा मुझको भी निज
गर्जन–गौरव संसार!

इस शोध में निराला जी की कविता 'जूही की कली', 'बादल राग', 'वन बेला', 'नए पत्ते', 'संध्या सुन्दरी' को लिया गया है।

शब्द कुंजिका– *बादल, झरना, उपवन, फूल, सागर।*

H010

पारिस्थितिकी मनोविज्ञान का महत्व

श्री अरविंद

असिस्टेंट प्रोफेसर मनोविज्ञान
नेताजी सुभाष चंद्र बोस राजकीय स्नातकोत्तर
महाविद्यालय अलीगंज लखनऊ

सारांश

इकोसाइकोलॉजी एक अंतःविषयक क्षेत्र है जो संश्लेषण पर केंद्रित पारिस्थितिकी और मनोविज्ञान को बढ़ावा देता है। इसे पारंपरिक मनोविज्ञान से अलग रखा जाता है जो मानव और पारिस्थितिकी के बीच भावनात्मक बंधन के अध्ययन पर केंद्रित है। केवल व्यक्तिगत या पारिवारिक विकृति के संदर्भ में व्यक्तिगत दर्द की जांच करने के बजाय , इसका मानव दुनिया से अधिक के व्यापक संबंध में विश्लेषण किया गया है। एक केंद्रीय आधार यह है कि जहां आधुनिक दुनिया द्वारा मन को आकार दिया गया है, वहीं इसकी अंतर्निहित संरचना प्राकृतिक गैर–मानवीय वातावरण में बनाई गई है। पारिस्थितिकी मनोविज्ञान मनुष्य और प्रकृति के बीच भावनात्मक संबंध का विस्तार और उपाय करना चाहता है, लोगों को आध्यात्मिक रूप से प्रकृति के करीब लाकर मनोवैज्ञानिक रूप से उनका इलाज करता है ।

पारिस्थितिकी का प्राथमिक ध्यान मनुष्यों और उनके पर्यावरण पर उनके प्रभाव और बदले में, पर्यावरण का मानव समाज पर पड़ने वाले प्रभाव पर है। पिछले दो दशक में, पर्यावरण आंदोलन ने ग्रह के स्वास्थ्य को एक सामाजिक मुद्दे में बदलने में सफलता प्राप्त की है। मानव और वैश्विक स्वास्थ्य को और समझने के लिए, पारिस्थितिक मनोविज्ञान एक अंतःविषय क्षेत्र के रूप में उभरा है। पारिस्थितिकी मनोविज्ञान पारिस्थितिकी और मनोविज्ञान के बीच संबंध पर केंद्रित है और इसलिए मनुष्य का ग्रह के साथ भावनात्मक बंधन है। यह उभरता हुआ क्षेत्र मानता है कि पारिस्थितिकी को मनोविज्ञान की आवश्यकता है और मनुष्य सीधे प्रकृति से आत्मा और आत्मा के माध्यम से जुड़ा हुआ है। जलवायु परिवर्तन को संबोधित करने के लिए कई अलग–अलग दृष्टिकोण हैंय पारिस्थितिक मनोविज्ञान मानव अस्तित्व को एक सार्वभौमिक परिप्रेक्ष्य में रखता है जिसे नजरअंदाज नहीं किया जा सकता है। मानव जीवन और समस्त जीवन का अंतर्संबंध निर्विवाद है और सार्वभौमिक, पर्यावरणीय परिवर्तन के लिए इसे समझना आवश्यक है।

सिगमंड फ्रायड ने अपनी 1929 की पुस्तक सिविलाईजेसन एंड इट्स डिसकानटेंट्स में सभ्यता और व्यक्ति के बीच बुनियादी तनावों पर चर्चा की । उन्होंने मन की आंतरिक दुनिया और पर्यावरण की बाहरी दुनिया के बीच अंतर्संबंध को मान्यता देते हुए कहा

"हमारी वर्तमान अहंकार–भावना, इसलिए, बहुत अधिक समावेशी का केवल एक सिकुड़ा हुआ अवशेष है – वास्तव में, एक सर्व–आलिंगन–भावना जो इसके बारे में अहंकार और दुनिया के बीच एक अधिक अंतरंग बंधन से मेल खाती है।"

H011

वैदिक साहित्य और पर्यावरणीय चेतना : एक अनुशीलन

डा0 अंजना

असिस्टेट प्रोफेसर प्राचीन इतिहास,
काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय, ज्ञानपुर, भदोही

सारांश

मानव ही नहीं अपितु सृष्टि के समस्त जीव जंतुओं का समग्र परिवे"ा पारिस्थितिकी से ही विकसित तथा प्रभावित होता रहा है। इतिहास हमें बताता है कि प्रत्येक मानवीय सभ्यता प्रकृति की गोद में ही जन्मी, फली–फूली है और अंततः उसी में समा गई है। सिंघु घाटी की सभ्यता हो अथवा मिस्र और मेसोपोटामिया की सभ्यता, सभी नदियों से प्रारंभ होकर नदियों में विलीन हुई। इस प्रकार यह निर्विवाद सत्य है कि सृष्टि के समस्त प्राणियों एवं उनके कियाकलापों का नियामक प्रकृति ही रही है। वर्तमान युग विज्ञान एवं सूचना प्रौद्योगिकी का युग है। इसके जरिये मनुष्य असंभव को भी संभव बनाने का दंभ भर रहा है। विकास के रोज नए–नए बनते लक्ष्यों तक पहुँचने की जद ने मनुष्य और प्रकृति को भी आमने –सामने लाकर खड़ा कर दिया है। प्रकृति और मनुष्य की इच्छाओं के बीच संतुलन आज के युग की सबसे बड़ी आव"यकता है। वैदिक साहित्य में इस प्रकार के ज्ञान विज्ञान के विषयों का अथाह और समृद्ध भण्डार प्राप्त होता है। धरती प्रत्येक मनुष्य की जरूरतों को पूरा कर सकती है, परन्तु मनुष्य के लालच को पूरा करने के लिए ऐसी हजार धरती भी कम पड़ेंगी। ऐसे में हमारे वैदिक साहित्य मार्ग द"ाक का कार्य करते हैं। अथर्ववेद में कहा गया है कि 'माता भूमि : पूत्रो अहं पृथिव्याः। अर्थात 'भूमि मेरी माता है और मैं उसका पुत्र हूँ।' यजुर्वेद में भी कहा गया है– नमो मात्रे पृथिव्ये नमो मात्रे पृथिव्याः। अर्थात 'माता पृथ्वी (मात्भूमि) को नमस्कार है, मातृभूमि को नमस्कार है।' इस शोध पत्र में वैदिक साहित्य में उल्लिखित पर्यावरणीय चेतना से सम्बन्धित विवरणों को प्रस्तुत किया गया है।

शब्द कुंजिका– *वेद, धर्म, साहित्य, पर्यावरण, पारिस्थितिकी, विज्ञान, प्रकृति, संस्कृति।*

H012

पर्यावरण का सामाजिक ह्रास

डॉ0 सिंह अरूण कुमार लक्ष्मण

(असिस्टेंट प्रोफेसर) समाज"ाास्त्र विभाग,
काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय, ज्ञानपुर, भदोही

सारांश

स्वतंत्रता प्राप्ति के बाद से सिंचाई, रासायनिक उर्वरको के उत्पादन, ऊर्जा जनन, स्टील आदि के लिए बड़े पैमाने की विकास परियोजनाओं की योजनाएं बनाई गई तथा इनमे से कई अब तक पूरी की जा चुकी है। सामान्यतः जहॉ भी एक विकास परियोजना प्रारम्भ की जाती है वहॉ उसके लिए कृषि व वन भूमि ली जाती है। वहॉ रहने वाले लोग विस्थापित होते हैं। प्रभावित व्यक्तियों को अपने घर तथा कारोबार छोड़ने पड़ते हैं तथा नई नौकरियों एवं रहने के लिए नये स्थान ढूढ़ने पड़ते है। इनसे बहुत सारे लोगो के जीवन निर्वाह की पद्धति में, रोजगार के स्वरूपो में तथा सामाजिक संगठनों में बहुत अन्तर आता है। जहॉ विकास परियोजनाओं से एक तरफ कुछ लोगों को बिजली,भोजन,पानी तथा रोजगार उपलब्ध कराया गया है वहीं दूसरी ओर लाखों लोगों को विस्थापित किया गया है तथा इनमें से अधिकतर शहरों में जाकर बस गए है। बड़े शहरो में पहले से ही आबादी अधिक है। अतः बाहर से आए हुए लोग गन्दी बस्तियों, सड़क की पटरियों पर तथा झुग्गियों में बहुत ही अस्वस्थकर परिस्थितियों में रहते है जिससे उनके स्वास्थ्य को भी खतरा रहता है। ये बस्तियॉ सबसे बुरे प्रकार की पर्यावरणीय अपकर्ष प्रस्तुत करती हैं। यद्यपि हमारे दे"ा के विकास के लिए ये विकास परियोजनाएं आव"यक हैं परन्तु योजना ठीक से न बनानें तथा उपयुक्त व्यवस्था न करने के परिणामस्वरूप में जटिल समस्याएं उत्पन्न हुई है।

शब्द कुंजिका– *पर्यावरण सामाजिक ह्रास*

H013

पराली दहन

हेमन्त कुमार निराला [1] एवं मनीषा [2]

सहायक प्रोफेसर–अकार्बनिक रसायन,
[1] डॉ0 भीम राव आम्बेडकर राजकीय स्नातकोत्तर महाविद्यालय, फतेहपुर
सहायक प्रोफेसर–गृह विज्ञान,
[2] दीन दयाल उपाध्याय राजकीय महाविद्यालय, सहजनवा, गोरखपुर

सारांश

खेतों में फसलों के अव"ोष को पराली कहते हैं। इन फसली अव"ोषों सहित खर–पतवारों एवं फसलों को नुकसान पहुँचाने वाले कीटों से निजात पाने के निये किसान इन्हे खेतों में ही जलाकर नष्ट करते हैं। खेतों में पराली नष्ट करने हेतु जलाना सबसे सस्ता व आसान साधन है। परन्तु इससे हमारे पर्यावरण को बहुत अधिक नुकसान होता है। पराली जलाने से बड़ी मात्रा में उत्पन्न उष्मा, हानिकारक गैसें, सूक्ष्म कण (गर्दा) हमारे वायुमण्डल में जाकर ग्लोबल वार्मिंग व वायु प्रदूषण का एक बड़ा कारण बनतें हैं। जिसके परिणाम स्वरूप हृदय गला एवं श्वास संबंधी बिमारियों का खतरा बढ़ जाता है।

दृ"यता कम हो जाने के कारण दुर्घटनाओं की संभावनायें बढ़ जाती हैं। भारत में उत्तर प्रदे"ा, पंजाब, हरियाणा और उत्तराखण्ड राज्यों में पराली जलाये जाने के कारण राष्ट्रीय राजधानी क्षेत्र समेत पूरी दिल्ली में स्मॉग इतना बढ़ जाता है कि आँखों में जलन, गले में व श्वांस लेने में तकलीफ होने लगती है। हृदय रोगियों की संख्या व उनकी तकलीफें बढ़ जाती हैं।

पराली जलाने से लाभदायक सूक्ष्म जीव नष्ट हो जाते हैं। बहुत से पोषक पदार्थ जैसे–कार्बन, नाइट्रोजन, पोटै"ायम, फॉस्फोरस, सल्फर नष्ट हो जाते हैं, जिससे खेतों की उर्वरा शक्ति कम हो जाती है। यदि पराली को खेतों में ही गला दिया जाये तो पोषक पदार्थ खेतों में बने रहेंगे और पर्यावरण को नुकसान से बचाया जा सकता है। खेत की मिट्टी भुरभुरी होगी, जल धारण की क्षमता भी बढ़ेगी और अगले फसलों में उर्वरक की मात्रा कम लगेगी।

इसके अलावा पराली को प"ाुओं के चारे के रूप में, कम्पोस्ट खाद बनाने में, ग्रामीण क्षेत्रों में मड़ई बनाने, म"ारूम उत्पादन में, बायोमास उर्जा हेतु, कागज व जैव इथेनॉल बनाने में इस्तेमाल किया जा सकता है।

वायु प्रदूषण नियंत्रण कानून 1981 के अन्तर्गत एवं आई0पी0सी0 की धारा 188 के तहत् पराली जलाना अपराध है, इसके बावजूद प्रत्येक सीजन में पराली जलाया जाता है।

H014

जैव विविधता (Biodiversity)

राज कुमार पांडेय

बैद्यनाथ कॉलेज ऑफ़ एजुकेशन
मिल्की सौर चांदीपुर वारिसलीगंज नवादा बिहार

सारांश

आज पृथ्वी पर पाई जाने वाली जैव विविधता में कई लाखों अलग – अलग जैविक प्रजातियाँ हैं, जो चार अरब वर्षों के विकास का उत्पार है। जैवविविधता दो शब्दों के मेल से बना है "जैव" अर्थात जिसमे जीवन और " विविधता " अर्थात भिन्नता। जैवविविधता के जनक "थॉमस यूजीन लवजाय" ने 1980 में जैविक(biological) और विविधता(diversity) शब्दों को मिलाकर (biological diversity) या जैविक विविधता शब्द को बनाया था। परन्तु यह शब्द उपयोग में बड़ा महसूस होता था, इसलिए (biological diversity) शब्द 1985 में डब्ल्यू. जी. रोसेन ने "Biodiversity " या जैव विविधता शब्द बनाया। जैव विविधता विभिन्न स्रोतों से जीवित जीवों के बीच का अन्तर है। जिसमे स्थलीय, समुद्री और रेगिस्तानी पारिस्थितिक तन्त्र पारिस्थितिक परिसर शामिल होते हैं, जिनमे से सभी एक-दुसरे के पूरक होते हैं।

जैव विविधता के प्रकार :- जैव विविधता तीन प्रकार की होती है-1.आनुवंशिक विविधता 2.प्रजातीय विविधता 3.पारितंत्र विविधता।

प्रजातियों में पायी जाने वाली आनुवंशिक विभिन्नता को आनुवंशिक विविधता के नाम से जाना जाता है। यह आनुवंशिक विविधता जीवों के विभिन्न आवासों में विभिन्न प्रकार के अनुकूलन का परिणाम होता है। प्रजातियों में पायी जाने वाली विभिन्नता को प्रजातीय विविधता के नाम से जाना जाता है। किसी भी विशेष समुदाय अथवा पारितंत्र के उचित कार्य के लिये प्रजातीय विविधता का होना अनिवार्य होता है।

H015

पर्यावरण और समाज

''प्रत्येक जीव अपने पर्यावरण की उपज है''

डॉ0 घन"याम मिश्र (डी.लिट्.)

एसोसिएट प्रोफेसर, समाजषास्त्र
का"ाी नरे"ा राजकीय स्नातकोत्तर, महाविद्यालय, ज्ञानपुर, भदोही

सारांश

मानव अपने चारों ओर कई प्राकृतिक शक्तियों एवं पदार्थो जैसे चांद, तारे, सूरज, पृथ्वी, हवा, नदी, पहाड़, जंगल, जलवायु एवं ताप आदि से तथा कई सामाजिक–संस्कृतिक तथ्यों जैसे समाज, समूह, संस्था, प्रथा, लोकाचार, नैतिकता, धर्म, सामाजिक मूल्यो आदि से घिरा हुआ है। जिसे उसका पर्यावरण कहा जा सकता है।

इस प्रकार प्राणी के चारों ओर पायी जाने वाली सभी प्रकार की प्राकृतिक, सामाजिक, सांस्कृतिक वस्तुऍ एवं द"ाऍ उसका पर्यावरण कहलाती है। ई.ए. रॉस अपनी पुस्तक ''सो"ाल कन्ट्रोल'' में लिखते है। ''पर्यावरण कोई भी बाहरी शक्ति है, जो हमें प्रभावित करती है।''

पी.एच. लैण्डिस ने अपनी पुस्तक ''सो"ाल कन्ट्रोल'' में सम्पूर्ण पर्यावरण को तीन भागो में विभक्त किया है।

1. **प्राकृतिक पयावरण** :– जिसके अन्तर्गत वे सभी प्राकृतिक शक्तियॉ एवं वस्तुऍ आती है। जिनका निर्माण प्रकृति ने किया है।
2. **सामाजिक पर्यावरण** :– इसके अन्तर्गत मानवीय सम्बन्धों से निर्मित सामाजिक समूह, संगठन, समाज, समुदाय, समीति, संस्था आदि आते है। जो व्यक्ति को जन्म से लेकर मृत्यु तक प्रभावित करते है। उसका सामाजीकरण करते है और उसे मानव की संज्ञा प्रदान करने में सहायक होते है।
3. **सांस्कृतिक पर्यावरण** :– इसके अन्तर्गत धर्म, नैतिकता, प्रथाऍ, लोकाचार, कानून, प्रोद्योगीकी, व्यवहार–प्रतिमान आदि आते है। जिन्हे मनुष्य अपने अनुभावों एवं सामाजिक सम्पर्क के कारण सीखता है और उनके अनुरुप अपने को ढालने का प्रयास करता है।

प्रसिद्ध समाज वैज्ञानिक एम.जे. हर्षकोविट्ज ने अपनी पुस्तक ''द सो"ाल आर्डर'' में संस्कृति को ''पर्यावरण का मानव निर्मित भाग'' कहा है। यह स्वीकार करना होगा कि मानव के बौद्धिक एवं सांस्कृतिक विकास के साथ–साथ उसकी भौगोलिक दासता समाप्त होती जा रही है इसलिए कहा जाता है कि मनुष्य पहले प्रकृति का दास था, किन्तु अब स्वामी बनता जा रहा है।

H016

वैदिक काल में पर्यावरण स्थिरता

डॉ दीप नारायण मिश्रा

असिस्टेंट प्रोफेसर दर्शनशास्त्र
काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय
ज्ञानपुर भदोही

सारांश

भारतीय चिंतन एवं साहित्य में पर्यावरण की अवधारणा उतनी ही प्राचीन है जितना की मानव जाति का इतिहास है। भारतीय साहित्य में ही नहीं अपित विश्व के साहित्य में भी प्रकृति के क्रियाकलापों की विभिन्न अवधारणाओं का भली–भांति वर्णन किया गया है। पर्यावरण में सामंजस्य स्थापित किए बिना मानव जाति के कल्याण की परिकल्पना की ही नहीं जा सकती है। पर्यावरण का स्वस्थ एवं संतुलन होना मानव सभ्यता के अस्तित्व के लिए आवश्यक है । पाश्चात्य सभ्यता को यह तथ्य बीसवीं सदी के उत्तरार्ध में समझ में आया है , जबकि भारतीय विद्वानों को इसकी अनुभूति वैदिक काल में ही हो गई थी। ऋषि मुनियों का कहना था कि **पंचस्वन्तु पुरूष आविवेषतान्यन्तपुरूषे अर्पितानि।** इनका मानना था कि यदि पंचतत्वों में से एक भी तत्व दूषित हो जाता है तो उसका प्रभाव मानव जीवन पर अवश्य ही पड़ेगा। इसलिए इन ऋषि–मुनियों ने इसके लिए संतुलन को बनाए रखने के लिए धार्मिक कृतियों के समय लोगों से प्रकृति के साथ सामंजस्य बनाए रखने की शपथ दिलवाई जाने की प्रावधानों सम्मिलित किया जो कि आज भी प्रचलित है।

ऋग्वेद का नदी सूक्त एवं पृथ्वी सूक्त एवं अथर्ववेद का अरण्यानी सूक्त क्रमशरू नदियों, पृथ्वी एवं वनस्पतियों के संरक्षण एवं संवर्धन का संदेश देते हैं। वैदिक काल से ही पृथ्वी के संपूर्ण जीव जंतु एवं वनस्पतियों के कल्याण की अवधारणा रखी गई। इन वैदिक ऋषि मुनियों ने ही ऐसी अवधारणा रखी थी कि अतिवृष्टि अनावृष्टि के निवारण का आधार वनस्पतियों को लगाकर वन क्षेत्र को बनाना ही माना था।

जब भी देवताओं ने या मानव ने प्रकृति संसाधनों का दोहन किया है उनके सामने गंभीर समस्याएं उत्पन्न हुई हैं। आज के समय में कहीं पर सूखे की समस्या तो कहीं पर बाढ़ की समस्या से सभी लोग भलीभांति परिचित हैं। ग्लोबल वार्मिंग की समस्या आखिर प्राकृतिक संसाधनों के दोहन का ही परिणाम है। देवताओं ने जब वैदिक काल में समुद्र मंथन किया था, तो वह देवताओं एवं असुरों प्रकृति निर्दयता पूर्वक दोहन किया गया था जिसमें अमृत के साथ दृ साथ विष भी निकला था जो उस समय सबसे प्रदूषित जहर था जिसे पान कर भगवान शंकर ने सृष्टि को प्रदूषण मुक्त किया था। तात्पर्य है कि चाहे वह वैदिक काल रहा हो या आज का युग प्रकृति अपने साथ किए गए छेड़छाड़ को बर्दाश्त नहीं करेगी। उसका विनाशकारी रूप प्राकृतिक आपदाओं के रूप में हमें देखने को मिलेगा, इसलिए पर्यावरण का सतत संरक्षण ही प्रकृति का संरक्षण है और इसमें सभी का सहयोग अपेक्षित है।

H017

अपव्यय की विरासत: साहित्य और पर्यावरण पर विचार

मनोज कुमार सिंह

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सारांश

प्राचीन बस्तियों के अवशेषों को देखने या प्रारंभिक मानव द्वारा गुफाओं में छोड़े गए शिलालेखों का निरीक्षण करके अतीत को देखने के बजाय आने वाली पीढ़ियां वर्तमान समय के बारे में इस छाप से जानकारी एकत्र करेंगी कि नव-उदारवादी पूंजीवाद सब कुछ छोड़ रहा है। प्लास्टिक की बोतलें च्यूइंग गम इलेक्ट्रॉनिक घटक और यहां तक कि चिकित्सा अपशिष्ट भी उन्हें एंथ्रोपोसीन का एक चित्र प्रदान करेंगे, जो कि हमारे द्वारा किए गए और अब रहने वाले जलवायु परिवर्तनों के आकार की उम्र है। बहुत समय पहले क्लार्क (2011) ने अनुमान लगाया था कि समस्या के अत्यधिक आयामों (10-11) के कारण यह वैश्विक पर्यावरणीय मुद्दा आम तौर पर पर्यावरण/पर्यावरणीय आलोचनात्मक साहित्य में शामिल नहीं होता है। हैंडले (2015) ने तब से माना है कि मानविकी के दृष्टिकोण से जलवायु परिवर्तन से गंभीर रूप से निपटने की कठिनाई इस तथ्य में भी हो सकती है कि यह एक स्वायत्त आत्म के हमारे प्रबुद्ध विचारों और व्यक्तिगत एजेंसी और जवाबदेही की सहवर्ती विशेषताओं के मूल को चुनौती देता है। "जलवायु परिवर्तन", हैंडले ने विस्तार से बताया, "एक मानव एजेंसी की समस्या पेश की है जो इतनी गहराई से सामूहिक है कि जलवायु पर किए गए परिवर्तनों के लिए जवाबदेही का पता लगाना कोई आसान मामला नहीं है" । दूसरी ओर, डे लाफ्रे (2015) ने एक साथ यह माना है कि यह एंथ्रोपोसीन के बारे में जागरूकता है जिसने पर्यावरणीय मानविकी में रुचि को बढ़ाया है। जलवायु परिवर्तन एक वैश्विक मुद्दा होने के कारण, इस "एंथ्रोपोसिन की ओर मुड़ें" के प्रवचन के अध्ययन के लिए लहर प्रभाव को डेलॉफ्रे द्वारा समान रूप से वैश्विक माना जाता है: "दशकों के काम के बाद जिसने ऐतिहासिकता और मानव विषय के अंतर की जांच की, विशेष रूप से उत्तर-औपनिवेशिक अध्ययनों में, हम ग्रहों के पैमाने पर मानवता की पहचान करने के लिए एक विवेकपूर्ण बदलाव देख रहे हैं"।

H018

प्रकृति के सुकुमार कविः सुमित्रानंदन पंत

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सारांश

सुमित्रानंदन पंत का छायावादी काव्यधारा के चार स्तंभों में महत्वपूर्ण स्थान है। पंत जी का प्रकृति के प्रति आकर्षण बाल्यकाल से ही रहा है क्योंकि उनका जन्म वर्तमान उत्तराखंड के कौसानी जनपद में हुआ था, जो प्राकृतिक सौन्दर्य का अनुपम उदाहरण है। इनके काव्य में प्रकृति साकार एवं सजीव रूप में उपस्थित हुई है। संध्या, प्रातः, बादल, वर्षा, वसंत, नदी, भ्रमर, तितली, पक्षी इत्यादि का चित्रण हमारे मन को आंदोलित करते हैं। प्रकृति का मानवीकरण छायावादी कविता की प्रमुख विशेषता रही है।

पंत जी की बहुत सी प्रकृति संबंधी कविताओं मे रहस्य भावना भी व्यक्त हुई है। इनका लगाव प्रकृति के कोमल और मनोरम स्वरूप के प्रति ही अधिक रहा है, लेकिन कभी–कभी इनकी दृष्टि यथार्थ से प्रेरित होकर प्रकृति के कठोर रूप की ओर भी गई है।

H019

पर्यावरण के लिये घातक सिंगल यूज प्लास्टिक

डा0 कामिनी वर्मा

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सारांश

जीवन में आव"यक आव"यकता के रूप में रचा बसा सिंगल यूज प्लास्टिक न सिर्फ मानव जाति बल्कि समस्त जीव जगत के लिये घातक है। इसकी बढ़ती उपयोगिता ने न सिर्फ धरती अपितु आसमान में भी अपनी जगह बना ली है। पर्यटन स्थलों,समुद्री तटों,नदी,नालों,खेतों,खलिहानों पृथ्वी के नीचे तथा पर्वतों पर भी यह आसानी से मिल जाती है। घरों में आटा,दाल,चावल,चीनी,नमक दूध मसाले के साथ आने वाले प्लास्टिक बैग घर आकर कचरे में बदल कर पर्यावरण को दूषित करते हैं। प्लास्टिक के उपयोग पर यदि हम नजर डालें तो वै"ि"वक स्तर पर प्रति व्यक्ति इसका उपयोग 18 किलोग्राम है। जबकि इसकी रिसाइकिलिंग 15.2 प्रति"ात है। प्लास्टिक स्वाभाविक रूप से विघटित नहीं होती। इसको नष्ट होने में सैकड़ों वर्ष लग जाते हैं। मिट्टी के नीचे दबकर यह भूमि की उर्वरा शक्ति नष्ट कर देती है। बीजों का अंकुरण रूक जाता है। नदियों,समुद्रों में पहुँचकर जलीय जीवों द्वारा खा लिये जाने से उनके पेट में चला जाता है। बचे हुये खाद्य पदार्थ पोलिथीन में रखकर फेके जाने पर वह भी जानवरों द्वारा खाने पर उनके पेट में चला जाता है। और उनकी मौत भी कभी कभी कारण बनता है। नालों में पहुँच कर जल का प्रवाह बाधित करता है।

अतएव पालिथीन का प्रयोग धरती,वायु, आका"ा सभी जगह घातक है। इसके दुष्परिणाम से बचने के लिए कम से कम इसका प्रयोग करना होगा। तथा प्रयुक्त पालिथीन की खपत का उपाय खोजना होगा।इस दि"ाा में प्लास्टिक के उपयोग से सड़क बनाने का प्रयास सराहनीय है।

H020

समालोचनात्मक चिंतन द्वारा पर्यावरण चिंतन

प्रदीप कुमार

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सारांश

हिन्दू धर्म के सबसे प्राचीन साहित्य वेद और उपनिषद् हैं, जिनमें प्रकृति से विरासत में मिली सभी वस्तुओं का जीवन से गहरा जुडाव मिलता है और इन सबको अत्यन्त पवित्र मानकर लोग इनकी पूजा करते हैं। इन सबमें प"ाु–पक्षी, पेड–पौधे, सूर्य और अन्य ग्रह एवं उपग्रह सम्मिलित हैं। मानव

पर्यावरण संरक्षण एवं इसकी महत्ता के प्रति सचेत रहे इस दृष्टि से पर्यावरण के विभिन्न कारकों को धर्म एवं देवी–देवताओं से जोडा गया है।

पंचमहाभूत– क्षिति, जल, पावक, गगन, समीर, भौतिक एवं जैविक पर्यावरण का निर्माण करते हैं। वेदों में मूलतः इन पंच महाभूतों को ही दैवीय शक्ति के रूप में स्वीकार किया गया है।

अथर्ववेद में कहा गया है– यस्ते अप्सु महिमा यो वनेषुप य औषधीषु प"ाुप्वप्स्वन्तः।

अग्रे सर्वास्तन्वः संरभस्व तार्भिन एहिद्रविणोदा अजस्त्र।।

हे अग्निदेव आपकी महत्ता जल में (बडवाग्रि रूप में), औषधियों व वनस्पतियों में (फलपाक रूप में), प"ाु व प्राणियों में (वै"वानर रूप में) एवं अन्तरिक्षीय मेघों में (विद्युत रूप में) विद्यमान है। आप सभी रूप में पधारें एवं अक्षय द्रव्य (ऐ"वर्य) प्रदान करने वाले हों।

स्पष्ट है कि भारतवर्ष में पर्यावरण संरक्षण हेतु चिंतन अतीतकाल से परिलक्षित होता है। वर्तमान वै"ावक परिदृ"य में जबकि वि"व के सभी दे"ा पर्यावरणीय संपोषण के प्रति गंभीर हैं, और इसके लिये विभिन्न कार्यक्रम एवं योजनाओं का क्रियान्वयन किया जा रहा है। अतः समालोचनात्मक चिंतन द्वारा पर्यावरण संपोषण (निरंतरता) की सार्थकता बढ जाती है।

H021

पुराणों में वर्ण्यविषय के रूप में जैवविविधता

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काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय ज्ञानपुर, भदोही

सारांश

पुराण अपनें प्रतिपाद्य विषय की विविधता के लिए प्रसिद्ध हैं। इसमें तत्कालीन ज्ञान–विज्ञान को आकर्षक और सरल भाषा में समाहित करनें का प्रयास दृष्टिगत होता है। इसी कारण इनको विश्वकोष संज्ञा से भी विभूषित किया जाता है। अपनी रोचक शैली और विविध उद्देश्यों को कथाओं, आख्यानों और उपाख्यानों के माध्यम से सामान्य जनमानस तक संप्रेषित करनें की कला के कारण पुराण आज भी अपनी लोकप्रियता को अक्षुण्ण बनाये हुए है। ये अपनें लक्षित उद्देश्यों और लोक से जुड़ी समस्यों की संवेदनशीलता को अभिव्यक्त करनें में सफलतम साहित्य हैं। पर्यावरण और पारिस्थितिकी तथा जैवविविधता पुराणों के मुख्य प्रतिपाद्य विषय हैं, ऐसा हम नहीं कह सकते लेकिन ये विषय पुराणों की परिधि से बाहर हैं, ऐसा कहना सर्वथा दुष्ट निष्कर्ष है। सृष्टिवर्णन, सांसारिक एकात्मकता, अहिंसा, दया, समत्व और सहिष्णुता जैसे मानवीय गुणों के निरुपण के अवसर पर पर्यावरण एवं जैवविविधता विषयक प्रतिपाद्यों का प्रभूत वर्णन है। प्राकृतिक सौन्दर्य निरूपण, प्राकृतिक तीर्थस्थलों के वर्णन, तीर्थयात्राओं के प्रसंगों और आश्रमों के वैशिष्ट्यों के प्रतिपादन में जैवविविधता ही मुख्य प्रतिपाद्य के रूप में दृष्टिगत होती है। मांगलिक क्रियाओं में प्रयुक्त सामग्रियों के वर्णन में भी जैविक वैविध्य का प्रसंग है। अग्निपुराण जैसे पुराणों में औषधि और चिकित्सा से सम्बन्धित अध्याय हैं। यहाँ परिलक्षित होनें वाला जैवविधता का माहात्म्य द्रष्टव्य है। ये पौराणिक प्रसंग पर्यावरणीय समस्यों , पारिस्थितिकीय असन्तुलन और जैवविविधता के संरक्षण की दृष्टि से अतिशय उपादेय हैं।

H022

साहित्य एंव पर्यावरण

शबाना परवीन
शोधार्थी
राजकीय पीजी कॉलेज, मुसाफिरखाना, अमेठी

सारांश

साहित्य एवं पर्यावरण अध्ययन जिसे आमतौर पर ''पारिस्थितिकी आलोचना'' कहा जाता है या पर्यावरण आलोचना, अधिक सामान्य शब्द साहित्यिक आलोचना के अनुरूप– एक उदार बहुरूपि, क्रॉस, अनुशासनात्मक पहल शामिल है जिसका उद्देश्य पर्यावरण सम्बन्धी चिन्ता की भावना में साहित्य और अन्य रचनात्मक मीडिया के पर्यावरणीय आयामों का पता लगाना है।

प्रागैतिहासिक काल के बाद से साहित्य और कला भौतिक वातारण और मानव पर्यावरण बातचीत के चित्रण के लिए तैयार किये गये है। आधुनिक पर्यावरणवादी आन्दोलन के रूप में यह उन्नसवी सदी के उत्तरार्ध में पहली बार उभरा और इसके हालिया औतार में 1960 के दसक में प्राकृतिक दुनिया में मनुष्यों के बदलते सम्बन्धों से सम्बन्धित काल्पनिक और गैर काल्पनिक लेखन की एक समृद्ध श्रंखला को जन्म दिया। केवल 1960 के दशक की शुरूआत से, हालांकि इन मामलों में साहित्य अध्ययन की लम्बे समय से चली आ रही रूचि ने पहल को सबसे आमतौर पर पारिस्थितिकीवाद के रूप मे जाना जाता है। एक उदार और शिथिल समन्वित आन्दोलन जिसका योगदान अब तक अपने घरेलू अनुशासन के भीतर अधिक दिखायी देता है।

साहित्य और पर्यावरण समय के साथ महत्वपूर्ण रूप से विकसित हुए हैं। 1960 के दशक की प्रथम लहर छात्रवृत्ति प्रकृति के साथ प्रवृत्त हुयी। कविता, कथा और गैर कथा में प्राकृतिक दुनिया की साहित्यिक प्रस्तुतियों पर ध्यान केन्द्रित करने और इसके साथ सम्पर्क हो बढ़ावा देने के साधन के रूप में स्थानीय सामुदायिक या जैव क्षेत्रीय स्तर पर प्रकृति संरक्षण और मानवीय लगाव को महत्व देना और एक पारिस्थितिक नैतिकता की पुष्टि करने के लिए जो अक्सर एक जन्मजात बंधन की कुछ अवधारणा से तेज होता है चाहे जैविक, मनोवैज्ञानिक या आध्यात्मिक, व्यक्तिगत इंसान और प्राकृतिक दुनिया को जोड़ता है।

हालांकि इन परिवर्तनों की बीच कई अन्य चिन्तायें बनी हुयी हैं। साहित्य पर्यावरण अध्ययनों ने हमेशा कम से कम सैद्धान्तिक रूप से प्रकृति लेखन और प्रकृति कविता के रूप में ऐसी विशिष्ट शैलियों को शामिल करने की मांग नही की है। बल्कि दृश्य, संगीत और सिनेमाई सहित सभी अभिव्यक्तिपूर्ण मीडिया के साथ साथ विद्वानों ने अभिव्यक्ति के अधिक विशुद्ध रूप से सहायक रूपों को भी शामिल किया है।

साहित्य पर्यावरण अध्ययनों का स्पष्ट रूप से स्थान सिद्धांत पर कोई एकाधिकार नहीं है, मानविकी के साथ साथ सामाजिक और अनुप्रयुक्त विज्ञानों में भी रूचि है। पारिस्थितिकीवादी सोच व्यापक रूप से मानवतावादी भूगोलवेत्ताओं के अनुरूप है जो व्यक्तिगत निष्ठा, सामाजिक, निर्माण और भौगोलिक मैट्रिक्स के संलयन के रूप में स्थान भावना की कल्पना करते हैं। जबकि व्यवहार में अक्सर अलग अलग व्यक्तिगत अनुभव बनाम कल्पित व्यक्तिगत अनुभव के स्तर पर स्थान अनुलग्नक पर सापेक्ष जोर देते हैं।

प्राकृतिक विज्ञानों के साथ परिस्थितिकीवाद का सम्बन्ध हमेशा असाधारण रूप से उभयलिंगी रहा है।

साहित्य एवं पर्यावरण अध्ययन के कुछ महत्वपूर्ण बिन्दु हैं जो इस प्रकार है–

1. पर्यावरण अध्ययनों की प्रकृति एवं महत्व का अध्ययन
2. पर्यावरण अध्ययनों के विकास का अवलोकन
3. जगह की कल्पना– स्थानीय से वैश्विक तक
4. साहित्य और कला के अध्ययन में वैज्ञानिक जांच के मॉडल की सूची और आलोचना
5. लिंग अंतर और पर्यावरण प्रतिनिधित्व के महत्व की समीक्षा
6. साहित्य विज्ञान एवं पर्यावरण का अध्ययन।

H023

पर्यावरण संरक्षण में वन : एक ऐतिहासिक विश्लेषण

डॉ0 बालके"वर

एसोसिएट प्रोफेसर–मध्य एवं आधुनिक इतिहास
का"ाी नरे"ा राजकीय स्नातकोत्तर महाविद्यालय ज्ञानपुर, भदोही

सारांश

भारत वि"व का ऐसा दे"ा रहा है, जहाँ पर पर्यावरण संरक्षण के लिये सिन्धु घाटी सभ्यता से लेकर वैदिक काल तक अनेकों किये गये। बहुत सारे ऋषि, मुनि अपना जीवन वनों के बीच में ही बिताते रहे हैं, किन्तु वर्तमान दौर में अंधाधुन्ध वनों का दोहन पर्यावरण को क्षति पहुंचाया है। जिसका ताजा उदाहरण कोरोना काल में ऑक्सीजन के कमी के रूप में देख सकते हैं। वन हमारे जीवन में को बेहतर बनाने के लिये महत्वपूर्ण भूमिका निभाते हैं। भारतीय वन सर्वेक्षण के ताजा रिपोर्ट के अनुसार दे"ा के पर्वतीय राज्यों में वनों में कमी आई है। जम्मू–क"मीर में 2019 में 4270 वर्ग किलोमीटर में बहुत घने वन थे जो 2021 में घटकर 4,155 वर्ग किलोमीटर रह गया है। कुल मिलाकर भारत में वनों के अंधाधुन्ध दोहन से जलवायु परिवर्तन का खतरा बढ़ता जा रहा है। दक्षिण अमेरिका का सूरीनाम पहला ऐसा दे"ा है जिसकी 98.3 % भूमि वनों से आच्छादित है। जबकि हमारे दे"ा में आज के आँकड़ों के अनुसार 7,13,789 किमी में वन है, जो दे"ा के भू–क्षेत्र का 21.27% है। जो हमारे जीवन को बेहतर बनाने के लिये पर्याप्त नहीं है। ब्राजील दुनिया का ऐसा दे"ा है जहाँ पर अमेजन घाटी में व्यापक मात्रा में वनों का दोहन हुआ है जिसके कारण से पर्यावरण का काफी नुकसान हुआ है। पिछले वर्ष ग्लास्गो में हुये जलवायु परिवर्तन ि"ाखर सम्मेलन (कोप 26 में) 100 से अधिक दे"ाों ने 2030 तक वनों की कटाई रोकने का आ"वासन दिया था, उसे पालन नहीं कर रहे हैं।

जब तक धरती पर वन है, तब तक जीवन है सामाजिक, आर्थिक, सांस्कृतिक खु"ाहाली और भविष्य की आ"ाओं के लिये वन की महत्तता बढ़ जाती है। धरती पर जीवन की निरन्तरता और सतत् विकास के लिये वनों का होना नितान्त आव"यक है। इसलिए जरूरी है कि हमारी सोच, हमारी संस्कृति, हमारा धर्म, हमारा द"ान हमारी सारी नीतियां, हमारे सारे कार्यक्रम, वनों के विकास के लिये होना चाहिए, तभी हम मानवता का संरक्षण कर पायेंगे। इस लेख में वनों के महत्व को ऐतिहासिक परिप्रेक्ष्य में समझाना हमारा मूल उद्दे"य रहेगा।

H024

जैव–विविधता एवं पर्यावरणीय निर्वहनीयता

डा0 अभिषेक उपाध्याय,

असि0 प्रोफेसर, द"र्नशास्त्र विभाग,
का"ी नरे"ा राजकीय स्नातकोत्तर महाविद्यालय ज्ञानपुर, भदोही

सारांश

परिचय :–

जैव–विविधता का सम्बन्ध हमारे पर्यावरण में उपस्थित सम्पूर्ण जीव–जन्तुओं–पादपों अथवा उनकी विभिन्न प्रजातियों की विविधता से है, किन्तु जैव–विविधता पर्यावरण अथवा प्रकृति में विद्यमान विभिन्न जैव–तत्वों का स्थूल समेकन मात्र नहीं है अपितु यह सक्रिय अन्तर–निर्भरता पर आधारित एक सामन्जस्यपूर्ण व्यवस्था है जो हमारे पर्यावरण को एकरूपता, निरन्तरता एवं सहअस्तित्व के योग्य बनाती है। दूसरी तरफ पर्यावरणीय निर्वहनीयता का सम्बन्ध प्राकृतिक संसाधनों के इस प्रकार विवेकपूर्ण उपयोग से है, जिससे पर्यावरणीय गुणवत्ता एवं निरन्तरता यथावत् बनी रहे और भावी पीढ़ियों को वर्तमान पर्यावरणीय परिस्थितियां एवं संसाधन प्राप्त होते रहें।

अन्तर्सबन्ध :–

दोनों अवधारणायें परस्पर घनिष्ट रूप से अन्तर्संबन्धित हैं। पर्यावरणीय निर्वहनीयता अगर साध्य है तो जैव विविधता उसका एक महत्वपूर्ण साधन है क्योंकि पर्यावरणीय निर्वहनीयता के मार्ग में जो कुछ भी बाधायें हैं लगभग वे सभी बाधायें सर्वप्रथम जैव–विविधता की अक्षुण्णता को भी प्रभावित करती हैं। वस्तुतः प्रकृति अनन्त छोटी–छोटी जैव श्रृंखलाओं के सन्तुलन का समूह है, इसमें किसी एक श्रृंखला के टूटने का अपरिहार्य परिणाम किसी न किसी रूप में श्रृंखलाओं के संतुलन पर पड़ता है। इसी प्रकार जैव विविधता में हुए किसी भी नकारात्मक परिवर्तन का सीधा प्रभाव पर्यावरण की गुणवत्ता एवं निर्वहनीयता पर भी होता है।

प्रमुख समस्यायें :–

जैव–विविधता को नकारात्मक रूप से प्रभावित करने वाले कुछ प्राथमिक कारण निम्नवत् हैः–

(i) जैविक अथवा पादप प्रजातियों के मूल–वासस्थान का विना"ा।
(ii) वायु, जल अथवा मृदा प्रदूषण से उत्पन्न संकट।
(iii) ग्लोबल वार्मिंग एवं अन्य पर्यावरणीय परिवर्तन के परिणाम स्वरूप उत्पन्न पर्यावरणीय संकट।
(iv) जैव–श्रृंखला की किसी एक प्रजाति के अतिदोहन के परिणामस्वरूप उत्पन्न असन्तुलन।

पर्यावरणीय निर्वहनीयता के मार्ग में उपस्थित प्रमुख बाधायें निम्नवत् है :–

(i) गैर नवीकरणीय ऊर्जा स्रातों पर अत्यधिक निर्भरता।
(ii) प्राकृतिक संसाधनों का अविवेकपूर्ण अतिदोहन।
(iii) विभिन्न स्तरों पर बढ़ता पर्यावरण प्रदूषण।
(iv) अन्तर्राष्ट्रीय समन्वय एवं संकल्पशक्ति की कमी।
(v) उपभोगवादी संस्कृति का विस्तार।

समाधान :–

पर्यावरणीय निर्वहनीयता एवं जैव–विविधता को यथावत् बनाये रखना हमारे साझा भविष्य (Our Common Future) के लिए एक महत्वपूर्ण चुनौती है। हमे विकास एवं उससे जुड़ी गतिविधियों को इस प्रकार नियोजित करना है कि उचित एवं अनुकूल पारिस्थितिकीय द"ाायें बनी रहें, जिससे पर्यावरण की गुणवत्ता, विविधता एवं निर्वहनीयता पर किसी प्रकार का संकट उत्पन्न न हो। पर्यावरणीय निर्वहनीयता एवं जैव–विविधता से सम्बन्धित आज जो संकट हमारे समक्ष उपस्थित है उसका प्रमुख कारण यह है कि हम पर्यावरण अथवा प्रकृति को अपनी आव"यकताओं की पूर्ति हेतु साधन मूल्य (Instrumental Value) के रूप में मानकर व्यवहार करते हैं। उपभोक्तावादी संस्कृति के बढ़ते प्रभाव में हम प्रकृति को

अपनी आव"यकताओं की पूर्ति का एक उपकरण मात्र मान बैठे हैं। सर्वप्रथम हमें इस सोच को बदलना होगा एवं प्रकृति को स्वतःसाध्य मूल्य (It-self Good) के रूप में पुर्नस्थापित करना होगा।

H025

हरित अर्थव्यवस्था की दिशा में भारत के कदम

डॉ. मनोज कुमार अवस्थी

(असिस्टेंट प्रोफेसर अर्थशास्त्र)

काशी नरेश राजकीय स्नातकोत्तर महाविद्यालय ज्ञानपुर भदोही उत्तर प्रदेश

सारांश

किसी भी देश में ऊर्जा की उपलब्धता एवं खपत को आर्थिक विकास की कुंजी माना जाता है। भारत विश्व का तीसरा सबसे बड़ा ऊर्जा खपत वाला देश है।आजादी के अमृत महोत्सव वर्ष में प्रस्तुत बजट प्रस्ताव 2022– 23 में हरित अर्थव्यवस्था की दिशा में उठाए जाने वाले कदमों का रोड मैप प्रस्तुत किया गया है। भावी पीढ़ी की ऊर्जा आवश्यकताओं का आकलन करके कार्बन तटस्थ अर्थव्यवस्था की दिशा में बढ़ते हुए कदम के अंतर्गत, इस वर्ष के बजट में राष्ट्रीय हरित हाइड्रोजन मिशन के अंतर्गत 5 सिद्धांतों (अंग्रेजी के पांच आई) इंस्टेंट यानी इरादा, इंक्लूसिव यानी समावेशन, इन्वेस्टमेंट यानी निवेश, इंफ्रास्ट्रक्चर यानी बुनियादी ढांचा और इनोवेशन यानी नवाचार के आधार पर वांछित लक्ष्यों को पूरा करने का संकल्प लिया गया है। सौर ऊर्जा उत्पादन आधारित प्रोत्साहन (पीएलआई) योजना हेतु 24000 करोड रुपए का आवंटन किया गया है। इससे 2030 तक 280000 मेगावाट क्षमता के महत्वकांक्षी लक्ष्य को पूरा किया जा सकेगा। ताप विद्युत संयंत्रों में 5 से 7: तक जैव अपशिष्ट (बायोमास पेलेट) का इस्तेमाल किया जाएगा जिससे 38 एमएमटी ब्व्2 की कटौती होगी। परिवहन क्षेत्र में इलेक्ट्रिक वाहनों को बढ़ावा देने के लिए बैटरी स्वैपिंग नीति को व्यावहारिक स्वरूप दिया गया है। राष्ट्रीय इलेक्ट्रिक मोबिलिटी मिशन योजना (एन एम एम पी) 2020 के तहत इलेक्ट्रिक वाहनों के त्वरित अंगीकरण एवं इनके विनिर्माण की प्रक्रिया को तेज करने के लिए आवश्यक आधारभूत संरचना के निर्माण पर जोर दिया गया है । केंद्रीय बजट में ऊर्जा परियोजनाओं के लिए हरित वित्त की व्यवस्था को बढ़ावा देने के लिए ग्रीन बांड जारी करने की योजना है । जिससे हरित अर्थव्यवस्था में आर्थिक निवेश के अवसर बढ़ेंगे। बिजली एवं प्राकृतिक गैस के लिए संचालित 'वन नेशन वन ग्रेड' की तर्ज पर ग्रीन एनर्जी कारीडोर' को स्वीकृत दी गई है । नदी जोड़ो परियोजना के तहत ऊर्जा निर्भरता प्राप्त करने के लिए केन– बेतवा लिंक परियोजना से 103 मेगावाट जलविद्युत और 27 मेगावाट सौर ऊर्जा के उत्पादन का लक्ष्य निर्धारित किया गया है। विकास प्रक्रिया में हरित ऊर्जा के समावेशन को पूरा करने के लिए अधिक निवेश, बुनियादी ढांचा विकास , निजी – सार्वजनिक भागीदारी, हरित वित्त पोषण एवं नीतिगत ढांचे का क्षेत्रीय एवं राष्ट्रीय स्तर पर मजबूत करने की अवश्यकता है। जिससे विश्व को स्वच्छ ऊर्जा की दिशा में गतिमान करने में भारत की महत्वपूर्ण भूमिका निभा सके।

शब्द कुंजिका– हरित अर्थव्यवस्था, समावेशन, रोडमैप, नवाचार, बायोमास पेलेट, हरित वित्त, ग्रीन बॉन्ड

H026

अथर्ववेद में विद्यमान पर्यावरणीय संवेदनशीलता

डॉ० रश्मि यादव,

असिस्टेंट प्रोफेसर,संस्कृत,
का०न०रा०स्ना०महाविद्यालय,ज्ञानपुर भदोही उ०प्र०

सारांश

तत्त्वदर्शी मनीषियों ने प्रकृति के समस्त तत्वों के संरक्षण व संवर्धन के प्रति स्वसंवेदनशीलता प्रदर्शित की है। सम्पूर्ण वैदिक वाङ्मय का प्रणयन प्रकृति के सुरम्य प्रांगण में ही हुआ अतएव तात्कालिक ऋषियों का पर्यावरण के प्रति स्वाभाविक आकर्षण दिखाई देता है। पर्यावरण के सभी संघटकों यथा–भूमि,जल,वायु, अग्नि और आकाश से वैदिक ऋषियों की आत्मीयता दर्शनीय है। ऋषियों की पर्यावरणीय–चेतना अथर्ववेद में अधिक स्पष्ट रूप से मुखर हुई है।"माता भूमिरूपुत्रोऽहम् पृथिव्यारू"(अथर्ववेद १२.१.१३) की उद्घोषणा करने वाले अथर्ववैदिक ऋषियों ने पृथ्वी को माता और मनुष्य को पृथ्वी–पुत्र की संज्ञा देते हुए पृथ्वी के सभी तत्वों के संरक्षण का सम्पूर्ण दायित्व मानव को सौंपा है।परि और आवरण से निष्पन्न पर्यावरण शब्द "चारों ओर से घेरने वाला" इस अर्थ को द्योतित करता है।इस निर्वचन के आधार पर सभी सजीव और निर्जीव तत्व पर्यावरण के अन्तर्गत समाहित हो जाते हैं। अथर्ववेद में सूर्य, अन्तरिक्ष और पृथ्वी को क्रमशः चक्षु,प्राण और शरीर के समान मानते हुए पृथ्वी और द्युलोक के संरक्षण के लिए सर्वस्व समर्पित करने की भावना अभिव्यक्त हुई है–"सूर्यो मे चक्षुर्वातरूप्राणोऽन्तरिक्षमात्या पृथ्वी शरीरम्।अस्तृतो नामाहमयस्मि स आत्मानं निदधैद्यावापृथिवीभ्याम् गोपीथाय।।"(अथर्ववेद५.६.७)।वर्तमान में भी पर्यावरण संरक्षण के लिए इस वैदिकी चेतना और संवेदनशीलता की महती आवश्यकता है।

H027

जैव विविधता एवं पर्यावरणीय सतत् विकास

भुवाल चौहान

शोध छात्र, शिक्षाशास्त्र

समता पी ० जी ० कॉलेज, सादात ग़ाज़ीपुर

सारांश

हर एक मनुष्य की शरीरिक संरचना एक समान नही होतीं उनके व्यवहार भी भिन्न- भिन्न होते है! व्यक्ति विभिन्न परिस्थितियों के बीच रहता हैं, उन्हीं के अनुसार व्यवहारों का रूप निर्धारित होता है! जिस तरह एक पौधे का मिट्टी की बनावट, तापक्रम, सिंचाई, खाद तथा कीर्णो से बचाव आदि पर निर्भर रहता है उसी तरह मानव का जीवन बहुत सी भौगोलिक, सामाजिक, आर्थिक तथा सांस्कृतिक दशाओं से घिरा रहता है! जीवधारियों को हम दो भागो में बाट सकते हैं-(A) प्राणी जगत (B) वनस्पति जगत

एक अनुमान के अनुसार पृथ्वी मण्डल पर १० लाख प्रकार के प्राणी निवास करते हैं तथा ३ लाख प्रकार की वनस्पति पाई जाती है! संपूर्ण वनस्पति और जीवाणु उत्पादक वर्ग में रखे जाते हैं और सजीव प्राणी उपभोक्ता

कहलाते हैं! इन उपभोगताओ को तीन भाग में बाट सकते हैं-(१) शाकाहारी जीवन (२) मांसाहारी जीवन (३) सर्वाहारी जीवन!प्रकृति और मनुष्य का संबंध सृष्टि के आरंभिक काल से ही रहा है! मानव जब भी प्रकृति को अनावश्यक रूप से छेरणता है तब उसका प्रतिकूल प्रभाव परता है! ऐसा देखने को मिलता है कि मनुष्य ने ही प्रकृति को सर्वथा प्रदूषित किया है जबकि प्रकृति अपनी क्रिया- कलापो दवारा vatavaran को साफ रखने का प्रयत्न करती है! मनुष्य तकनीकी सभ्यता की समृधि के लिए जिस तीव्रता से प्राकृतिक संसाधनों का दोहन और भौतिक संसाधनों का उपयोग कर रहा है उसके कारण विभिन्न क्षेत्रों में प्रदूषण की समस्या उत्पन्न हो गयी है जो इस प्रकार है-(१)जनसंख्या वृद्धि (२) auddogikaran और नगरीकरण (३) जल प्रदूषण और वायु प्रदूषण (४) किनाशको का अधिक प्रयोग(५) रेडियोधर्मी ता!

गांधी जी ने कहा था कि-"प्रकृति में सभी की आवश्यकता को पूर्ण करने हेतु पर्याप्त साधन है, लेकिन किसी भी एक व्यक्ति के लोभ लालच की तुष्टि के लिए कुछ नहीं है!"

Srimadbhagavat मे कहा गया है कि- आकाश, वायु, सरिता- सभी हरि की ही काया है! इसके अतिरिक्त हमारे यहाँ अनादिकाल से यज्ञ, दान और तप को जीवन में महत्व दिया गया है! इन तीनों को महत्व देने तथा उनमें आपसी संबंधों की जानकारी से मानव जीवन को सुखी बनाया जा सकता है!

सतत शिक्षा के क्षेत्र मे पर्यावरण शिक्षा का बहुत महत्व है! सतत शिक्षा का उद्देश्य- जीवन के प्रति समग्रता का बोध कराना! यह शिक्षा व्यक्ति को पूर्णता की ओर अग्रसर करती है!

मुख्य बिन्दु- *विविधता, सतत विकास, संसाधन, प्रदूषण ।*

END