1st Annual Session of GESA

1st International Conference on Environment and Society (ICES 2019)

Theme:

Socio-economic Challenges of Agriculture, Biodiversity & Environment

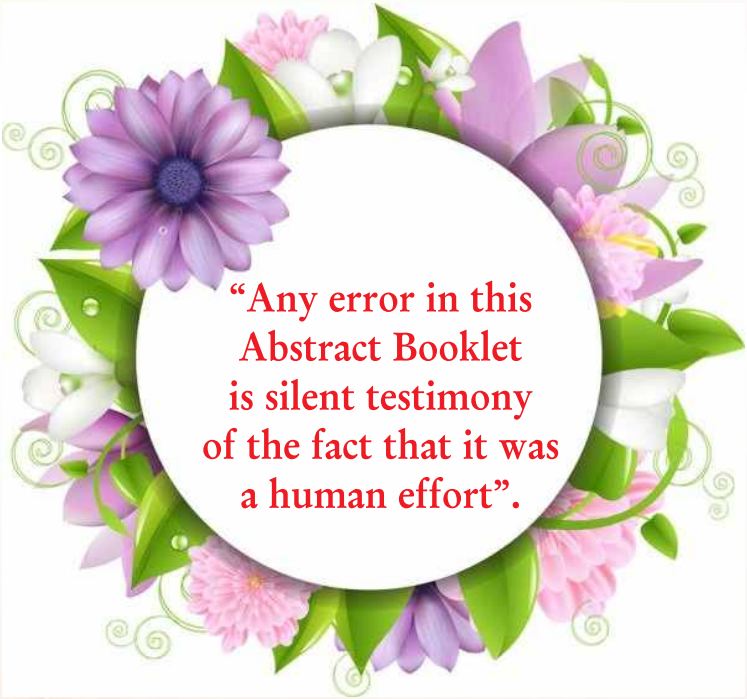
December 22nd & 23rd, 2019

SOUVENIR & ABSTRACTS



Organized by:

Glocal Environment & Social Association (GESA), New Delhi
Harcourt Butler Technical University (HBTU), Kanpur
DG PG College, Kanpur, U.P.
Indian Thinkers Society (ITS), Kanpur, U.P.
Asian Biological Research Foundation (ABRF), Prayagraj
Department of Biotechnology, Govt. of India



Dr. A.K. Verma

Convener ICES 2019

1st Annual Session of GESA

1st International Conference on Environment and Society (ICES 2019)

Theme:

Socio-economic Challenges of Agriculture, Biodiversity & Environment

December 22nd & 23rd, 2019

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Organized by:

Glocal Environment & Social Association (GESA), New Delhi
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DG PG College, Kanpur, U.P.
Indian Thinkers Society (ITS), Kanpur, U.P.
Asian Biological Research Foundation (ABRF), Prayagraj
Department of Biotechnology, Govt. of India

PLEDGE TO ALL PARTICIPANTS TO

MAKE YOUR NEIGHBORING AREA **CLEAN AND GREEN**



डॉ० संजीव कुमार बालियान
DR. SANJEEV KUMAR BALYAN

सत्यमेव जयते

राज्य मंत्री
मत्स्यपालन, पशुपालन एवं डेयरी मंत्रालय
पशुपालन एवं डेयरी विभाग
भारत सरकार
कृषि भवन, नई दिल्ली–110001
MINISTER OF STATE FOR FISHERIES,
ANIMAL HUSBANDRY & DAIRYING
DEPARTMENT OF ANIMAL HUSBANDRY & DAIRYING
GOVERNMENT OF INDIA
KRISHI BHAWAN, NEW DELHI-110001

Message

Date: 10.12.2019



I am pleased to learn that Dayanand Girls (P.G.) College, Kanpur is organising an International Conference on Environment and Society in association with Global Environment & Social Association (GESA), New Delhi; Harcourt Butler Technical University (HBTU), Kanpur; Indian Thinkers' Society; Asian Biological Research Foundation (ABRF) and the Department of Biotechnology, Government of India, on 22-23rd December, 2019. The theme of the seminar is of immense significance and interest of the researchers and scientists working in the field of Biology.

India has immense potential in Biological Sciences for several reasons such as abundance of vast biodiversity offering opportunities in their conservations and exploitation, availability of premier training and research institutions in Biosciences, and presence of high calibre scientist for guidance of quality research.

The country is at the threshold of achieving unique distinction in biological science among the developed countries. Therefore, your effort to inculcate interest in Biosciences among the young generation is laudable.

I wish the Conference a grand success.

Balyan

(Dr. Sanjeev Kumar Balyan)

Office: Krishi Bhawan, New Delhi-110001 • Tel.: 011-23383727, 011-23383710 (Fax)
कार्यालय: कृषि भवन, नई दिल्ली–110001 • दूरभाष: 011–23383727, 011–23383710 (फैक्स)

अनिल शर्मा
राज्य मंत्री
पर्यावरण वन तथा
जलवायु परिवर्तन विभाग,
उत्तर प्रदेश।



उ0 प्र0 सचिवालय, लखनऊ
जी0-1/4 वापू भवन, छठा तल
आवास- आर0 एस0- 1/6
विभूति खण्ड, गोमती नगर लखनऊ
दूरभाष- 0522-2237287 (का0)
0522-2214758

दिनांक.....

MESSAGE

The conferences are necessary to bring in culture of information exchange and feedback on developing trends in technologies. I am delighted to note that D.G. (P.G) college, Kanpur is organising an International Conference on "Environment and Society" in association with Glocal Environment & Social Association (GESA), New Delhi., Harcourt Butler Technical University (HBTU), Kanpur. Indian Thinkers' Society, Asian Biological Research Foundation (ABRF), India and Department of Biotechnology, Govt. of India on December 22nd & 23rd ; 2019.

There are two main reasons; India's environmental challenges are assuming gigantic proportions. Firstly, the exploding population and needs of billions makes environmental sustainability a very big issue. The other big challenge is lack of environmental awareness and conservation despite the efforts of government and environmental agencies there is a lack of substantial effort from the masses.

Certainly this type of conference not only bring all the researchers, students at one platform, but it also inculcates the research culture among the entire fraternity of Education in the country, there by contributing to the development of nation.

I hope that this conference would certainly induce innovation ideas among the participants paving way for new invention and technologies.

I congratulate Dr. Sunita Arya and her team for initiating the conduction of such a conference.

I wish the conference a grand success.

(ANIL SHARMA)

छत्रपति शाहू जी महाराज विश्वविद्यालय, कानपुर–208024
Chhatrapati Shahu Ji Maharaj University, Kanpur-208024

प्रो. नीलिमा गुप्ता
कुलपति
Prof. Neelima Gupta
Vice Chancellor

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ई-मेल/e-mail : vcocsjmu@gmail.com
वेब/Web : www.kanpuruniversity.org

December 16, 2019



Message

I am delighted to learn that the **Department of Zoology, D.G. College, Kanpur** is organizing an **International Conference** on **Environment and Society (ICES 2019) "Socio-economic Challenges of Agriculture, Biodiversity and Environment (ICES 2019)"** in association with Glocal Environment and Social Association (GESA), New Delhi, Harcourt Butler Technical University (HBTU), Kanpur, Indian Thinker Society (ITS), Kanpur. Asian Biological Research Foundation (ABRF) and Department of Biotechnology, Government of India, which is scheduled on 22nd and 23rd December, 2019.

I am donfident that the deliberations on the focal theme of the said conference would pave the way for galvanizing the minds of participants to contribute meaningfully to the scientific reservoir of knowledge and expertise on the focal theme of the Conference.

I sanguinely wish that the sacred threads between human awareness and scientific knowledge will be strongly interwoven during this Conference by the contributions made by learned participants and the young scholars.

With my honest appreciation, I wish the International Conference a grand success.

Prof. (Neelima Gupta)
Vice-Chancellor

प्रो0 नरेन्द्र बहादुर सिंह
कुलपति
Prof. Narendra Bahadur Singh
Vice-Chancellor

हरकोर्ट बटलर प्राविधिक विश्वविद्यालय
नवाबगंज, कानपुर-208002, उ0प्र0 (भारत)
HARCOURT BUTLER TECHNICAL UNIVERSITY
NAWABGANJ, KANPUR - 208 002, U.P. (INDIA)

Date: 13.12.2019

Message



It give me immense pleasure to know that the Dayanand Girls Post Graduate College, Kanpur is organizing 1st International conference on "Environment and Society (ICES 2019)" on 22nd and 23rd December, 2019.

I hope eminent speakers will cover the theme Environment and Society from different perspective. I am privileged to say that this conference will definitely offer suitable solution to the global issues.

I personally congratulate the entire team of organizing committee for their untiring efforts and extend my best wishes for the successful event and publication of souvenir.

I am sure it will be a great event.

(Prof. N.B. Singh)

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Ph. No. : +91 0512 2534000 | **Fax No. :** +91 0512 2533812

डा० एस० सोलोमन
कुलपति
Dr. S. Solomon
Vice-Chancellor

चन्द्रशेखर आजाद कृषि एवं प्रौद्योगिक विश्वविद्यालय
कानपुर-208 002, उत्तर प्रदेश, भारत
Chandra Shekhar Azad University of Agriculture & Technology
Kanpur-208002, Uttar Pradesh, India

दिनांकः दिसम्बर 10, 2019

Message



यह जानकर प्रसन्नता हो रही है कि सामाजिक कार्यो से जुड़े **भारतीय विचारक समिति, कानपुर** द्वारा **ग्लोकल इन्वायरमेंन्टल एण्ड सोशल एसोसिएशन, नई दिल्ली** तथा **दयानन्द गर्ल्स पी0जी0 कालेज, कानपुर** के संयुक्त तत्वाधान में **पर्यावरण एवं समाज** (Theme: Socio Economic Challenges of Agriculture Biodiversity and Environment) पर एक अन्तर्राष्ट्रीय संगोष्ठी का आयोजन किया जा रहा है।

पर्यावरण के प्रदूषित होने से भारत ही नहीं पूरा विश्व प्रभावित है तथा इस सुन्दर धरा को संरक्षित करने की हमारी जिम्मेदारी बनती है। आज आवश्यता भी ऐसे विषयों पर गहन चिन्तन एवं उपायों की है जो सीधे तौर पर मानवता के कल्याण से जुड़ी हो। ऐसे में इन संस्थाओं द्वारा प्रदूषित पर्यावरण से होने वाले समाजिक प्रभावों के विषयक संगोष्ठी में विद्वत जनों द्वारा विचार एवं सुझाव साझा किया जाना एक प्रशंसनीय एवं सराहनीय कदम होगा।

मैं संगोष्ठी के सफल आयोजन की कामना करता हूँ।

(सुशील सोलोमन)
कुलपति

Phone : +91-512-2534155 (Off.), **Fax :** +91-512-2533808 **E-mail** : vc@csauk.ac.in, www.csauk.ac.in

Prof. Dr. Shyam Narayan Labh (Gold Medalist)
M. Sc., Ph. D., D. Sc., FNAS, FBPS, APCBEES (UK)
FZSI, FLS (London) & NAST-INSA Fellow at CIFE, Mumbai

Senior Fulbright Scholar-2019
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Professor & Head (RMC)
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MESSAGE FROM INTERNATIONAL ADVISOR

It's my congeniality to express my views on the occasion of 1st International Conference on Environment and Society (ICES 2019) with theme: "*Socio-economic Challenges of Agriculture, Biodiversity & Environment* "organized by Glocal Environment & Social Association (GESA), New Delhi in association with DG PG College Kanpur, Indian Thinkers' Society (ITS), Kanpur and Asian Biological Research Foundation (ABRF), India and Sponsored by Department of Biotechnology, Govt. of India on December 22nd & 23rd, 2019 at Harcourt Butler Technical University (HBTU), Kanpur, India.

Inculcation has been a never-ending process. It doesn't stop after earning a degree and starting a vocation. Through perpetuating edification, vocation-minded individuals can perpetually ameliorate their skills and become more proficient at their jobs. I believe that participants prosper when they are inclined to postulate responsibility for their own learning. They learn in ways which suit their individual strengths and participate in an extensive program of enrichment activities.

I am venerated to reinforce the legacy of our perpetuated prosperity. The excellence of our friends proves itself in the number of champions and victors that we have engendered both in academics and innovations. I am additionally sure that this conference will provide a right platform for the researchers and academicians across the country to exchange their conceptions and views with the perspicacious community for fortifying their erudition.

I congratulate the organizing committee for this timely initiative and convey my best wishes for the grand prosperity of this event.

With Best Wishes



Prof. Dr. S. N. Labh

Date: 11/12/2019

Ministry of Fisheries and Livestock
Department of Fisheries, Bangladesh
E-mail: bborty@gmail.com
Cell phone: 0088 01715 470855

Message



DR. B. K. CHAKRABORTY
Researcher & Consultant
Dept. of Fisheries
Visiting Professor
Bangladesh Agricultural University (BAU)

This a great pleasure that Glocal Environment & Social Association (GESA),New Delhi; Harcourt Butler Technical University (HBTU), Kanpur; DG PG College, Kanpur; Indian Thinker, Society (ITS), Kanpur; Asian Biological Research Foundation (ABRF), India and Department of Biotechnology, Govt. of India are jointly organizing an International Conference on "Environment and Society (ICES 2019)", on 22 - 23 December, 2019 at Harcourt Butler Technical University (HBTU), Kanpur, India.

The theme of the conference is quite pertinent in contemporary scenario of the world in general. According to the demand of projected 09 billion population by 2050 (FAO), it should not be easy to meet up demand of food, fodder, fuel, flower, fibre, fishery, livestock and diary. Hunger, malnutrition, poor health and loss of biodiversity are such sever challenges which humanity and Mother Nature are going to face in the coming future. These challenges are the bottle marks in the process of human development as well. There are valuable themes are selected for discussion in the conference.

This seminar will provide a platform for the research of relevant fields to contemplate and present their research papers along with the opportunity to interact with fellow researchers and veterans of their area of research. I am sure that the delegates and speakers will get a forum for exchange their ideas and come to the final conclusion for future developmental planning and conservation of nature and natural resources.

I congratulate the organizing Chief Patrons, Patrons, Co-patrons, Chairpersons, Co-chairperson, Co-ordinators, Conveners, Organizing secretary, Member of the organizing committee, Conference Associate and entire team for taking up this challenging but momentous initiative. I am, therefore, confident that the two days seminar would witness intense academic discourse and discussions' which in turn would throw up tentative solutions to the issues in consideration.

With warm welcome of delegates, I wish the seminar a great success in its objective and mission.

DR. B.K. CHAKRABORTY

डॉ० नागेन्द्र स्वरूप
डी० लिट्

दयानन्द शिक्षा संस्थान
उत्तर प्रदेश, कानपुर

Date: 13.12.2019

Message



I am glad to know that DGPG College is going to organize an International conference on "Environment and society (ICES 2019) in association with GESA; New Delhi, HBTU; Kanpur, ITS; Kanpur, ABRF; India and Department of Biotechnology, Govt. of India on December 22 & 23, 2019. The subject of the seminar is topical and is of immense significance and interest to researchers and scientists working in the fields of Biology and allied branches.

I am confident that the deliberations and discussions will go a long way in equipping both students and teachers to fulfill their commitment to society.

I wish this endeavor all success.

Dr.Sunita Arya
Organizing Secretary
ICES 2019.

Dr. Nagendra Swarup

15/96, सिविल लाइन्स, कानपुर-208 001 फोन : 2305646, 2305648, 2305570 (EPABX) फैक्स : (0512) 2303111

KUMKUM SWARUP
Secretary

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(R) : 2303555, 2303777
E - mail: vsef1989@gmail.com

Date: 13.12.2019

Message



It gives me immense pleasure to know that DGPG College in association with GESA; New Delhi, HBTU Kanpur, ITS, Kanpur, ABRF, India and Department of Biotechnology, Govt. of India is organizing an International Conference on Environment and Society.

I hope the deliberations and discussions in the seminar will be instrumental in finding solution to the problems plaguing environment, agriculture and biodiversity.

I wish the conference a grand success.

Dr. Sunita Arya
Organizing Secretary
ICES 2019.

Mrs. Kumkum Swarup
Secretary
Dr. Virendra Swarup Education Foundation, Kanpur

Gauravendra Swarup

Secretary, Board of Management
Dayanand Girls College

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Date: 11.12.2019

MESSAGE

I am pleased to learn that DGPG College is organizing an International Conference on Environment and Society in association with GESA; New Delhi, HBTU; Kanpur, ITS, Kanpur, ABRF, India and Department of Biotechnology; Government of India on December 22 & 23, 2019.

India has immense potential in Biological Sciences for many reasons such as abundance of vast biodiversity, varied forms of agriculture and topography offering many challenges in conservation and combating the problems of pollution and degradation in the quality of the environment.

I hope the discussions and talks delivered during the technical sessions will provide suggestions in coping with the present challenges of agriculture and environment.

I wish all success to the conference.

Dr. Sunita Arya
Organizing Secretary
ICES 2019.

Gauravendra Swarup
Secretary
Dayanand Girls PG College
Kanpur

DAYANAND GIRLS P. G. COLLEGE
accredited 'B'' by NAAC

Date: 13.12.2019

Message



It is a matter of great pleasure to know that Glocal Environment and Social Association (GESA), New Delhi and DG PG College, Kanpur in association with ITS, Kanpur and ABRF, India is organising an International Conference on the theme "Socio-economic challenges of Agriculture, Biodiversity and Environment" on Dec. 22 & 23, 2019.

Biodiversity loss is a critical issue and has close linkages with land use changes, climate change, agricultural practices, urban growth and environmental pollution. Healthy biodiversity and healthy environment are crucial to the future of this planet.

I hope discussions in this conference will pave the way for identifying solutions to environmental issues.

I wish all success to this conference.

Dr. Sadhana Singh
Principal
Dayanand Girls PG College
Kanpur

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GLOCAL ENVIRONMENT &
SOCIAL ASSOCIATION (GESA)
H.O.: 62, Jasola, New Delhi-110025
http://www.gesa.org.in

Date: 11.12.2019

Message



It is a pride moment for us that Glocal Environment & Social Association (GESA) New Delhi is organizing its first annual session in the form of an International Conference on "**Environment and Society**" (**ICES 2019**) on 22nd & 23rd December 2019 at HBTU Kanpur. The initiative to organize its first annual session in Kanpur is undertaken by Dr Sunita Arya Secretary GESA and Associate Professor, Zoology, DG PG College Kanpur and her energetic & esteemed Principal Prof Sadhana Singh maa'm. Besides DG PG College, this conference is organized in association with HBTU Kanpur, ITS Kanpur and ABRF Prayagraj.

The theme of first ICES chosen by the organizing committee as "**Socio-economic Challenges of Agriculture, Biodiversity & Environment**" is absolutely relevant in present context of India as well as the globe. In fact, socio-economic challenges of agriculture, biodiversity and environment should be discussed at each and every possible level till the full awareness is achieved.

I hope that this international conference will provide a platform for the researchers of relevant fields to contemplate and present their research papers along with the opportunity to interact with fellow researchers and veterans of their area of research. The ICES would witness intense academic discourse and discussions which in turn would throw up tentative solutions to the issues in consideration.

I congratulate the entire organizing team for taking up this challenging but momentous initiative. I on behalf of GESA, impart ecofriendly best wishes to the organisers for organising the 1st ICES and welcome all the participants.

M. Verma

Smt. Menka Verma
Gen. Sec. GESA

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JLN Road 'The Little House'
Tagore Town Prayagraj 211002 (India)

Date: 10.12.2019

Message



It is a matter of immense pleasure that Glocal Environment & Social Association (GESA) New Delhi is organizing its first annual session in the form of an International Conference on **Environment and Society** (**ICES 2019**) on 22nd & 23rd December 2019. This conference is being organized in association with DG PG College Kanpur, HBTU Kanpur, ITS Kanpur and Asian Biological Research Foundation (ABRF) Prayagraj, India.

The basic theme of the first ICES as **Socio-economic Challenges of Agriculture, Biodiversity & Environment** is quite pertinent in contemporary scenario of the world in general and India in particular. No doubt, agriculture, biodiversity and environment have big challenges over socio-economic issues.

I hope that this conference will provide a platform for the researchers of relevant fields to contemplate and present their research papers along with the opportunity to interact with fellow researchers and veterans of their area of research. I am confident that outcomes of this international conference on various issus on the subject will generate a new concept in order to conserve and protect the water, nature and biodiversity (key objective of ABRF).

I on behalf of ABRF, extend my best wishes to the organizers for organizing the international conference and welcome all the participants across the nation and abroad.

Birendra Singh

(Birendra Singh)
Treasurer, ABRF Prayagraj
www.abrf.org.in

DAYANAND GIRLS P. G. COLLEGE
accredited 'B'' by NAAC

Date: 13.12.2019

Message



It is a matter of great pride for Dayanand Girls Post Graduate College to organize its ***1st International Conference*** on **Environment and Society (ICES 2019**) on the theme of **Socio-economic Challenges of Agriculture, Biodiversity and Environment** on ***December 22nd and 23rd, 2019*** in association with Glocal Environment & Social Association (GESA), New Delhi, Harcourt Butler Technical University (HBTU), Kanpur, Indian Thinkers' Society (ITS), Kanpur, Asian Biological Research Foundation (ABRF)Prayagraj and Department of Biotechnology, Govt. of India.

Technological development in agriculture has led to a diminished use of biodiversity in food production, and a reduced efficiency of energy use. This conference explores the reasons for these paradoxical effects of progress, by considering the farming system as an integral part of the larger socioeconomic system and natural environment in which it operates.

The relationship between socioeconomic and demographic characteristics on the one hand and actual productivity of labor and land in agriculture on the other hand is confirmed by a cross-sectional analysis of a large sample of countries. General trends in economic and population growth indicate that most countries are moving toward high-energy-input and labor-saving technologies. Moving away from this path of technological development in agriculture, as would be required to preserve and enhance biodiversity use in agriculture, is an immense challenge that needs to be faced. This conference aims at finding solutions or suggestions to improve the current scenario. The need of the hour is to harness the huge brain power of the youth of India to work in an optimistic approach.

International and national delegates, researchers and eminent scientists will be speaking on the current compelling scenarios of the earth related to agricultural problems, conservation of biodiversity and environmental challenges. It gives me immense pleasure to see an overwhelming response by students, teachers and researchers and I look forward to organize such conferences whose outcomes benefit the society at large and help in shaping a healthy, happy and prosperous India. Warm welcome to all delgates.

Dr. Sunita Arya
Organizing Secretary

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About the Organizers

Glocal Environment & Social Association (GESA)

In order to serve a bit the Nature and Society for better future, the Glocal Environment & Social Association (GESA) is constituted. Its headquarter is located in New Delhi. Its main aim is to develop and promote '**global thought and local action**' ideology to save the nature. It organizes the seminars; workshops etc. to aware and educate the people on blazing environmental and social issues. The GESA felicitates the persons and organizations for their outstanding services rendered in various fields of agriculture, arts, biodiversity conservation, commerce, culture, education, environment, healthcare, humanities, literature, mass communication, music, patriotism, peace and harmony, science, sports, technological innovations and other social services. The GESA confers following categories of awards and honours through search and nominations:

1. **Life Time Achievement Award** (above 55 years of age)
2. **Hon. Fellowship/ Fellowship (FGESA)**
3. **Dr. APJ Abdul Kalam Green Environment Promotion Award**
4. **Dr. Sarvepalli Radhakrishnan Education Promotion Award**
5. **Chaudhary Charan Singh Award for Agricultural Innovations**
6. **Sardar Patel Glocal Award for Social Awareness**
7. **Lal Bahadur Shastri Glocal Award for Biodiversity**
8. **Best Faculty for Teaching Innovations**
9. **Innovative Educationist Award**
10. **Teacher of the Year Award**
11. **Senior Scientist Award** (above 40 years of age)
12. **Technological Innovations Award / Glocal Engineers Award**
13. **Doctor of the Year Award**
14. **Paryavaran Ratna Puraskar**
15. **Vigyan Bhushan Puraskar**
16. **Sahitya Shri Samman**
17. **Young Scientist/Young Researcher Award** (below 35 years of age)

International Journal of Biological Innovations (IJBI)

The GESA publishes IJBI Research Journal (ISSN: 2582-1032). The IJBI publishes original articles/works (Research paper, Review article, Short Communications, Case study, etc.) related to all fields of Biological Sciences (Zoology & Botany) including agriculture and environment. It disseminates the scientific research and recent biological innovations. Its periodicity is twice in a year i.e. June and December.

website: www.gesa.org.in

Harcourt Butler Technical University (HBTU) Kanpur

Harcourt Butler Technical University Kanpur is established by the Government of Uttar Pradesh with a view for making it a leading Residential University to become a Centre of Excellence with focus on Research and Development and Incubation in the field of Engineering, Technology, Basic & Applied Sciences, Humanities, Social Science & Management Architecture and other professional courses. HBTU aims to promote studies, research & innovation in engineering areas of higher education, to enhance skill development through continuing education programme and knowledge and to achieve excellence in higher Technical education.

DG PG College, Kanpur

Dayanand Girls' P.G. College is the first Post-graduate college for women in Kanpur, affiliated to C.S.J.M. University, Kanpur. The college brings students from different cultural and religious backgrounds and offers rich and varied academic and vocational programmes. The institution strives to develop each student into a strong, integrated woman and inspires each young person to be a responsible citizen, committed to the services of others and society.

Dayanand Girls' Post Graduate (DG PG) College is run and managed by Dayanand Shiksha Sansthan Kanpur. This College was established on 1st July 1959. Currently this college is under Star College Scheme of Department of Biotechnology, Government of India. It offers B.A., B.Sc, B.Ed., M.A. and M.Sc. in various subjects. Several research scholars are pursuing their doctorate degree. The college is pioneer in performing social, cultural, environmental, cleanliness, women empowerment, child education and other awareness related activities. It is rich in having versatile alumni.

Indian Thinkers' Society (ITS) Kanpur

The vision of Bhartiya Vicharak Samiti (ITS) is to provide services to others, promote integrity and advance World understanding, goodwill and peace through fellowship of teachers, business

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Abstract No. 1

IMPACTS AND CHALLENGES OF RENEWABLE ENERGY ON ENVIRONMENT & SOCIO ECONOMICS

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ABSTRACT

As innovation brings down costs and starts to deliver a clean energy future, Renewable power is at its explosion. Solar and wind generation broke all records by being integrated into the national electricity grid without any sort of negotiation on consistency. Therefore, renewable energies are progressively displacing "dirty" fossil fuels in the power sector, offering the advantages of low-level emissions of all types of pollution. The course of action indulging in harnessing the power of nature has been used for a long time for heating, transportation, lighting, and more, while now it is often thought of as new technology.

As compared to the then traditional fossil fuel technologies, Renewable energy technologies are generally more labour intensive. The jobs generated by, wind, and other fuel-free renewable energies, mostly come from the manufacturing, installing, and maintenance of these systems. The majority of jobs using renewable fuel sources for energy procurement come from farming feedstock and distribution of the bio-fuels that they create.

On the whole, the concept of going green is not just to save our environment but to save our economy as well. Green jobs would help in building a healthier future for everyone on the planet by creating a clean and healthy environment and these jobs will stay for long years to come.

The potential of the renewable energy industry depends on numerous aspects; on finance, risk-return profiles, business models, lifetime's investment and a sum of other economic, policy and social factors.There has been a rapid escalation in the number of countries showing awareness towards these multiple opportunities and are making necessary improvements their national energy policies to produce social benefits by vigorously pursuing and shaping the innovative energy world groundwork on renewable energy.

Enhanced by impressive technological innovation and cost reductions, renewable energy is now primarily considered for its social and economic benefits in an increasing number of countries.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 2

TRANSCRIPTOMIC ANALYSIS FOR GENETIC RESOURCES MANAGEMENT OF NON-MODEL SPECIES- A GUIDE FOR DESIGN OF INFORMED CONSERVATION PLANNING PRACTICES

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ABSTRACT

Transcriptome analysis is one of the ways to understand the adaptable phenotypes of non-model species that needs to be supported through conservation efforts. The endangered, threatened, and indigenous flora and fauna can be sustained through informed conservation planning that needs a priori information on the genetic resources, which often influences a species distributional range and potential for acclimatization and adaptation to changing environmental conditions. The output of transcriptome sequencing allows for an unbiased phenotypic screen of many traits. In fact, expression of thousands of genes in parallel can be measured by transcriptomic screen. Our group has worked on the whole-transcriptome analysis of many non-model invertebrates strategic towards conservation efforts by National Institute of Biological Resources (NIBR), South Korea. This includes butterflies of lycaenids family such as Protantigiussuperans and Spindasistakanosis, Asian Giant Hornet, Vespa mandarinia, commercial bivalve species, Cristariaplicata, and endemic land snails Aegistachejuensis and Aegistaquelpartensis. The results show annotation of transcripts to known regulatory genes involved in growth and development, adaptation, and reproduction of the species. Furthermore, many polymorphic simple-sequence repeat (SSR) markers have been elucidated in the coding transcripts that are resources available for the validation of population diversity. We propose integration of transcriptomic analysis with ecological studies as one of the strategies towards biodiversity conservation in India and reducing rate of species extinctions.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 3

BIOWASTE PROCESSING AND ORGANIC WASTE MANAGEMENT THROUGH INTENSIVE REARING OF HERMETIAILLUCENSBLACK SOLDIER FLY LARVAE (BSFL)

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ABSTRACT

The black soldier fly (BSF), Hermetiaillucens(L., 1758) is a Diptera of the Stratiomyidae family found throughout the world in tropical and warm temperate regions. This polyphagous species represents a high potential agent for waste management and outstanding insects for bioconversion of organic waste, which can convert separate or mixed waste, i.e. manure, kitchen waste and st raw, into biomass rich in protein and fat. Larvae are able to consume a wide range of substrates such as agricultural byproducts, animal and plant origin organic waste. In addition, the larvae represent a biomass rich in proteins and lipids that can be used as feed for livestock such as fish, poultry and pig or incorporated into biodiesel production. One of the key steps to mass rear this species is to ensure efficient production of eggs in quantity and quality in order to recover large volumes of organic matter, ensure consistent larval production and maintain progenitors.
The global food demand is expected to increase by 70% by the year 2050 in order to meet the demands of the 9.7 billion people who are forecasted to inhibit the globe by that time. Bio-waste includes garden and park waste, aliment and kitchen waste from households, restaurants, caterers and commensurable waste from victuals processing plants. Agricultural wastes, municipal solid wastes, sludge, waste-dihydrogen monoxide and victuals wastes are currently optically discerned as low-valued materials. However, they are commencing to be apperceived as resources for the engenderment of a variety products. Agricultural wastes contain high calibers of cellulose, hemicelluloses, starch, proteins, as well as lipids which are subsidiary for alternate utilization of animal protein, animal lipids and manuring strengths. Thus, intensive rearing of BSFL not only solve the problem of organic waste management but also will be successful business for alternate animal protein as insect meal and lipid as insect oil along with insect frass.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 4

AWARENESS ON NUTRITION THROUGH SCHOOL POND EDUCATION IN NEPAL

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ABSTRACT

Childhood and adolescence is a critical period need high nutrient and a diet of high nutritional quality is therefore particularly important for children's cognitive and physical development. However, in developing nations such as Nepal, over 41% of children under five suffer from chronic malnutrition and 11% are wasting. The most common forms of malnutrition in the country are protein energy malnutrition, iodine deficiency disorders, vitamin A deficiency, and iron deficiency. Further 49% of children under five in Nepal suffer from stunting and 48% are anemic. Fish provides valuable nutrients including high-quality proteins, vitamins A, D, and B12; and long-chain omega-3 polyunsaturated fatty acids. Fish bones, when eaten, are also an excellent source of calcium, phosphorus, and fluorides. Establishing school ponds and a curriculum for school age children, teachers and women's groups should be an effective approach to educate rural communities about the nutritional value of fish and methods of aquaculture. The development of school ponds increased awareness of the value of nutrition and fish consumption in rural households by teaching school children and participating teachers about aquaculture. It is recommended that school pond education should be continued to create awareness on nutrition and expansion of aquaculture program.

Abstract No. 5

CONSERVATION AND PROMOTION OF MAJOR CATFISHES AND CHITAL IN THE PADMA RIVER SYSTEMS

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ABSTRACT

The River Padma is the main distributary of the Ganges that originates in the Gangotri glacier of the Himalayan and enters into Bangladesh from India at Shibganj where becomes known as the Padma River. The purpose of this study is to take important measures on conservation and promotion of major catfishes such as; air (Sperataaor, S. seenghala), pangus (Pangasiuspangasius), boal (Wallago attu), rita (Rita rita) and chital (Notopteruschitala) in the Padma river. A study was carried out to identify the habitats, breeding ground, breeding season, larval development and other knowledge about the major catfishes and chital, and developed the methods on effective conservation and promotion in the riverine systems. Primary data was collected by conduct FGDs, KII, local ecological knowledge and semi-structured questionnaires. Questionnaire based survey and FGDs were conducted in the location of Godagari, Charghat, Bagha, Ishwardi, Goalondo and Noriapoint of the Padma River. Soil and water quality parameters were also recorded during pre-monsoon and monsoon period. A total of five breeding grounds of the major catfish and chital were identified with variations in area and depth; soil and water quality.Breeding of air was recorded between April and May followed by boal between May and June, Chital and Rita between June and July and pangas between July and September. A decreasing trend in production of major catfish and chital was noted during 2014 to 2018. Major cause of poor ecosystem health; poor water volume and siltation is due to Farakka Barrage of India. Over fishing and use of illegal gears were found as a common problems regarding loss of fish habitat, less fish availability and reduced fish production. LEK was found to be used to increase the availability of chital in Ishwardi area through sanctuary. Comparatively better result of fish availability with Norianear Meghna River was due to maximum area and depth of the basin, better management and good governance along with conservation efforts.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 6

MEDIA, INDIAN SOCIETY AND BIODIVERSITYCONSERVATION

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ABSTRACT

Democracy has four pillars namely Legislature, Executive, Judiciary and Media. The Media performs its responsibilityas fourthpillar in democracy which ensures that all people of country are aware of what is happening in and around the world.It educates the youths in order to establish national integration, patriotism and social harmony. The media not only entertains the people with movies, serials, interviews, live matches, live programs, reality programs, quiz programs, etc. but also helpsand motivates the Indian society to conserve the biodiversity. The mediacampaigns the global and local environmental issues and their future impacts on varied forms of our society.It further narrates the threat of biodiversity loss and its long term impacts on ecological balance. The disturbance in ecological balance in turn badly influences the entire biota including human survival. The media influences the all the forms of Indian societies that in turn prove beneficial for biodiversity conservation.Biological diversity conservation has now become a global concern. Each and every one has to impart its positive ener gy at local level to ensure the biological diversity conservation throughout the globe.

Abstract No. 7

PRELIMINARY SURVEY AND DOCUMENTATION OF TREES AND SHRUBS FODDER SPECIES IN UPPER GANGETIC PLAIN

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ABSTRACT

India is gifted with the largest livestock population in the world. The animals play important role in human life as they provide meat, milk, leather or wool, traction to plow fields and manure to fertilize crops. The contribution of livestock in agriculture production is around 35 per cent and its contribution to the GDP is 4 per cent (Maharashtra Animal Husbandary Dept., Vision document of IGFRI and news report). This sector also provides livelihood to 70 per cent of rural population. Fodder crops are the cheapest source of feed for livestock. They contain high levels of protein and some important minerals like phosphorus(P), nitrogen(N) which make animals grow rapidly. Trees and shrubs provide fodder which is of great importance during period of nutritional stress in the dry season when the nutritional value of dormant grasses and forbes is low. This preliminary work is based on secondary data, herbarium visits at LWG and few field visits in which 104 fodder plants species (trees and shrubs) have been surveyed, collected, and documented. Based on the data collected from field visits, it was observed that 71.2% was of trees and 28.8% was of shrubs. This work will be very beneficial for agriculture scientists, agriculture personals and farmers. Since the Upper Gangetic Plain is a densely populated region which is heavily dependent on milk and milk made products and also the area is predominantly occupied by agricultural lands, the present study is very prevalent in this area, as previously not much attention has been given on this aspect.

Abstract No. 8

PARALI (STRAW) BORN POLLUTION AND ITS MANAGEMENT

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ABSTRACT

Agriculture has a very old relationship with Indians. Agriculture has played a major role in the rise of civilization. Two-thirds of India's population is engaged in agricultural work. The agriculture here is monsoon based. Summer, rain and winter are found in three types of seasons, depending on the monsoon. On this basis, three major crops of Kharif, Ravi and Zayed are found here. Under Kharif crops, paddy crop is considered to be predominant. It is the vanguard crop of the flat plains of India. Normally paddy nursery in North India is prepared in the months of May-June. Paddy is planted by June, July and August. The Paddy crop is ripened by October and November. The finished crop is harvested and thrashed by machines and laborers. The Agro waste of paddy plants remains after harvesting and beating. The leftover paddy stalk as a crop residue is called Puval(Straw) or Parali or Paira. When the farmer stores the grains of paddy, he burns the Parali (straw) in the fields as crop residue. Today, almost all farmers are doing this work. Burning of Parali (straw) is a smog like mist in the atmosphere of the entire North India in the months of October and November. This deteriorates air quality. This causes breathing problems like asthma, hearts, newborns and people suffering from allergies to breathe. They feel suffocated. According to a report of (AQI) Air Quality Index published in Amar Ujala on 1 November 2019, the alarming level of air quality has reached above 400 micrograms per cubic meter in the major cities of North India like Noida, Ghaziabad, Delhi and Kanpur etc. The problem of air quality arising from burning of Parali and Garbage is a matter of concern. Therefore, proper disposal or management of Puval or Parali is more important than burning it. The proper way of its proper disposal or management is composting it in the soil of the field. Some Puvals should be maintained for fodder for livestock and some for domestic use.

Abstract No. 9

THE INCREASING DECLINE IN POPULATION OF HOUSE SPARROWS (PASSER DOMESTICUS) IN NORTHERN INDIA

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ABSTRACT

Birds are the common denizens of the ecosystem and are considered as indicator species of ecosystem health. Various studies depicted the reduced teemingness of several bird species in most parts of the world. Among these birds, the house sparrow (*Passer domesticusindicus*) is the most familiar species which are co-evolved with man. The disappearance of sparrows has been widely reported from all over the world, including India too. . Sparrows are highly sensitive to local environmental parameters which have contributions in its decline. The House Sparrow Passer domesticus is traditionally associated with human habitation.

Possible reasons for decline in House sparrow population is reported from different part of the world with multiple reasons. The causes for the decline of sparrow are not scientifically proved, but several factors have attributed to their decline. According to the recent studies, conducted mainly in the Lucknow areas the, important reasons for the decline of sparrows are climate changes, increased temperature, pollution and modernization of building without enough space for nesting. Cutting down of roosting trees and plants (small or medium sized trees) in towns has also caused decline in the population of sparrows. Also natural regions like predation and reproductive problems also affect the population. Change in grain storage practices like plastic bagging of grains to minimize spilling out and spoilage, use of pesticide and chemicals in grains, decreased ration and grocery shops might have reduced food availability causing a scarcity of food. Change in agriculture patterns and increased use of pesticides results in a decline in invertebrate prey. The survival rate of young chicks is continuously decreasing due to decline in insects ,which form their main food. Poison residues from contaminated food grains also have devastating effects on sparrows Change in building construction pattern, well maintained modern gardens in houses instead of weedy gardens which provide feeding grounds for sparrows and electromagnetic waves from cell phone towers are the major drivers of decline.

Thus through this study it is observed that with increasing urbanisation the House Sparrows may not find the nesting sites in Suburban areas also. The areas with low socioeconomic human population will also get developed slowly, leaving no nesting space for House Sparrows. Perhaps, it is a warning signal of the approaching dooms day. It is time for humanity to wake up and to act for retaining the ecological balance and harmony.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 10

A PROSPECTIVE STUDY OF SOCIAL POLLUTION IN JAUNPUR DISTRICT

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ABSTRACT

Social pollution is the dangerous social illness become a very challenging problem in present era in the world. It is undesirable instinct development among the socioeconomic stressed person which is cancerous in society, harmful for people health, corruption and more, also cause the serious threat to the peaceful survival of the society. In Jaunpur district social pollution is the responsible for numerous problems leading to devastation of our social, political, economic and moral systems and values of life. Such social pollution causing severe deviations in our activity of life. Our trust in senior citizens tradition, ethics, culture, are gradually demenencing the society. In Jaunpur district, the young generation are loosing their patience, increasing tension, frustration, psychological disorder, also go to destroying motivational activity due to eating much more Dohra and too use of Android. The after effect of social polluted person create the disorganization, caste feeling, communal problem, violence and un behavioural social activities.

Abstract No. 11

BITTER MELON: A REMEDY TO COPE UP HEALTH CHALLENGES

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ABSTRACT

Bitter melon- a tropical vine, belongs to family Cucurbitaceae also called Momordica charantia, Bitter gourd or Karela. It is used as a vegetable in India and other Asian countries. The fruits, seeds, and leaves of Bitter melon are found to be beneficial in different diseases. Since the ancient time, Bitter melon is known to cure diabetes, stomach, and intestinal problems. Researches conducted on it in the recent decades have found it to contain anti-cancerous properties.

Bitter melon juice and ethanolic extract of Bitter melon leaves are found to be effective in reducing Bone cancer cell (MG-63 and SaOS2) growth by inducing apoptosis and cell cycle arrest. Bitter melon extract exerts a noticeable effect against Breast cancer, Pancreatic cancer, Prostate cancer and many more so that it becomes a chemo preventive agent in many cancer forms.

Bitter melon provides an alternate therapy to combat cancer-like diseases which minimizes the risk of side effects of chemotherapy, radiotherapy and hormonal therapy. More research is needed to outline the potential mechanism of action of Bitter melon juice and leaf extract using an animal model.

Abstract No. 12

GLOBALIZATION AND BIODIVERSITY PERSPECTIVES OF FOOD AND NUTRITION IN INDIA

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ABSTRACT

Everyone has the right to a standard of living and medical care and necessary social services in circumstances beyond his control. Globalization is a consequence of liberalization. This results in dietary convergence and adaptation, nutrition transition. Over the years this has resulted in changes in patterns of consumption of healthy and unhealthy food items. The impact of globalization on Indian food industry has been both positive and negative. Since India has group of people ranging from below poverty line to group of people being the richest in the world, hence the impact is varied. According to FAO,2004, The consumption of Food items like milk, egg, wheat, milk increased from 1987-88 in comparison to the year 1999-2000.According to ICMR, the per capita consumption of fish and prawns should be 25 while it is 0.04, similarly of meat it should be 25 while it is 0.32, of egg it should be 45 while it is 0.11 in Uttar Pradesh as per global burden of disease survey,2013, prevalence of obesity and overweight was 19.5. Generally, rich are eating junk and processed foods while poor are micronutrient deficient which requires strategies like nutrition education, food fortification and enhanced safety nets for the poor.

Abstract No. 13

PHYSICO-CHEMICAL STUDY OF GROUND WATER QUALITY & PLANKTON DIVERSITY OF GURMA DAM MAUGANJ REWA (MP) INDIA

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ABSTRACT

To Present study deals with ground water Quality and Plankton Diversity of Gurma Dam Mauganj, Rewa (MP). The Ground water Parameters such as, pH, temperature, alkalinity, calcium, magnesium, phosphate, total hardness, dissolved oxygen, biochemical oxygen demand, sulphate, arsenic, iron, chloride and Floride were estimated in the samples to evaluate their quality. The data of physico-chemical parameters are compared with WHO (1992) and IS: 10500 standards for drinking water. Our result revealed that concentration of DO, BOD, Total hardness, Calcium, magnesium, sulphate, turbidity, alkalinity, phosphate, iron and chloride are within permissible limits and Iron, phosphate are negligible in comparison to permissible limits. The proper treatment necessary before the use for drinking purposes and irrigation purposes. Finally it can be suggested that an intensive study may be carried out before the domestic consumption.

Abstract No. 14

MORPHO-TAXONOMIC DIVERSITY OF SOME COMMON GRASSES OF VINDHYAN REGION (UTTAR PRADESH), INDIA

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ABSTRACT

Biological diversity is the key to adopting to global change. If we are to adapt food production system (for which members of Grasses are very much exploited) to radically changing conditions in the coming decades, plants and animal diversity will be the single most critical resource for doing so. Correct taxonomic identification and description of species occurring in particular area is essential for the conservation of biodiversity and for estimating how many species there are left to be discovered. It is commonly agreed that at current rate of extinction many species will die out before they are described scientifically. This will result in to hampering the biodiversity conservation policy. Present study contributes morpho-taxonomic diversity of twenty two grasses collected from Vindhyan Region of Uttar Pradesh, India, belonging to ten genera and six tribes, viz. *Apludamutica L., Arundodonax L., Aristidaadscensionis L., A. funiculate Trin. & Rupr., A. hystrixL.f., Arthraxonlancifolius (Trin.) Hochst., Avenasativa L., Axonopuscompressus (Sw.) P. Beauv, Bothriochloapertusa (L.) A. Camus, Brachiariadeflexa (Schumach.) C. E. Hubb & Robyns, B. distachya (L.) Staf, B. eruciformis (Sm.) Griseb., B. milliformis (J, Presl) Chase, B. mutica (Forssk.) Stapf, B. ramose (L.) Stapf, B. reptans (L.) C. A. Gardner & C. E. Hubb., B.subquadripara (Trin.) Hitch.,CenchrusbiflorusRoxb., C. ciliaris L. Chloris barbata Sw., C.dolichostachya Lag., and C. virgata Sw*. Tribe Andrpogoneae and Paniceae represented by three genera each and the remaining four genera belong to four dif ferent tribes i.e. Arundineae (*Arundo L.*), Aristideae (*Aristida L.*), Aveneae (*Avena L.*) and Cynodonteae (*Chloris L.*). Reported taxa are illustrated in detail along with taxonomic keys at different levels.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 15

AN EMERGING CHALLENGES FOR ENVIRONMENTAL PROTECTION

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ABSTRACT

In Indian aspects the Environment is concerning an old Indian civilization. Environment has entered the bound the common man and almost everyone. The Environmental degradation on pollution have reached much more alarming dimensions due to poverty, pollution, and population, deforestation, unplanned industrial development without proper environmental management and also the safe guards of ecosystem. In present era heavily pollutants and critically affected all most major cities in India identified. Control of water pollution, air, and land pollution has established by Government organization and NGO, the work in escape of environment is continuously in growing condition. The Holy River Ganga and Gomti river purification plant is running successfully in process. In India the protection of Environment through the pollution control is progressive by Govt. of India supporting Legislative acts. The Honourable Supreme Courte of India giving forcely direction to Central Government of India and other organization to create valuable process by Environmentalists and Scientists to how protect environment. All Indian universities has compulsory to graduate students to read the Environmental Education.

Abstract No. 16

STRUCTURAL APPLICATION OF NATURAL FIBER REINFORCED POLYMER COMPOSITE

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ABSTRACT

Eco-friendly and sustainable technologies are gaining more and more importance day by day to increasing concern of academicians and researchers towards environment. Natural fibers are offering numerous advantages like low cost light weight biodegradability sustainability along with the ease of availability & manufacturing over this synthetic counterpart, that's why they have been used as reinforcing material in different polymer matrix for the development of polymer composites. Researchers have reported diverse application of natural fiber based composites. Automotive industries is one major sector using these novel materials for light weight parts. Packaging is one of the major industry which is growing day by day. Natural fiber based polymer composites are also use in this field. Waste water treatment is another important area which utilises the potential of natural fiber based composites. Structural application of natural fiber reinforced polymer composite also plays an important role in supporting the structure of final designed component (Ex aircraft, Vehicle chassis, Load bearing members used in construction, ballistics). Diversity of application of natural based polymer composites are making it very important in the field of material science and engineering. This article gives review of recent advances and development and challenges in the diverse application of natural fiber based polymer composites.

Abstract No. 17

ENVIRO-TOXICOLOGY AND LAW: A DYNAMIC DIMENSION OF INDIAN JUDICIARY

Partha Dey

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ABSTRACT

Toxicology is a science of poison. Whether a particular substance is poisonous or not depends upon the types of organism exposed, the amount of substance, administrated and way of the exposure. While, Environmental toxicology is integrated science to which not only deals with the exposure of the toxicants through the pathways like polluted air, water, industrial effluents and contaminated food, but also provides an outline of assessment of toxic substances in the environment. It provides monitoring, measurement of toxic substances present in environment as well as measure the adverse effects of living or non-livingorganism, which comprised our eco-systems, the metabolism, and biological and environmental fate of toxins. It is unpleasant truth that main causes of pollution is a human population, and his inter-connected with socio-economic development, unwanted excessive demands, wastage of natural resources and greediness is liable to use toxic substances for the achieve more profits. The paper is focusing mainly the three types of pollution such as, air, water and soil that has contaminated either by natural disaster or of human made pollution. If we discuss about the causes of air pollution, which mainly caused by the presence of air pollutants, like,SO^2 released from industrial processes, CO is non-irritating toxic gas. It is a product by incomplete combustion of fuel such as natural gas, coal or wood. Most unforgettable news of MIC (Methyl Iso Cynate) gas leaked from the pesticide industry plant situated at Bhopal (Bhopal Gas Tragedy, M.C.MehtaVs. Union of India) was highest example of adverse effects ofthe toxic gas. Similarly, water pollutants are different chemical generally atoms or molecules, which have been discharged into natural water bodies usually by human conducts, industries sewage ways. As result, skin, kidney, liver has affected by consumption of polluted water and also effects aquatic fauna and flora in adverse ways. Soil pollution as part of land degradation has caused by the presence of xenobiotics (human-made) chemicals in the natural soil environment. It has caused by human made, industrial wastage, pesticides and insecticide. The toxic material heavily polluting the soil and dangerous microorganism that enter through food, water and food chain, for example, fluoride has been known to negatively affect aquatic wildlife. Organophosphorus is used primarily in pest control, but it is also causes of asphyxia, if it is applied to human body. Finally, the paper attempt to explorethe procedure of taking sample of pollutants (water, air and soil), measure the values of scientific toxicological evidence for achieving a successful justice through Indian judiciary and also analyses the precedent which will give a fruitful way for future generation.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 18

IMPACT OF MONSOON ON WATER QUALITY INDICES OF MASHI DAM, A MANMADE RESERVOIR

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ABSTRACT

Seasonal variations in the water of Dam have been analysed for two consecutive years (2014 and 2015). Water samples were periodically collected both in pre-monsoon and post-monsoon seasons and investigated for several parameters. Seasonal changes were observed for dif ferent parameters such as temperature, electrical conductivity, alkalinity, total hardness, chloride, Ca2+, Mg2+, HCO3-, NO3-, and PO43- etc. Heavy toxic metals were found below permissible level with significant variation in other physicochemical parameters for e.g. pH, temperature, electrical conductivity, total hardness etc. The changes related to other parameters were analysed by the Box and Whisker plots which showed that [Ca2+], [Mg2+], [HCO3-], [Cl-] and [SO42-] were higher during pre- monsoon periods as compared to post-monsoon periods. Piper plots exposed that in the entire water sample, alkali earth metal elements [Ca2+, Mg2+] were higher than alkaline elements [Na+, K+] and weak acids were [CO32- + HCO3-] higher than the strong acids [Cl- + SO42-] which provides the overall character to the water sample. Thus, the water quality shows seasonal variations. The calculated WQI revealed that water of Mashi dam was poor which may be attributed due to the presence of high concentration of total dissolved solids, chloride and total hardness. On comparison to WHO and BIS, value the water was found suitable for agriculture and fisheries. However, it is not recommended for direct human consumption on the basis of WQI.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 19

ABUNDANCE AND INSECT BIODIVERSITY IN CULTIVATED LAND OFCORBETT CITY (RAMNAGAR), UTTARAKHAND, INDIA

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ABSTRACT

Biodiversity is essential for maintaining the ecological functions and provides diverse functional roles in the ecosystems. Insects play crucial role in establishing ecosystems by influencing the relationship between flora and fauna. Insect diversity is essential for valuable services such as scavenger and pollination. Ramnagar the gateway of Oldest National Park "Corbett" is located at foothills of Himalayan region and has an elevation of 345 meters. Due to its unique geographical location covered with mixed forests and crops, it allured high insect diversity. The survival of these ecosystems and wildlife sustained are now threatened by human activities like harvesting, agricultural expansion, anthropogenic activities, population explosion, urbanization, pollution, lax implementation of environmental policies and tourism, the insect biodiversity of Ramnagaris getting extinct day by day. Not only does this affect the food chain, but also the livelihood and the culture of millions of Indians who depend on local biodiversity. Conservation is an ethic of assets use, allocation and protection. Its primary focus is upon maintaining the health of the natural world, its habits and biodiversity. Biodiversity preservation in ecosystems can provide information about maintenance of environmental resources and sustainable development. The aim of study to determine insect diversity, abundance and species richness of cultivated land of Ramnagar. This work is also focused on identifying the major pollinators for different crops and these efforts work towards the goal of insect diversity conservation in this particular site.

Abstract No. 20

ANALYTICAL REVIEW OF RENEWABLE RESOURCES IMPACTING ENVIRONMENT

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ABSTRACT

Every energy source has some impact on our environment. Fossil fuels such as coal, oil, and natural gas have a severe impact on the environment as compared tomost of the renewable energy sources. Air and water pollution, damage to public health, wildlife and habitat loss and global warming emissions are such negative impacts.However, renewable sources like wind energy, solar power, geothermal, biomass, and hydropower also have environmental impacts, some of which are even significant. The environmental impacts associated with wind power and solar power includes massive land usage and habitat loss, water usage, and the use of hazardous materials in their manufacturing. The exact type and intensity of environmental impacts varies depending on the specific technology used, the geographic location and a number of other factors. In this paper, I discuss the types of renewable energy and its impacts on environmental issues. Throughproper understanding of current and potential environmental issues associated with each renewable energy source, we can takenecessary steps to avoid or minimize these impacts as they become a larger portion of our energy supply. Even though renewable energy technologies have some concerning effect on the environment, they are still favorable over fossil fuels that have much more severe impact, making renewable energy sources our best bet towards a better future.

Abstract No. 21

PARASITES OF PUBLIC HEALTH IMPORTANCE

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ABSTRACT

Parasitic infections are distributed virtually throughout the world, with high prevalence rates in many regions. Amoebiasis, ascariasis, hookworm infection and trichuriasis are among the ten most common infections in the world. Other parasitic infections such as abdominal angiostrongyliasis, intestinal capillariasis, and strongyloidiasis are of local or regional public health concern. The prevention and control of these infections are now more feasible than ever before owing to the discovery of safe and efficacious drugs, the improvement and simplification of some diagnostic procedures, and advances in parasite population biology.

Abstract No. 22

AN INTRODUCTION TO THE WEEDS OF AGRICULTURAL LANDS WITH A FLASH ON INVASIVE ALIEN SPECIES IN LUCKNOW DISTRICT OF UTTAR PRADESH, INDIA

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ABSTRACT

India is a country of South Asia. It is seventh largest country by area, the second-most populous country and the most populous democracy in the world. Uttar Pradesh, the 4th largest state in the country covers an area of 2,40,928 sq. km.Lucknow, the capital city of Uttar Pradesh extending over an area of 2528 sq. km, encompasses the a total of only 4.66 percent of forest coverwhich is much less than the state average of around 7 percent. The main crops are wheat, paddy, sugarcane, mustard and vegetables such as cauliflower, cabbage, tomato, potatoes and brinjals. Similarly, sunflowers, roses, and marigolds are cultivated over a fairly extensive area. Many medicinal and herbal plants are also grown here. In last two decades there has been rapid spread of weeds that causes serious threats to the agricultural crops and compete with them for their existence. Weeds spread in the agriculture lands rapidly and pose a significant threat to ecosystem worldwide due to their high adaptability, tolerance and competitive success rate to adverse environmental conditions. In this study more than 200 plant specimens were collected out of which,103 were identified and documentedas weeds, majority of them belong to the families Asteraceae, Fabaceae, Euphorbiaceae and Cucurbitaceae. It was also observed that among them, 73 species were of invasive alien plants. For authenticating the work secondary data along withthe study of a large number of herbarium specimens at LWG and BSAwas done. This study will be very useful for weed scientists, agricultural professionals, farmers and in turn to mankind.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 23

IMPACT OF POLLUTION ON THE LIVES OF KANPUR PEOPLE: AN EXPLORATORY ANALYSIS ON THE MEASURES TAKEN BY THE GOVERNMENT TO SOLVE THE POLLUTION PROBLEM

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ABSTRACT

One of the largest industrial towns in North India is Kanpur and it is also the largest city of Uttar Pradesh. Prominently, it has leather industries along with various chemical factories. With a high level of industrialization and development in various sectors, the city's pollution is also on a high rise. Today, Kanpur is regarded as one of the most polluted cities of India. The poor air quality of the city has once again put a question mark on the steps taken by the Government to solve the pollution crises. People in Kanpur are choking to death mainly because of the poor quality of air along with other sources of pollution. Specifically, air pollution is leading to various serious health issues in the lives of the people of Kanpur. The main objective of this paper is to know that what are the consequences of pollution in Kanpur and how it is affecting the lives of the people of Kanpur along with analyzing the measures taken by the Government to solve the pollution crises.

Research Objective: To know the impact of pollution on the lives of Kanpur people.
To know the steps taken by Government to solve pollution crises.

Research Methodology:
Data: Secondary Data
Sources of Data: Online news, Journals, Newspapers
Research Design: Exploratory

Abstract No. 24

EFFECT OF POLLUTED MULBERRY LEAVES ON THE SILKWORM(BOMBYX MORI LINN) HEALTH

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ABSTRACT

Sericulture is both an art as well as a science for the production of silk and has been practiced for thousands of years. Silkworm rearing is an agro-based industry with a vast potential for employment generation for both rural as well as urban areas. Although there are several commercial species of silkworm, *Bombyxmori* is the most widely used and intensively studied and practices and techniques' for its rearing are the most developed. The mulberry silkworm is a monophagous insect which feed exclusively on the mulberry (*Morousalva*) leaves for its growth and development. Mulberry leaves quality and quantity has a direct impact on the overall performance of the silkworm such as larval and cocoon weight, amount of silk production, pupation and reproductive performance of the silkworm such as larval and cocoon weight, amount of silk production, pupation and reproductive traits. The efficiency of converting the ingested and digested into body , cocoon and cocoon shell varies with the silkworm breeds under the influence of environment, mulberry varieties and seasons. The road highway dust and polluted mulberry leaves may also affects its performance and making it susceptible to various pathogens. The dust polluted mulberry leaves may also affect the food consumption of the silkworms, hence can drastically af fect its growth and development. Though a lot of studies have been carried out on the effect of highways dust on agricultural and horticulture crops, the studies related to the mulberry and silkworm is very meager. In this regard an effort was made to assess the effect of the highways dust polluted mulberry leaves on the food consumption, assimilation, conversion ef ficiency and growth of the silkworm, *Bombyxmori* Linn.

The present investigation was carried out to ascertain the possible effect of feeding the silkworm. The road highways generate vast amount of dust which got deposited on mulberry leaves. Impact on the silkworm nutritional indices food consumption, assimilation and conversion efficiency of the silkworm larvae got significantly reduced in both the IVth as well as in Vth instar, when they were fed with extreme dust polluted mulberry leaves as compared to these larvae which were fed with low dust polluted mulberry leaves. But the effect was more pronounced in the Vth instar as larvae utilize maximum amount of feed in the Vth instar. The reduced conversion efficiency culminated in the decreased average larval weight and average larval weight gain of silkworm larvae. Various preventive and management strategies are required to formulate which can substantially alleviate the effect of the polluted mulberry leaves on the sericulture so as to ensure to sustainability of this industry for the last few decades in the states.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 25

IMPACTS OF CLIMATE CHANGE AND SOCIO-ECONOMIC SCENARIOS ON WATER RESOURCES IN DEHRADUN DISTRICT, UTTARAKHAND

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ABSTRACT

The potential impacts of climate change and socio-economic scenario on water resources worldwide is a key area of interest. Dehradun is capital of Uttarakhand and it is a rich depository of biodiversity, a natural habitat of species of flowering plants, tree species and species of Medicinal plants. This vast region is important in global atmospheric circulation and is vulnerable due to its unique geology, rich natural resources, and socio-economic milieu. Climate change may cause a significant impact on this region. Water resources in this region are one of the vital inputs for the survival of mankind and rich biodiversity. Climate change can affect significantly in the quantum of flown is the major contributor of the rivers' flow in this region. The serious challenge is related to frequency and magnitude of extreme weather events like rainfall which may lead to flash floods, landslides and debris flow. There will be short- and long-term implications due to climate change in this region. A large knowledge gap exists in the present scenario regarding the climate change implications on water resources and related hazards in the region. Primary data generation and its utilization in developing scenarios taking into account water demand and socio-economic development as a whole are required. Establishment of monitoring system for snow and water and use of latest hydrological model are the keys. Climate change may have a detrimental effect on the present socio-economic structure in the region also. Society will also have to adapt to the stresses of the climate change on the livelihood. Participation of people in their general welfare backed by institutional support and updated knowledge base will be important in the changed climate scenario.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 26

DIVERSITY AND ABUNDANCE OF HUMAN-PATHOGENIC FUNGI IN OPPORTUNISTIC PATIENTS

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ABSTRACT

Pathogenic fungi are a growing health concern worldwide, due to the opportunistic nature. Fungi are everywhere. There are millions of different fungal species on earth. Fungal diseases are often caused by fungi that are common in environment. Mycotic infections have become very frequent in recent years. Normally mycosis occurs in compromised individuals. The aim of the study is to determine the fungal biodiversity causing diseases in patients. In present investigation 111 patients were screened for the presence of the fungal infections and 27 different species of fungi were isolated from various clinical samples.

Abstract No. 27

IMPACT OF POWER IN SUSTAINABLE ECONOMIC GROWTH- KHADI GRAMODYOG

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ABSTRACT

Khadi and Village Industries from a part of rural Industries and are based on socioeconomic and cultural fabric of life. These industries constitute an important segment of the decentralized sector of our economy and provide employment mostly to the weaker of the society of which women constitute a substantial part of the work force. One of the major requirements for sustainable and inclusive economic growth is an extensive and efficient infrastructure network. It is critical for the effective functioning of the economy and industry. The key to global competitiveness of the Indian economy lies in building a high class infrastructure. To accelerate the pace of infrastructure development and reduce the infrastructure deficit, the Government has initiated a host of projects and schemes to upgrade physical infrastructure in all crucial sectors. Despite several challenges, the positive results of the Government's initiative are showing in some sectors. However, required capacity addition in a time-bound manner needs focused attention in other sectors*.

Former President, Abdul Kalam in his 59th Independence Day speech had said "Energy security, which means ensuring that our country can supply lifetime energy to all its citizens; at affordable costs at all times, it thus a very important and significant need and is an essential step forward. But it must be considered as a transition strategy, to enable us to achieve our real goal that is Energy Independence or an economy which will function well with total freedom from oil, gas or coal imports". PLL Cutting energy as our nation's first and highest priority, he had called for determination on to achieve this within the neat 25 years i.e. the year 2030. The present government has set the target to provide affordable, 24x7 power to all households by 2019.

Abstract No. 28

STUDY OF DIFFERENT HOST PLANTS SUITABLE FOR THE GROWTH OF LEUCINODES ORBONALIS GUENEE

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ABSTRACT

The rearing on different host Plants (*Solanum melongena, Solanum indicum, Solanum tuberosum, Lycopersiconesclentum, solanum indicum, Solanum nigrum, Abelmoschusesculentus, cynodonindicum, ocimumbasilicum*) introduced variation in length of larva.

The length of the first instar larva varied from 1.3 to 1.6 m.m. on different host plants. the larva reared on *S. melongena* acquired the maximum length (1.6 m.m.) whereas the same reared on *S.indicum* and *O. basilicum* acquired the minimum length (1.3 mm). The length of second instar larva was maximum (3.4mm) on S. melongena and the minimum (2.8 mm) on *S. indicum*.

The third instar larva acquired the maximum length (6.6 mm) when it was reared on *S. melongena* and minimum length(6.0mm) acquired by larva when reared on *S.indicum*. The fourth instar larva acquired the maximum length (13.6 mm) when reared on S. melongena and minimum on *O.basilicum* (11.9 mm) . The length of fifth instar larva also diffred from plant to plant. The maximum (18.8 mm) and minimum (16.6 mm) length was acquired by the larva of this stage when reared on *S.melongena* and *O.basilicum* respectibely.

The lengths of defferent instar are varied with rearing on different host plants is possibly due to relative more feeding and more utilization of ingested food and the differences are mostly due to varying nutritive values of tested host plants.

Abstract No. 29

SYNTHESIS & SPECTRAL CHARACTERIZATION OF [CUX2L] COMPLEXES (WHERE X = CL-, NO3-, CH3COO-) & L = MACROCYCLIC SCHIFF BASE LIGANDS

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ABSTRACT

Certain new macrocylic complexes were synthesized and their structures were proposed on the basis of elemental analysis, IR, photo-electron spectra. The metal to ligand molar ratio of the Cu (II) complexes were found to be 1:1. The Cu (II) complexes to be non-electrolytes by their molar conductivities value. Their configurations were proposed to be octahedral geometry.

Abstract No. 30

IMPACT OF BIOFUEL PRODUCTION ON BIODIVERSITY

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ABSTRACT

Current demand for biofuels is leading to conversion of natural habitats, on a huge and potentially catastrophic scale. Moreover,it also causes displacement of indigenous and rural communities. The savings in greenhouse gas emissions are generally small, and may be negative, especially when conversion of natural habitats is involved. Because plants convert solar energy into chemical energy stored them in an organisms, biomass production as an energy source can help to reduce the world's reliance on fossil energy and mitigate global warming. Biofuel production is a fast-growing industry that represents a new type of large-scale human disturbance on ecosystems. Thus, the benefits of biofuel production bring environmental risks that include its potential impact on biodiversity. In this context, we should start first with a brief overview of the evolution of biofuel concept; second, we review the state of biofuel production across the continents, with a major emphasis on the main species used and their major feedstock. For which, we found significant differences for land use and environmental cultural management of biofuel plantation between tropical and temperate regions. Third, we must summarize the impacts of biofuel plantation on biodiversity at multiple scales, based on the case studied with respect to the corresponding issues. Biofuel production could also enhance biodiversity by reducing net carbon emissions from fuel burning, slowing the rate of global climate change.Many countries have already mapped areas for potential large-scale biofuel production. However, there are few studies and policies in place to guide this. According to a recent World Bank review, the potential environmental benefits of biofuels including their impacts on biodiversity, air, water and soil qualities cannot be generalized and need to be assessed on a case-by-case basis, evaluating cropping and land use patterns as well as the type of crop used for biofuel production.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 31

VERMICOMPOSTING AND ACCUMULATION OF HEAVY METALS

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ABSTRACT

Heavy metals are release in environment by volcanic activity , erosion of rocks, forest fire, human activity , paper mills and wastes products of various industries. Abundant use of chemical fertilizers and pesticides in agricultural field also increase the heavy metals in environment. These heavy metals caused ill ef fects on different flora and fauna as well as on human health.

Generally human body is exposed to heavy metals by breathing, drinking and eating polluted air, water and food, which lead to accumulation of heavy metals in vital organs such as brain and kidney. Continuous accumulation of lead leads to death of affected person. In pregnant women accumulation of the lead may caused miscarriage. Sperm production in male human being is also reduced by lead exposure. Cadmium and Nickel accumulation in body is encountered in the workers of industries of pigment, metal plating, plastic and batteries. These heavy metals entered in the human body by ingestion of contaminated food stuffs specially grains, cereals and leafy vegetables. These metals caused respiratory irritation lung diseases, cancers and kidney problem. Accumulation of chromium in human body breathing problems such as asthma, cough and wheezing. Even skin contact may resulted skin ulcers. Chronic exposure can damage liver, kidney, blood cells and nerve tissues. Oral intake if cobalt caused hypercholesterolemia in human beings. Arsenic acts as carcinogens may cause cancer of skin, lungs, liver and bone marrows.

In a food chain of active ecosystem there is continuous accumulation of in successive trophic levels. This phenomenon is called biological magnification or biological amplification. Generally different heavy metals like arsenic (As), barium (Ba), cadmium (Cd), chromium (Cr), lead (Pb), mercury (Hg), selenium (Se) and silver (Ag) may be accumulated in human body of various routes and cause of different hazards. Complete removal of these heavy metals in the contaminated environment is difficult task. The earthworm Eisenia fetida play very important role in reducing the heavy metals accumulation in foodstuffs. The worms have ability to accumulate the various heavy metals viz Pb, Ni, Hg and Cd in their body. They can accumulate the metals and by transferring the heavy metals from the soil in their body so that it will be reduced the movement of hazardous metals in crops and vegetables. This remediation of soil will produced good quality consumable agricultural products.

Abstract No. 32

COLD, LIGHT AND CLOCK IN PLANTS FOR CROP IMPROVEMENT

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ABSTRACT

Low temperature adversely affects crop yield,growth and productivity. Most temperate plants have the potential to increase their freezing tolerance upon exposure to low but nonfreezing temperature - cold acclimatization. Light is also required for cold related genes. The circadian clock and cold acclimation are intimately linked in plants: Cold affects the expression of clock genes, regulates the cold response pathway, and many genes are regulated by both. Researches revealed that interactions between cold and circadian regulation are major factors in shaping the cold-responsive transcriptome and thus will be an important consideration to dissect transcriptional regulatory networks controlling cold acclimation. It showed differential effects of cold on circadian output genes and a unique regulation of an oscillator component, suggesting that cold treatment could also be an important tool to probe circadian regulatory mechanisms Understanding of plant circadian rhythm may result in the optimization of agriculturally important traits, making this aspect of plant biology of significant future interest to scientific and commercial enterprise The circadian rhythm increases the fitness of the plant at a number of levels and agronomic traits associated with clock genes, there is a significant interest in understanding and optimizing circadian network in crop species. The overall architecture of the oscillator is conserved in Arabidopsis and crop plants. A number of circadian clock genes underlie QTLs associated with key agronomic traits, indicating that the circadian related fitness advantages conferred to Arabidopsis by circadian regulation may also be relevant to crops, flowering time being the one of the obvious trait.The study aims in understanding how clock genes respond to flowering under cold conditions in mungbean. Mungbean undergoes a potential yield loss during Rabi cultivation, especially due to flower dropoff. This can be addressed by screening mungbean germplasms to identify cold tolerant germplasm. Further identify its response of clock genes to flowering under cold conditions. This in turn can give rise to year round crop yield, ensuring proteinecious diet and food safety to nation.

Therefore, studying the underlying mechanisms in crop plants may lay the foundation for precision agriculture in future.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 33

MORPHO-TAXONOMIC DIVERSITY OF SOME COMMON GRASSES OF VINDHYAN REGION (UTTAR PRADESH), INDIA

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ABSTRACT

Biological diversity is the key to adopting to global change. If we are to adapt food production system (for which members of Grasses are very much exploited) to radically changing conditions in the coming decades, plants and animal diversity will be the single most critical resource for doing so. Correct taxonomic identification and description of species occurring in particular area is essential for the conservation of biodiversity and for estimating how many species there are left to be discovered. It is commonly agreed that at current rate of extinction many species will die out before they are described scientifically. This will result in to hampering the biodiversity conservation policy. Present study contributes morpho-taxonomic diversity of twenty two grasses collected from Vindhyan Region of Uttar Pradesh, India, belonging to ten genera and six tribes, viz. *Apludamutica L., Arundodonax L., Aristidaadscensionis L., A. funiculateTrin. &Rupr.,A. hystrixL.f., Arthraxonlancifolius (Trin.) Hochst.,Avenasativa L., Axonopuscompressus (Sw.) P. Beauv, Bothriochloapertusa (L.) A. Camus, Brachiariadeflexa (Schumach.) C. E. Hubb&Robyns, B. distachya (L.) Staf, B. eruciformis (Sm.) Griseb.,B. milliformis (J, Presl) Chase, B. mutica (Forssk.) Stapf, B. ramose (L.) Stapf, B. reptans (L.) C. A. Gardner & C. E. Hubb., B.subquadripara (Trin.) Hitch.,CenchrusbiflorusRoxb., C. ciliaris L. Chloris barbata Sw., C.dolichostachya Lag., and C. virgata* Sw. Tribe Andrpogoneae and Paniceae represented by three genera each and the remaining four genera belong to four different tribes i.e. Arundineae (*Arundo L.*), Aristideae (*Aristida L.*), Aveneae (*Avena L.*) and Cynodonteae (*Chloris L.*). Reported taxa are illustrated in detail along with taxonomic keys at different levels.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 34

MANAGEMENT OF ALTERNARIATAGETICA CAUSING LEAF SPOT AND FLOWER BLIGHT OF MARIGOLD (TAGETESERECTA L.) IN GURUGRAM DISTRICT, HARYANA

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ABSTRACT

Marigold (*Tagetes* spp. Linn) is one of the most important commonly grown ornamental and commercial crops in India. Leaf spot and flower blight caused by fungus, *Alternariatagetica* (Shome and Mustafee) is one of the important foliar disease of marigold,specially on African marigold (*Tageteserecta*) which causes up to 60% losses in yield. The disease is characterized by circular dark brown necrotic spots on leaves, stem and flowers.

In the present investigation, different management practices were evaluated under field conditions. The results revealed that soil/nursery bed treatment with Captan @2.5 kg/ha.and 2 spray of copper oxychloride 50wp @ 3g/liter was found effective in reducing the number of disease infected plants(2/10 sq.m. area)as compared to the control plots in which disease infected plants observed 14/10 sq.m/ area. The healthy plants produced quality flowers @ 165.80 q/ha followed by 156.98 q/ha with 2 sprays of Diathane (M-45) @ 2 gm/liter of water whereas the control was found to be lowest yield of 152.62 q/ha.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 35

INDUSTRIAL WASTE GENERATION – A CAUSE OF ECOLOGICAL IMBALANCE AND HEALTH CONCERNS

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ABSTRACT

We live in the world which is more demanding and challenging that before in terms of maintaining high level of economic growth and development and thereby compete with other fast emerging economies. The pressure is more on India as expectations raised high on it because of being an important constituent of BRICS nations and also having many positives in terms of fastest growing economies, being young nations and tackling effectively in terms of ease of doing business and many others. With the need of attaining continuous economic advancement there has been tremendous growth in all sectors thereby emitting huge industrial wastes of all sorts comprising of municipal solid wastes, biodegradable wastes, industrial wastes, hazardous and electronic wastes to name a few. The problem is that on one side because of lack of proper facilities regarding proper disposal of wastes generated through various means, on the other side exists lack of awareness among people regarding the ill effects of this huge decomposed waste on the society in terms of health related issues and on environment in terms of air and water quality degradation and fast climatic changes that occur because of these untreated wastes creating ecological imbalances as well. In this background, the paper tries to analyse the magnitude of harm the solid untreated waste pose before the environment and suggest remedial measures to overcome this huge challenge in terms of protecting environment, maintaining ecology balance, take care of health related issues faced by mankind and thereby make earth a better and happier place to live with all enjoying healthier life. The paper is based on secondary source of information collected from authenticated websites, magazines, research articles, news and journals. The limitation of the paper depends upon the quality, reliability and accuracy of data obtained from various data sources; however efforts have been made to make use of only authentic source of information to the maximum possible extent.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 36

COMBINATIONS OF WASTES: BIOTECHNOLOGICAL TOOL FOR POPULATION GROWTH OF EARTHWORM EISENIA FETIDA

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ABSTRACT

Chemical fertilizers and synthetic pesticides are serious threats to human, animal health and environment. Animal dung and municipal solid wastes are caused various problems, if they are not properly managed. Vermicomposting of these wastes is a suitable solution for proper management of biological wastes. The combinations of different animal dung with municipal solid wastes significantly enhance the population of *Eisenia fetida*. Combination of buffalo dung with municipal solid wastes (1:1 ratio) significantly increase the growth, development, and reproductive capacity of *E. fetida*. Significant decrease in pH, Electric conductivity, C: N ratio was noted in the final vermicompost whereas, increased total Kjeldhal nitrogen (TKN), total available phosphorus level (TAP), total potassium and calcium ultimately affects the growth of earthworm *Eisenia fetida* population. Use of buffalo dung with sewage sludge is suitable combination for better growth, reproduction and development of *Eisenia fetida*. The significant increase in number of earthworms with the help of combination of wastes as feed material, will be helpful for more conversion of more municipal solid wastes in beneficial vermicompost.

Abstract No. 37

EFFECT OF SOIL POLLUTANTS ON THE DIVERSITY OF EARTHWORMS IN EASTERN UTTAR PRADESH

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ABSTRACT

Indiscriminate use of chemical fertilizers and pesticides disturbs the soil texture and physico-chemical properties of agricultural fields. The use of agrochemical viz. pesticides, herbicides, fungicides, nematicides, bactericide, weedicides and fertilizers had posed a serious threat to the environment which ultimately destroy the beneficial microorganisms, insects and worms in soil. Various heavy metals were also added in the agriculture field with these agrochemicals. Earthworms are the major macrofauna in the soil community. Earthworm can be used as bio-indicators for the monitoring of ecosystem state and changes. Due to the resent agricultural practices and soil contamination as well as disturbed soil physico-chemical texture, the earthworm population decreased. Earthworms play an important role in stabilization of inorganic plant nutrients to organic form and increased the soil fertility. The worms added their cast with compost and increased the inorganic nutrients many times along with some plant growth hormones and vitamins. The earthworms occur in large numbers and have wide distribution pattern with less mobile habit. The earthworms require carbon and nitrogen for their growth and reproduction. Food quality influences not only the size of the earthworm populations but also their growth and reproduction rates and hence determines their distribution trends in an ecosystem. Similarly, distribution of earthworms also depends on physical conditions including water content and availability of or ganic matter in the soils. Soil moisture, pH, or ganic carbon and organic nitrogen also play important role in the distribution of earthworms. The aim of present study, to investigate the impact of the pollutants on earthworms diversity and physico-chemical properties of a soil in eastern Uttar Pradesh.

Abstract No. 38

PLASTIC POLLUTION

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ABSTRACT

Plastic is inexpensive and durable. This is the main cause which led it to enter every aspect of our life. We are today using plastic as water bottles, lunch boxes, buckets, storage boxes, toys, pen and many more. But the chemical structure of plastic is complex which renders them resistant to many natural process of degradation.

Approx 1.1 to 8.8 million Metric Tons of plastic enters the ocean every year. One should not be surprised that by 2050 there will be more plastic in Ocean than fish by weight.

Plastic in Ocean badly affects marine animals by mechanically harming them, by ingestion or through exposure to hazardous chemicals.

We will have to look for other promising substitutes for plastic and create awareness among people for at least reducing the use of plastic.

Abstract No. 39

ENVIRONMENT PROTECTION LAWS IN INDIA: IMPLEMENTATION AND LOOPHOLES

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ABSTRACT

Today, the conservation, protection and improvement of human environment are major issues all over the world. Human environment consists of both physical environment and biological environment. Physical environment covers land, water and air whereas biological environment includes plants, animals and other organisms. Both physical and biological environment are inter–dependent. Industrialisation, urbanisation, explosion of population, over–exploitation of resources, disruption of natural ecological balances, destruction of a multitude of animal and plant species for economic reasons are the factors which have contributed to environmental deterioration. There is no dearth of legislations on environmental protection in India but their enforcement has been far from satisfactory. There is need for the effective and efficient enforcement of the Constitutional mandate and other environmental legislations. The creative role of judiciary has been significant and laudable. Pursuant to the Constitutional provisions contained in different articles, many Public Interest Litigations have been instituted in the Supreme Court of India against many industries for failing to provide adequate pollution control and, also against Pollution Control Boards to direct them to take appropriate measures to ensure pollution control. For the purpose of efficient and effective enforcement of these lays, it is necessary to set up an Adjucatory Body which should consist of legal as well as technical experts. Caring for regulating and protecting the environment is essentially a desire to see that national development should proceed along the rational sustainable laws. It is with this background in mind, the present paper attempts to discuss different laws for protection of environment and the problems being faced in their implementation.

Abstract No. 40

EFFECT OF CLIMATIC CHANGES ON INFECTION OF FASCIOLIASIS AMONG CATTLE AND HUMAN

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ABSTRACT

Fascioliasis is caused by the two parasitic trematodes such as *Fasciola* hepatica and *F. gigantica*, which mainly affect the liver among sheep, cattle and human population. These parasitic trematodes are leaf-shaped worms. In cattle and human *fascioliasis* is food-borne trematode infection which commonly acquired by the eating encysted metacercaria larval on aquatic leaves which eaten directly or indirectly as vegetables or contaminated water. These infection are very common zoonoses disease, which affecting a large number of worldwide population. Lymnaeidae group of fresh water pond snail is intermediate host of the *fascioliasis*. Climate has an impact role on the free-living stages of the parasite and its intermediate host ofLymnaeidae, with the interactions between rainfall water logging and temperature having the greatest influence on transmission efficacy. The effects of climate change on trematodiases in general is reviewed which including aspects such as influence of temperature on cercarial output, cercarial production variability in trematode species, influences of magnitude of cercarial production and snail host, cercarial quality, duration of cercarial production increase and host mortality, influence of latitude, and globalwarming induced impact of trematodes. The climatic change influences the characteristics of these trematodiases in concrete areas where these diseases are emerging. Although, fascioliasis infection among cattle and human population also affected by the climate change. Therefore, fascioliasis can be control along with climatic changes by the use of antihelices plant products along with suitable time period.

Abstract No. 41

DIVERSITY OF CYANOPROKARYOTES AND ALGAE FROM AERO-TERRESTRIAL BIOFILMS ON ROXBURGH BUILDING OF ACHARYA JAGADISH CHANDRA BOSE INDIAN BOTANIC GARDEN, HOWRAH

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ABSTRACT

Roxburgh Building in Acharya Jagadish Chandra Bose Indian Botanic Garden (AJCBIBG), Howrah is more than 200 years old. Dr. William Roxburgh, an important botanist, is a significant figure for the natural history of both Britain and India. Dr. William Roxburgh was appointed as first salaried superintendent of the Garden in 1793. He laid the foundation of modern plant taxonomy (post Linnean) in India by establishing a large Herbarium (the present day Central National Herbarium CAL) during his tenure (1793 - 1814). Cyanoprokaryotes and algae develop on the building surfaces which may form more complex consortia i.e. biofilms. The colonisation of structures by such organisms is in opposition with the human efforts to maintain structures free of damage, either from the constructional or aesthetic point of view. The investigations of the microorganisms on the surface of Roxburgh Building have shown that microorganisms thrive, particularly Cyanoprokaryotes, Algae, etc. that form biofilms and crusts on the surfaces. During study altogether 16 species of different classes of cyanoprokaryotes and algae viz. Cyanoprokaryota/Cyanobacteria, Ulvophyceae, Conjugatophyceae, Phaeothamniophyceae and Bacillariophyceae have been recorded. Out of sixteen species of cyanoprokaryotes and algae, 02 species of cyanoprokaryotes have been reported as new to the science of India. This is a first study report of diversity of cyanoprokaryotes and algae from Roxburgh Building of AJCBIBG.

Abstract No. 42

THE EFFECT OF TILAPIA FISH INVASION ON NATIVE FISH FAUNA OF RIVER YAMUNA AT MATHURA DISTRICT, UTTAR PRADESH, INDIA.

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ABSTRACT

Yamuna River supports a rich diversity of fishes of commercial value. But over the years the rivers has become highly polluted. The river water is extensively used for irrigation and receives heavy load of domestic and industrial wastes. All these factors have imparted the fisheries in the river as reflected by decline in fish catch a discernible shift in fish species composition and an increase presence of invasive fish species. Domestic pollutions, Industrial pollutions, Agricultural pollutions and sand mining are the main responsible source in declining the native fauna and making the favorable ground for invaders.

Human activities have wiped out the native fish species of the Yamuna and alien fish species are now dominating the entire stretch of the river and affecting the catch composition of other fish. The deliberate or accidental introduction of the alien species was identified as a key component of the human induced biodiversity crisis that is harming native species and disturbing the ecosystem processes.

Of the total of 20 recorded species, 16 were identified as local and 4 as alien invasive species in the River Yamuna at Mathura, U.P. Tilapia, *Oreochromisniloticus* (Linnaeus) a non-native fish species in the Indiais one of the invasive fish species reported in river Yamuna throughout the year. A perusal of the present data showed that *Oreochromisniloticus* formed the most dominant fish species in all the catches from the Yamuna River at Mathura.

The invasion of Oreochromisniloticus has increasingly taken-over in Yamuna River at Mathura dist. contributing substantially to the fishery of this river, which is considered serious in view of sustainability of indigenous(native) fish diversity. Further investigations should be carried out to deter-mine the extent of spread of *Oreochromisniloticus* in Yamuna River and to understand its impact on native fish and fisheries.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 43

EFFECT OF PHYTOHORMONES SPRAYED TO 55 AND 70 DAYS ON FATTY ACID COMPOSITION OF SUNFLOWER OIL

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ABSTRACT

The experimental was conducted in the plant physiology lab of Botany Department, Hindu College, Moradabad and College of Basic Science, G.B. Pantnagar University, Pantnagar, Uttrakhand (U.A.). Foliar application of all the phytohormones showed on significant effect on the fatty acid composition i.e. palmitate, oleate and linoleate on both 55th and 70th days. Foliar application of cycocel at lower concentrations did not show any significant effect on palmitate, oleate and linoleate percentage while higher concentration (200 to 800 mg/l) show a significant increment ($p<0.05$). Foliar application GA3 decreased the palmitate and linoleate percentage compared to control (9.67%) at lower concentration in palmitated (10.22%), oleate (59.36%). Ethephon at all concentrations significantly ($0<0.05$) increased the linolate percentage in seeds of 70th days plants. Maximum linolated percentage (45.38 and 43.95) was recorded in 400 and 800ml/l of ethephon.

Abstract No. 44

FEEDING ECOLOGY OF BIRDS IN TEMPERATE AND SUBTROPICAL FOREST OF PIR PANCHAL RANGE OF MIDDLE HIMALAYAN CHAIN OF DODA, J&K

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ABSTRACT

Birds as one of the significant fauna which are directly or indirectly related with the human beings. Therefore avian diversity and its conservation is regarded as one of the major issue to enable sustainable use of natural resources. It is necessary and need of the hour to conserve the avian diversity in their natural habitat. The present paper deals with the survey and feeding guilds and feeding substrate preference of birds carried out in temperate and sub tropicalforestin Pir Panchal range of Middle Himalayan chain of North West Himalayas of erstwhile District Doda. The study area lies between 32^{O}- 53" and 34^{O}-21" North Latitude and 750-1" and 76^{O}-47" East Longitude with an elevation ranging between 700m to 4500m and with varied climatic conditions. The present study documents71 species of birds, out of 71 reported species 26 species insectivores, 17 species were omnivores, 4 species were grainivores and frugivores each, 12 species were carnivores and 7 species share more than one feeding guilds.

Abstract No. 45

MORPHOLOGICALANDMOLECULAR DIVERSITY ASSESSMENTOF A COLLECTION OF PUMPKIN LANDRACES FROM GARO HILLS REGION OF MEGHALAYA

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ABSTRACT

In this present work, the indigenous landraces of pumpkin from Garo Hills region of Meghalaya was assessed using the morphological and molecular data. A molecular analysis using Simple Sequence repeat DNA (SSR) markers was performed, revealing high level of polymorphism. The allelic frequency was ranged from 0.30 (OCM2) to 0.83 (OCM9).The highest PIC value of SSR markers was observed for OCM2 (0.91). Dendrogramso btained from divergence analysis and molecular data classified the pumpkin landraces into 3 and 4 main clusters, respectively.Maximum and minimum inter-cluster average D2values obtained were 398.37 and 67.46 respectively. Considering the average D2 distances, it was found that the landraces of cluster I and IIIwould expected to exhibit high heterosis and produce new recombinants in inter-cluster crosses. Grouping of the pumpkin landraces based on uniqueness for desirable traits will help to select the superiorparents in hybridization programme. The most divergent landraces obtained (GHP1 and GHP28) from this study can be effectively utilized in future pumpkin breeding programme for crop improvement. High degree of correlation was found between diversity obtained by morphological and molecular traits.The same results were also obtained using Principal Component Analysis.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 46

ECOFRIENDLY MANAGEMENT OF *SPODOPTERALITURA* [FAB.] IN CAULIFLOWER CROP BRASSICA OLERACEA BOTRYTIS L. AT FIELD LEVEL IN GURUGRAM DISTRICT OF HARYANA

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ABSTRACT

Tobaccocater pillar, *Spodopteraliturais* a polyphagous and major pest of cauliflower and other cole crops in Gurugram district of Haryana. In an outbreak phase, this insect can completely defoliate large area of crops causing reduction in yield from 18 to 75% more. Indiscriminate and overuse of synthetic organic insecticides to control this pest resulted in the development of resistance against insecticides of different groups. Average pesticides uses has been estimated at 2.77 Kg active ingredient per hectare on cauliflower. As an alternative to chemical control, an attempt has been made in the present study towards safe and cost effective management of this major pest of cauliflower. The performance of biopesticide SlNPV @1ml/L was highly effective in reduction of larval population of S.litura85.68% as compare to control in which 18.02% was recorded while Beauveriabassiana1g/Lwas second promising treatment where 80.44% reduction in larval population was encountered. So, it is recommended as an alternative to chemical control and farmers need to be imparted about integration of different non chemical control methodsin form of IPM packages and should be encouraged to adopt ecofriendly management of this pest.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 47

AIR POLLUTION LEVEL IN LUCKNOW AFTER DIWALI

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ABSTRACT

In this decade of 2020, Lucknow the capital city, Uttar Pradesh has reached among the most polluted cities in the country. Every year the air pollution level just doubles around the Diwali due to burning of firecrackers. There are other reasons too which add to this increased level of air pollution during this season. One reason for pollution is the moisture in the weather with mild low temperature. This reduces the availability of the free air. The dust and pollution are not able to spread due to lower temperature. The result is that the smog increases. According to a study conducted by the Indian Institute of Toxicology and Research (IITR) in Lucknow, the researchers have concluded that the reasons for pollution are already present. On normal days, they spread, we don't feel the level of pollution. According to a study conducted by the IIT Kanpur before Diwali, the main cause of the air pollution in the capital was the dust blowing from the roads and construction activities. Vehicular pollution is about 7 percent and burning of garbage contributes to around 2.1 percent. Level of pollution in the air is represented by Air Quality Index (AQI) which measured and published by the Central Pollution Control Board (CPCB) through a network its stations and state boards spread in the cities across the country. CPCB calculates the AQI for five major air pollutants: ground-level ozone, particulate matter, carbon monoxide, sulfur dioxide, and nitrogen dioxide.

Due to the awareness and strictness, this year, less firecrackers were burnt so after the Diwali, there was a significant decline in the level of air pollution in Lucknow, yet it is far from being fit to breath. The measures that we are adopting to contain the pollution, although may be tenable, but are not sustainable in the long term. So the society and the people should realize the threat and develop a habit and adopt a culture that add least pollutant to the air to make it sustainable. The measures may include, but not limited to using public transport, ecofriendly construction and mindful disposal of wastes and garbage.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 48

IMPACT OF ENVIRONMENT AND GENETIC DISORDERS DURING EMBRYONIC DEVELOPMENT

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ABSTRACT

Genetics is one of the challenging fields in medicine for the clinicians as well as the scientist for the treatment of genetic disorders. The genetic disorders are highly complex because of the interactions between the environment and genes during ontogenetic development of the fetus leading to "birth defects". Stem cell is one of the promising area in the field of biotechnology for the management of various disorders like neural tube defects and chronic wounds. Stem cells have three distinct characteristics: self-renewal, ability to proliferate extensively and ability to transform in to multiple cell lineages i.e. ectoderm, mesoderm and endoderm. During embryogenesis, large numbers of extrinsic & intrinsic factors are responsible to maintain the normal physiology of stem cells and later these factors have been characterized as Oct 4, Nanog 3 & Sox 2. Interestingly , if mutation occurs in these genes, self-renewal defects arises in combination with ability to transform in to multiple cell lineages which seems to develop large number of anomalies such anorectal malformations, congenital anomalies of central nervous system (i.e. neural tube defects), infertility, chronic wounds and cancer. Epidemiological studies reveal that genetic and epigenetic factors (nutritional status) are responsible for the function of stem cell. The etiopathology of such diseases are highly complex. The curiosity has been developed to characterize / identify stem cell markers (Oct 4, Nanog 3 & Sox 2) in preclinical diagnosed patients and their correlation has been made with MTHFR gene (epigenetic factor) polymorphism to determine the risk factor. These factors have been characterized by specific forward/reverse primers of stem cell using RT- PCR analysis along with MTHFR as epigenetic marker. The study further extends to evaluate mutational analysis by Sanger's method for nucleotide sequencing to identify novel mutations. Interestingly, the findings are characterized in two ways: 1) the regulation of (up & down) of Oct 4, Nanog 3 & Sox 2; and 2) complete disappearance (null) of these bands. The most interesting findings are significant down-regulation and complete absence (null mutation) of Oct 4 band (577 bp) in cancers of Pancreas and in case of Anorectal Malformations as compared with respective controls. Furthermore, in case of anencephaly, Oct 4 expression increases 2 folds. DNA sequencing analysis reveled novel frame shift mutation of a base pair at position 183 C →T in an isoforms of Oct 4. However, other stem cell markers like Sox 2 and Nanog 3 showed differential expression in different clinical cases. Furthermore, the epigenetic marker MTHFR showed significant differences in heterozygous conditions in a variety of clinical conditions such as cancer, infertility and neural tube defects. Taken together these findings suggest a role of mutations of stem cells along with epigenetic factors is responsible for the abnormal differentiation which leads to further anomalous development in human. The study also highlights the role of Oct4 and their isoforms as a major player in maintenance of pluripotency. In conclusion, role of stem cells play a significant role in clinical conditions and a source of regenerative medicine for the management of birth defects and various genetic disorders. However, the recent advancement of technology will lead to development of new diagnostic tools as endeavor by innovation of iP cells and may help for future well being.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 49

CELLULAR SENSITIVITY TO RADIATION BY THE WAY OF IONIZATION OF ATOMS

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ABSTRACT

Living cells can be classified according to their rate of reproduction, which also indicates their relative sensitivity to radiation. Not all living cells are equally sensitive to radiation. Those cells which are actively reproducing are more sensitive than those which are not. This is because dividing cells require correct DNA information in order for the cell's offspring to survive. A direct interaction of radiation with an active cell could result in the death or mutation of the cell, whereas a direct interaction with the DNA of a dormant cell would have less of an ef fect. This means that different cell systems have different sensitivities. Lymphocytes and cells which produce blood are constantly regenerating, and are, therefore, the most sensitive. Reproductive and gastrointestinal cells are not regenerating as quickly and are less sensitive. The nerve and muscle cells are the slowest to regenerate and are the least sensitive cells. Although effect of radiation on living cells, in actuality, ionizing radiation, by definition, interacts only with atoms by a process called ionization.

Abstract No. 50

ASSESSMENT (SAPROBIC INDEX, B-IBI AND EPT%) OF RIVER NARMADA IN JABALPUR REGION WITH SPECIAL REFERENCE TO BENTHIC MACROINVERTEBRATES

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ABSTRACT

Water pollution is essentially a biological problem. Physical, chemical and biological parameters indicate the health of river. The present research has been focused on monitoring of Narmada river in Jabalpur region. The study was conducted on three sampling sites in Jabalpur region: Bargi Dam, Gwarighat and Bhedaghat. In the present study many of the physico-chemical parameters were above permissible limit in Gwarighatwhich shown higher pollution level, while in other two sites it was under safe limit. Water Quality Index was also calculated which was decreased in 2ndyear water sample. That may be due to start of "Clean Narmada Abhiyan" in Madhya Pradesh and "Swachchhta Abhiyan" throughout the India. In biological sampling, total 758 individuals of 55 families belong to 18 Orders of 4 Phylum were recorded. Further abundance status of identified families was categorized under four categories, very rare, rare, common and very common and those were 20%, 20%, 47% and 13% respectively. These benthic macroinvertebrates indicated pollution status of river for which 4 biotic indices were used to evaluate water quality via benthic macro-invertebrates in order to determine health of river Narmada. The saprobic index, B-IBI and EPT% revealed the fair water quality while Hilsenhoff biotic index revealed very poor to good biological condition of water, in all the study sites, slightly divergent from least disturbed condition.The overall water quality at most of the sites studied was within the safe limit except for a few and that too in one index. The systematic calculation of correlation between various physicochemical parameters and biological parameters facilitated to compare the water quality level at different locations and to suggest priority for the required treatment to a particular location.

Abstract No. 51

ANTI-PREDATOR RESPONSES IN RIVER LAPWING VANELLUS DUVAUCELII (LESSON, 1826)

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ABSTRACT

Waders exhibit various forms of anti-predator behaviours to avoid reproductive failure, with mobbing—observation, approach and usually harassment of a predator—being one of the most commonly observed. The anti-predator responses were observed in river lapwing while nesting in groups from January 2016 to June 2018 along the river Ganges in Raebareli district. During the incubation stage one parent, presumably the male, spent most of its time guarding the territory, while the other parent, presumably the female, spent most of her time attending the nest. The guarding male's behaviour included alarm calls, stretching his body upwards while raising his crown, lowering its body into a horizontal position, or repeated "kneeling" and standing up were recorded. Both parents defended the territory when potential predators approached too closely, although females seemed to spend less time guarding the territory than males. Despite the avian predator, the results showed that mammalian predators (dogs and foxes) were other predators of nests of river lapwings. Moreover, predation of nests was also observed due to unknown predators.

Abstract No. 52

EFFECTS OF LARGE DOSES INTAKE OF ASCORBIC ACID ON BLOOD GLUCOSE LEVEL & OXYTOCIN IN FEMALE RATTUS RATTUS

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ABSTRACT

Blood glucose level in the group of *Rattus rattus* fed with large dose 100mg/100gm body weight of ascorbic acid (Vitamin C) showed an decreasing trend till the last 60th days. On 60th day the drop of Blood glucose level is 18% significantly. In lactating *Rattus rattus* oxytocin concentration significantly increases during suckling period. Large doses intake of ascorbic acid also elevate the OT level remarkably.

Abstract No. 53

EFFECT OF ALLELOPATHY WITH REFERENCES TO AGRICULTURAL PEST MANAGEMENT

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ABSTRACT

The word allelopathy is derived from the two Greek words: 'allelon', meaning 'of each other', and 'pathos', meaning 'to suffer'. Allelopathy involves in the synthesis of plant bioactive compounds which are known as allelochemicals.These are capable for acting as natural pesticides and can resolve problems such as resistance development in pest biotypes, health defects, soil and environmental pollution which caused by the indiscriminate use of synthetic agrochemicals. Allelopathy is an important naturally occurring ecological phenomenon which directly or indirectly interference among the plant biodiversity, it may be employed for managing insect pests, weeds and different diseases in the field crops. In field crops or field biodiversity, allelopathy can be used following rotation such as using the cover crops, mulching and plant extracts for natural pest management. Allelopathic have an important application for preparations of plant extracts which can effectively control the different weeds and insect pests, their managements. Therefore, the mixtures of allelopathic water extracts are more effective than the single plant extract in this regard. However, combined application of allelopathic extract and reduced herbicide dose give as much weed control as the standard herbicide dose against several field crops. Therefore, lower doses of herbicides may help to reduce the development of herbicide resistance in weed ecotypes. The use of allelopathy thus offers an attractive environmentally friendly alternative to agricultural pest management.

Abstract No. 54

FLORISTIC DIVERSITY AND VEGETATION TYPES OF ACHANAKMAR-AMARKANTAK BIOSPHERE RESERVE, CENTRAL INDIA

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ABSTRACT

Vegetation of the Achanakmar-Amarkantak Biosphere Reserve (AABR) represents tropical mixed deciduous, tropical moist deciduous, and dry scrub and thorn forest, ravines, grasslands and aquatic types. The collections from the area and their subsequent critical study have resulted in the documentation of 1011 species, distributed under 571 genera and 134 families of flowering plants. Out of these, 754 species under 432 genera and 104 families belong to dicots and the remaining 256 species under 139 genera and 30 families to monocots. Further analysis of data indicated that the family Poaceae is the most diverse and is represented by 112 species, followed by Fabaceae with 76 spp., Asteraceae with 72 spp., Cyperaceae with 40 spp., Acanthaceae with 36 spp. etc., At generic level, the genus *Cyperus* comprised maximum number of 15 species, followed by Ficus with 12 spp., *Crotalaria* with 12 spp., Ipomoea with 11 spp., *Cassia* with 11 spp., etc. A large number of species growing in this area are of medicinal and economic value and used by local inhabitants. The floristic diversity of the AABR has been analysed for the first time. A brief account of area, climatic conditions, vegetation types, medicinal and economic plants, analysis of flora and causes of threat to the flora are discussed.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 55

AGRICULTURE MANAGEMENT: THE NEED OF PRESENT ERA

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ABSTRACT

Why agriculture management is the need of present Era? World population as reported in June2018, is a staggering 7.6 Billion. It is estimated that this number will be rise 8.5 Billion by 2030. So that we must need of agriculture management for large population.

The straight meaning of management in any field is minimum input and maximum output farm, management, making and implementing of the decisions involved. In organizing and operating a farm for maximum production and profit. Farm management dramas on agricultural economics for information on prices, markets, agricultural policy and economic institution. It also draws on plants and animals sciences for information on soils seed and fertilizer, on control of seeds, insects and Diseases and onrations and breeding. On agricultural engineering for information on building, machinery irrigation crop drying, and drainage and erosion control system.

The government policy to increase the income of a farmer is also positive .There is insurance for crops which provides security from level include.

1. Water management in relation to crop moisture requirements.
2. Tillage and land preparation.
3. Tillage and land pre parathion.
4. Living or acidity control.
5. Fertilizeruse.
6. Protection.
7. Cultivation method.
8. Land management.

If manage everything related to above mentioned repeat at farm level property we undoubtedly get maximum production of food grains or related things. At present the importance of agriculture management has become need of the hour. Today's world's population, especially the population of developing countries is growing at very dangerous speed. The growing population is producing so many problems before us. We need everything extra to maintain such a large population for example. We need extra land to rehabilitee .them, extra farm land to grow food grains and related things. AT causes the problem of unemployment too. Create jobs for a large population is a tuff for government. To meet all solution agriculture management can play an important and vital role. If we manages our land scientific thing. We can grow enough grains and related things. The farm management can provide jobs and opportunity for the young to make money it informing. Every crop matures in maximum 120 days. Crop can easily multiple the inverted capital. So the investor can make his asset in this field.

Thus we can say that there is a way to come out of the problem created by big population. We can feed such a large population, jobs can be created. There is a stage for the capitalist to invest and can maximum there is solution for the problem caused by growing population.

Abstract No. 56

MEDICINAL PLANTS AT THE ETHNOBOTANY–BIOTECHNOLOGY INTERFACE IN RAJASTHAN AND EVALUATION OF THEIR POSSIBLE THERAPEUTIC APPLICATIONS

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ABSTRACT

An imperative demand imposed on all scientific investigations is that they should be reproducible, which calls for adequate documentation from the very beginning. In ethnomedicinal plant research, botanical documentation plays a key role since without correctly identified material and properly documented voucher specimens the results are at best suspect and at worst useless. Population growth, urbanization and the unrestricted collection of medicinal plants from the wild is resulting in an over-exploitation of natural resources. Therefore, the management of traditional medicinal plant resources has become a matter of great urgency. Therefore, now a day's screening of medicinal herbs as potential sources of new bioactive compounds of therapeutic value has increased and in present is the need of hour. The pharmacological evaluation of substances from plants is an established method for the identification of compounds which leads to the development of novel and safe medicinal agents. Based on the ethnopharmacological available literature, several species of medicinal plants used in traditional medicine by indigenous people in Rajasthan were collected and were subjected to in vitro cultures. Tissue culture technology is potent and has opened extensive areas of research for biodiversity conservation. Such facts make it imperative to document the factual position of micro propagation of medicinal plants bringing out the advancement mode along with the short falls, in this important area. Antimicrobial assays were carried out in few selected ethnomedicinal plants facing threat for extinction.

Abstract No. 57

GLOBAL WARMING A BIGGEST CHALLENGE TO HUMAN IN 21ST CENTURY

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ABSTRACT

Overall temperature of the planate has increased approximately one degree calcium in the last 6 decades. The current status of CO^2concentration in air has crossed threshold level 350 ppm and becomes 400 ppm. This is alarming to the existence of several living beings on the Earth. If this trend is not connected within one and half years, the Earth's temperature was increase about 4^0C by the end of 21st century. Increase in temperature is responsible for the melting of glaciers at poles. Due to melting of glaciers several ponds has formed and the water crossed the permafrost level. Due to this water reacts with fossils beneath the permafrost and release methane. This methane is more dangerous than CO^2, as it heating capacity is twenty times more than CO^2. It is predicted that if any control measures have not possible that at end of 21st century temperature may rise more than 4^0C.

There are several factors which affect the global warming such as naturals and manmade. The natural factors are GHG which is not able to escape from the earth, causing temperature to increase. Further volcanic eruption is also responsible for global warming. These eruptions release tons of CO^2 which contributes to global warming. Excessive use of automobiles and fossils fuel results in increased level of CO^2. One of the most common issues that are taking place rapidly is deforestation.

Global warming can be stopped by concerted efforts at individual level as well as government. Involvement of each person at community level, scientist, social workers and policy makers are must. We should begin with the reduction of greenhouse gases. Further, they need to monitor the consumption of gasoline. Switch to a hybrid car and reduce the release of carbon dioxide. Citizens must choose public transport or carpool together be encourage.

Human being can take care of to limit the use of electronic goods and prevent the release of CO^2 and other gases. On the behalf of government's part, they must regulate industrial waste and ban them from releasing harmful gases in the air. Deforestation must be stopped immediately and plantation must be encouraged. If we plant the trees as present is the beginning of 21st century, CO^2 level can be significantly reduced. Now the present generation must take up the responsibility of the stopping global warming in order to make habitable the environment of Earth for future generation.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 58

MANAGEMENT OF SOIL-BORNE PLANT DISEASES THROUGH SUSTAINABLE METHODS

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ABSTRACT

The biodiversity present inside the soil improves the entry and storage of water, resistance to soil erosion, and plant nutrition, while also controlling soil pests and disease, and facilitating recycling of organic matter in the soil. Soil biodiversity is therefore the driver of healthy soil for sustainable crop production. Intensified use of chemical fertilizers for management of plant diseases as well as increasing yield to support growth of current population lead a disbalance in biodiversity of microbes in soil. This has been attributed to environmental degradation, and consequently to climate change. Restoring beneficial organisms that attack, repel, or otherwise antagonize disease-causing pathogens will render a soil disease-suppressive. Plants growing in disease-suppressive soil resist diseases much better than in soils low in biological diversity. Disease suppressive soil can be prepared by using sustainable management. Management strategies encompassing crop rotation, incorporation of crop residues and manure, alter the soil quality and the capacity of soil to perform its functions. Addition of biocontrol agents like Trichoderma species and Pseudomonas species provide a long term protection against soil borne plant pathogens. There is increasing evidence that microbial volatiles play an important role in natural suppression of soil-borne diseases. Production of antifungal volatiles has been shown for a broad range of bacterial phyla: it has been estimated that 30-60% of the soil bacterial species can produce fungistatic volatiles. Volatile compounds produced by soil micro-organisms have an important contribution to the restriction of growth and germination of pathogenic fungi (fungistasis) that occurs in most soils.

Abstract No. 59

IMPACT OF CLIMATE CHANGE ON AGRICULTURE AND ALLIED ACTIVITIES

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ABSTRACT

Climate change is a change in the statistical distribution of weather over periods of time that range from decades to millions of years. It may be limited to a specific region, or may occur across the whole earth. It explores how the agricultural growth and environmental sustainability has to be achieved, while coping with the climate change phenomenon. Agriculture sector reveals high sensitivity and resilience to climate change. Agriculture is an important driver of wheels of Indian economy and also treated as back bone of the country. Thus, Agricultural sector needs to be improved steadily on sustainable, viable and in eco-friendly way. Agriculture growth also has a direct impact on poverty alleviation and important factor for employment generation. Addressing the relationship of climate change on agriculture by relating with the crop, soil, rainfall, green house gas, temperature and how the threatening of Agriculture can be mitigate in a sustainable and viable way by adopting suggested agricultural measures like crop diversification, adoption of new crop varieties, drought and flood management, restoration of waste and degraded lands. One of animal agricultures greatest environmental impacts is its contribution to global warming and climate change. According to the Food and Agriculture Organization (FAO) of the United Nations (UN), the animal agriculture sector is responsible for approximately 18%, or nearly one-fifth, of human-induced greenhouse gas (GHG) emissions. In nearly every step of meat, egg, and milk production, climate-changing gases are released into the atmosphere, potentially disrupting weather, temperature, and ecosystem health. Mitigating this serious problem requires immediate and far-reaching changes in current animal agriculture practices and consumption patterns.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 60

NOISE POLLUTION - A CONTEMPORARY EPIDEMIC: SUPPORT FOR A SILENT WORLD FOR A PRIVILEGED VALUE LIFE

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ABSTRACT

We are affectionate about silence, on the contrary we, Indians, equally enjoy noise pollution. Our numerous rituals, festivals and celebrations must be accompanied by bands, twists, and Bhangras. Spiritual jamborees must be perceived by everyone, day and night. Akhand paths, HarinamSankirtan, Azan in India are preconditioned to use loudspeakers and amplifiers. Our battered environment bears the brunt of deafening firecrackers during marriages, celebrations of religious festivals such as on Dussehra, Deepawali. Immersing thousands of idols of Mother Durga, Saraswati, Laxmi, Kali, Lord Biswakarma, Kartika, and Ganesh in water bodies making ceremonial farewell only possible with film songs and drinking country liquors. Unless we blow away our eardrums, we are not contented. Contentment in India is largely articulated by creating loud noises. Even childbirth is informed by the crackling sounds. In almost all old Indian cities, we have congested roads and busy slow-moving traffic having an army of motorbikes, rickshaws, bicycles, cars, and heavy vehicles. Nevertheless, we must very loud air horns even in motorbikes, bicycles, rickshaws, and cars. This paper reviews the literature on research on noise bearings in India to demonstrate the current status of noise pollution research in India and gaps in studies. It also summarizes forthcoming perceptions of acoustic research. Noise pollution boundaries are being infringed in India. Infringements are the vilest in urban areas. The probable health consequences of noise pollution are plentiful pervasive, persistent, medically and socially noteworthy. Noise produces direct and snowballing adverse effects that impair health, degrading residential, social and working environment with corresponding real (economic) and intangible (well-being) losses. Hullabaloo (or simply put noise) represents an imperative public health problem steering to hearing failure, sleep disorder, cardiovascular disease, social handicaps, abridged output, negative social conduct aggravation, malingering and accidents. Regulations should be appropriately applied in India to rheostat this ever-mounting hazard. The government should endeavor to formulate new noise pollution benchmarks. City-wise noise pollution alleviation policies should be framed out at all levels.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 61

AGRO-BIODIVERSITY CONSERVATION

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ABSTRACT

Biodiversity is the totality of genes, species and ecosystems of a given region. Agricultural biodiversity perform ecosystem services such as soil, water conservation, maintenance of soil fertility, conservation of biota etc. Agricultural systems ought to reflect structure with careful management of agro-biodiversity of preservation of natural ecosystems. Biodiversity can be managed by farmers for the benefits of complementarity and ecosystem services. Associated biodiversity of soil organisms, pollinators and beneficial can serve as built-in regulatory system. Ultimately breeders and farmers choices have interregional and intergenerational consequences when it comes to agro-biodiversity. The value of ecological services and environmental benefits of biodiversity, while not reflected in market prices, is a public good worth conserving.

Abstract No. 62

TRAINING & PRUNING IN GRAPES

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ABSTRACT

Training and pruning are important orchard operation. Both the processes from indispensable operation having direct bearing on growth vigor of plant besides on yield and quality of fruit A Properly trained and plant sustain heavy crop load and produce bounteous harvest of quality. Such plant develop strong framework free from drooping branches, narrow crotch angle, water sprout, root sucker and crown suckers etc. Grape (*Vitisvinifera*) belong to the family Vitaceae and originated between black and Caspian Sea, one of oldest known cultivated plants. It contributes in our GDP in sense of production and export. In India grape cultivation is about under area of 137 thousand hectare and production of 2951 thousand MT. Grape cultivation requires immense technological and man power support. Training refers to judicious removal of plant part to develop a proper shape of plant capable of bearing heavy crop load. Training method applied for grape vine as head system, telephone system, kniffin system and bower system. Judicious removal of plant part to obtain better and qualitative yield is termed as pruning. Pruning is started in later part of plant life, when it becomes capable produce flower and fruit. This technique consists of special practice viz. Heading back, thinning and girdling. Training and pruning enhance fruit colour, fruit quality and storage.

Abstract No. 63

BIODIVERSITY IN ORGANIC HORTICULTURE: A POINTER FOR SUSTAINABILITY AND PEST MANAGEMENT

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ABSTRACT

Conservation and enhancement of biodiversity are mentioned in the International Federation of Organic Agriculture Movements (IFOAM) standards and in all national guidelines as essential pillars for organic agriculture. Recent reviews show that organic agriculture enhances the number of species and the abundance of many taxa (plants, birds, mammals, earthworms, arthropods, soil microbes), compared with conventional agriculture. Considering the benefits for sustainability, a multi-criteria analysis shows that organic agriculture not only improves biodiversity but also has positive effects on soil (e.g., soil erosion, structure, biological activity), water (e.g., no pesticide residues) and climatic factors (e.g., air pollution). In organic horticulture, floral and faunal biodiversity fulfils important ecosystem services: it (i) reduces soil erosion; (ii) improves pollination of crops; and (iii) is an important component of pest management (i.e., conservation bio control). Therefore, conservation bio control is incorporated in a phased approach for arthropod pest management in organic horticulture. Together with suitable cultural practices, the enhancement of soil quality, the choice of resistant cultivars and the implementation of functional biodiversity (e.g., incorporation of non-crop habitats such as hedgerows and wild flower strips) help to prevent pest outbreaks. If these indirect measures do not provide sufficient pest control the programme includes deployment of direct measures such as biocontrol agents and approved insecticides, repellents, and pheromones. The biodiversity aspects of sustainability and pest management in organic systems are highlighted by presenting results of recent reviews and case studies in organic horticulture

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 64

DIVERSITY AND FORAGING GUILD STATUS OF WADERS (CHARADRIIFORMES:AVES) INHABITING KUKRAIL RESERVE FOREST, LUCKNOW, U.P.

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ABSTRACT

The present study was carried out to asses the diversity and the foraging guild status of waders inhabiting Kukrail reserve forest, Lucknow from August 2018 to July 2019. Waders (*charadriiformes*) are a group of medium sized wading birds, which have a wide variety of bill structures and possess long legs and toes enabling them to live and feed in shallow water habitats. Guild is a group of species that exploit the same class of environmental resources in a similar way. Guilds are supposed to be coevolved entities that provide important information on community structure. Foraging habitat use and feeding method can be applied to assign foraging guild to birds. During the study period we have reported and identified 15 wader species belonging to 7 families. Among the recorded species of waders, 5 resident-migrant, 8 resident and 2 were recorded as migrant. Foraging guild status reveals that 20% of waders were omnivorous,26.67% piscivorous and 53.33% insectivorous.

Abstract No. 65

MICROBIAL FUEL CELL – AN ADVANCED APPROACH IN BIOLOGICAL WASTEWATER TREATMENT

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ABSTRACT

Various methods involved in wastewater treatment result in secondary pollution and are not so economically feasible. Thus, there was a need of a sustainable way to treat water without huge capital cost. Microbial fuel cell is an eco-friendly and cheap solution to the problem. It not only treats wastewater but also converts the stored chemical energy of organic materials into electricity with the help of microorganisms. Various researches on types of MFCs like sedimentary MFC, Membrane-less MFC, single and double chambered MFCs are going on all over the world. Factors like pH, temperature, substrate composition and type of microbial culture used affects its performance. Recently, they have been used to power sensors and meteorological buoys. They are a reliable source of energy in remote areas where use of other sources is not feasible. There are various hurdles too that come in path of harnessing ener gy from MFCs like large reactor size and less power generation. They all need to be overcome soon so as to use it in fields in future. That is why MFCs have been used in combination with other technologies too like microbial electrolysis cell, anaerobic digesters and membrane bio-reactors. Thus, all concerns regarding microbial fuel cells have been discussed in this review.

Abstract No. 66

MOLECULAR CLONING, IN SILICO ANALYSIS AND EXPRESSION CHARACTERIZATION OF A CTLD CONTAINING HOMOLOGUE IN MACROBRACHIUM ROSENBERGII EXPOSED TO VIBRIO HARVEYI AND MACROBRACHIUM ROSENBERGII NODA VIRUS (MRNV)

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ABSTRACT

The giant freshwater prawn, *Macrobrachium rosenbergii* is an economically important crustacean species and has received worldwide attention due to high priority as food and food products for consumption and export. The expansion in the culture of species to alien habitats (rice fields, orchard gardens, river banks), high stocking density and intensive farming has resulted in persistent protozoan, fungus, bacterial, and viral infections. The biological challenges to health of the prawn can be minimized through an understanding of important genes especially the pathogen-recognition receptors (PRRs). In this study, we have cloned the full-length ORF sequence of a dual C-type lectin domain (CTLD) containing lectin gene represented as *Mr(T)Lec*-4. The cDNA sequence of *Mr(T)Lec*-4 comprised of 993 nucleotides encoding 330 amino acid residues. Each CTLD contained conserved ligand-binding residues. The deduced amino acid sequence of Mr(T)Lec-4 showed a maximum of 38 % identity with Palaemonmodestus C-type lectin 4 (*PmCTL4*) and Penaeusjaponicus C-type lectin 1 (*PjCTL*1). Phylogenetic analysis revealed that *Mr(T)Lec*-4 belongs to the same cluster which includes *PmCTL*4. Further, the expression of *Mr(T)Lec*-4 mRNA was found greater in the hepatopancreas tissue followed by muscle and intestine of adult prawns. Temporal expression analysis of *Mr(T)Lec*-4 mRNA showed an upregulation at 6 h in Vibrio harveyi injected hepatopancreas tissue of adult prawns. Further, at 48 h post-infection of MrNV challenge, the expression of *Mr(T)Lec*-4 was highest. These reports the putative role of *Mr(T)Lec*-4 in innate immunity.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 67

OXIDATIVE DEGRADATION OF ETHINYLESTRADIOL (EE2) BY LACCASE FROM TRAMETES HIRSUTA AND COMPARISON AMONG MEDIATORS

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ABSTRACT

The increasing use of pharmaceutical drugs by general population is leading to their accumulation in ecosystem. Ethinylestradiol (EE2), a hormone which is extensively used in the birth control pills and to treat menopause has been detected in the sewage water. Presence of EE2 in water bodies found to be affecting aquatic animals' behaviour and their genetics. Male fishes living in EE2 polluted water have reduced sperm production and many of these male fish abnormally make the female egg yolk protein. Degradation of EE2 has been achieved to an extent using UV/H2O2 system, whereas, no degradation of drug was reported in activated sludge from a conventional and a membrane sewage treatment plant. Laccase from Trametes hirsuta(A White rot fungus) can be utilised to transform chemical structure of EE2 to the extent that it become less hazardous for aquatic life. This enzyme is a type of copper-containing polyphenol oxidase which has the capability to reduce molecular oxygen to water which is accompanied by the oxidation of a phenolic substrate. Laccase has been reported to degrade number of xenobiotic compounds with or without mediators. The presence of a mediator compound, such as ABTS, Vertaryl alcohol, NHI, Violuric acid, enhances the enzyme's activity and even extends the substrate spectrum of laccase to various nonphenolic substrates. The kinetics of drug degradation reaction can be studied to compare the efficiency of different Laccase Mediator Systems (LMS). The extent of degradation can be quantified by High Performance Liquid Chromatography (HPLC). Product formed as a result of drug degradation by laccase can be analysed by LC-MS analysis and the molecular structure of the end product can be determined by Nuclear Magnetic Resonance (NMR).

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 68

DIVERSITY OF ANGIOSPERM SEEDLINGS

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ABSTRACT

Seedlings are a critical stage in the life cycle of higher plants. A juvenile plant is called seedling till the persistence of cotyledons/paracotyledons. The germination of plants is not the less interesting part of the life-history of angiosperms, but it has not as yet attracted the attention it deserves. The forms of cotyledons, and the fact that they differ so much from the subsequent leaves, had of course been alluded to more or less fully in botanical works. Despite the valuable contributions of the molecular taxonomists, morphology in all its aspects from micro morphology to embryology, seed, seedling, fruit, floral, stem and leaf anatomy is still significant. Vegetative characters should be stable to make it significant for the taxonomic studies. DNA barcoding is going to be an invaluable tool, but will not altogether replace morphological studies. It is most useful for linking different stages of organisms, seedlings with parent plants, larvae with adult insects. Knowledge of seedling identification and ecology is essential for understanding the local abundance, distribution, and dynamics of individual species for developing sound management and conservation plans. Seedlings are rarely preserved as permanent specimens and are thus generally unavailable for taxonomic study. Different approaches are adopted to conserve Biodiversity of India, especially *in situ* and *ex situ* conservation methods. In both the conservation methods, application of the knowledge of seedling morphology of angiosperms is of immense value, particularly in case of rare and threatened plants. The knowledge of seedlings is often of importance in the context of conservation, crop-weed interaction, vegetation dynamics, and rehabilitation of disturbed areas. In the present study, it is planned to enable people to identify angiosperm seedlings, to produce an introduction to seedling identification and to provide more information on seedling characters for use in taxonomy and phylogeny.

Abstract No. 69

PRODUCTION OF POLYLACTIC ACID FROM COMPOSITE FLORAL WASTE

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ABSTRACT

Waste generation is an undeniable fact of human society. Due to various reasons, several types of wastes are generated in our environment, floral waste is one of those. Large amount of flowers are being used in temples, mosques, gurudwaras by devotees as a token of reverence, for decoration purpose in hotels and wedding ceremonies. This floral waste is already being used at large scale for production of compost, perfumes, incense sticks, bioethanol, biogas etc. All these conversions are way better than the disposal of floral waste in rivers and oceans which adversely affects the water quality and aquatic lives. This work is based on conversion of floral waste into a biobased polymer – polylactic acid (PLA), which is a bioplastic and is said to replace conventional plastic, which we are already using. As society keeps moving towards sustainable and appropriate ways of development, replacement of plastic by a bioplastic is very essential for environmental aspects. In terms of environment, bioplastic could be a solution to plastic pollution because these are made up of organic biomass rather than petroleum and produces lesser greenhouse gases on combustion than conventional plastic. Plastic decomposition takes thousand years to decompose while bioplastic decomposes in weeks to months. Thus, due to finite limits of petrochemical reserves and threat of global warming, bioplastic production is a growing field.

Abstract No. 70

EMERGING CHALLENGES OF ENVIRONMENTAL ISSUES IN HILLY SNOW COVERED AREAS OF NORTH WESTERN HIMALAYAS

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ABSTRACT

Snow cover in the North Western Himalayan (NWH) region is highly variable with respect to space and time, which influences the environmental and climatic issues at regional and global scale. Seasonal snow plays an important role in earth's climate system. Snow covers affects the temperature of earth by regulating it, and once that snow melts, water starts flowing to fill the rivers and reservoir available in that region. The Himalaya has the highest as well as largest mountains system on the earth, whose length is about 2400 km and 300 km in width, with extreme variation in topography and climate. There are so many big rivers like the Ganges, Indus and Brahmaputra originates from the snow and glacier covered mountains and they have sufficient amount of seasonal and annual water supply. It is hard to think about an asset which is more essential to the good health of the people and their economies than water; still management of water resources is complex and one of the most challenging tasks. People living in Hill areas are heavily dependent upon water resources for irrigation and agriculture, preparing food, generating hydropower, maintaining sanitation as well as proper functioning of many ecosystem services. Despite this, most emerging challenge for people living in hill areas has limited access to water for drinking, cooking and agriculture.

Abstract No. 71

BIOPOTENCY OF CERTAIN NATURALLY OCCURRING ASTERACEOUS EXTRACTAGAINST COTTON APHID, APHIS GOSSYPII GLOVER (HEMIPTERA: APHIDIDAE)

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ABSTRACT

In the present investigation alcoholic extract of ten indigenous naturally occurring asteraceous plant extracts viz., aerial parts of *Cichoriumintybus* (L.), *Chromolaenaodorata* Linn., *Chrysanthemum cinerariaefolium* (trev.) Vis., *Inularacemosa* Hook. F., *Mantisalcaduriaeri Birq*. Et Cavill., *Rechardia tingitana* (L.) Roth, *Rhaponticumacaule* (L.) DC, Scorzonera undulate *Vahl, Spilanthespaniculata* Well ex DC and *Tagetesminuta* Linn. were prepared under the laboratory conditions. For testing the repellent effect the okra leaves were used as food against nymph and adults of Aphis gossypiiGlover. After four hours of A. gossypii nymph and adults release, The data was collected on the number ofnymph and adults of A. gossypii reached and repelled at each treated food. All the comparisons were made with control. It is evident from the results of repellent test against nymph and adults of Aphis *gossypii Glover* that all the asteraceous extractives showed a good repellent property, when compared with the control. The repellent properties was observed based on their minimum EC50 values as : C. intybus (0.1359)>I. racemosa (0.1531) >T. minuta (0.1833) >M. duriaeri (0.3208) >S. undulate (0.4123) >S. paniculata, (0.6365) >R. acaule (0.6469) >R. tingitana(0.7124) >C. odorata (0.9025), respectively. The relative EC50 values of the above extracts are in descending order , 6.6409 > 5.8948 > 4.9236 > 2.8132 > 1.4179 > 1.3951 > 1.2668 > 1.2161 > 1.1668 > 1.0000 times as repellents, whereas S. paniculata is taken as a unit. C. intybus and Inularacemosa aerial parts extract significantly reduced the population and damage caused by the major insect pests of okra recorded at Kanpur, India, compared to the untreated control.

Abstract No. 72

PROPERTIES AND USES OF ASTERACEOUS EXTRACTIVES: AN ECOFRIENDLY ALTERNATIVE APPROACH IN MANAGEMENT OF APHIS GOSSYPIIGLOVER

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ABSTRACT

In the present investigation alcoholic extract of ten indigenous naturally occurring asteraceous plant extracts viz., aerial parts of *Cichoriumintybus* (L.), *Chromolaenaodorata* Linn., *Chrysanthemum cinerariaefolium* (trev.) Vis., *Inularacemosa Hook*. F., *Mantisalcaduriaeri Birq*. Et Cavill., *Rechardia tingitana* (L.) Roth, *Rhaponticumacaule* (L.) DC, Scorzonera undulate Vahl, *Spilanthespaniculata* Well ex DC and Tagetesminuta Linn. were prepared under the laboratory conditions. In the initial study, treatments including control having different extracts were carried out under laboratory conditions to evaluate the insecticidal effectiveness on the target pests. The laboratory experiment was comprised of ten treatments including untreated control with three replications and periods. The extracts of *A. paniculata, C. odorata, C. intybus, I. racemosa., M. duriaei, R. tingitana, R. acaule, S. undulata, S. Paniculataand T. minuta* and untreated control were tested for insecticidal ef fectiveness against nymphs and adults of *Aphis gossypii*. The data depicted in results indicated that alcoholic extracts of C.odorata registered highest mortality (75.77%) to nymphs and adults of *A. gossypii*, when compared to other plant extracts as: *S. paniculata* (74.25%), *T. minuta* (69.32%) and *S. undulate* (66.76%) have registered encouraging (greater than 60 % mortality) results having insecticidal properties under laboratory trials.

Abstract No. 73

GREEN SYNTHESIS OF COPPER NANOPARTICLES USING SYZYGIUM CUMINI (LEAF, SEED, PULP) EXTRACTS AND THEIR APPLICATIONS

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ABSTRACT

The use of copper nanoparticles is having a huge attention of researchers from different fields due to its catalytic, optical, photonic, electric and antimicrobial activities. The biosynthesis of copper nanoparticles using plant extract is environment friendly, non-toxic and economical. Therefore, the present study aims to provide method of green synthesis of copper nanoparticles using *Syzygiumcumini* extracts (Leaf, seed, and pulp)its antimicrobial activity and their effect on seed germination. So, to achieve green synthesis of copper nanoparticles, 5 mM of copper sulphate pentahydrate ($CuSO_4.5H_2O$) solution (50ml) was taken and 1 ml of plant extract was mixed, the color of the solution changed from light blue to dark brown thus, confirming the formation of copper nanoparticles, kinetics of the reaction was studied with the help of UV-visible spectrophotometer at 568 nm. The antimicrobial activity of copper nanoparticles was tested on *Escherichia coli, Bacillus subtilis* and Pseudomonas fluorescens. This antimicrobial activity was profound against Pseudomonas *fluorescensand Bacillus* subtilis, however mild antibacterial activity was observed in the case of *Escherichia coli*. The effect of nanoparticles on the seed germination of wheat and grams was also assessed, on comparing the results with the control it was found that the germination of roots was inhibited in the presence of copper nanoparticles. According to this study, *Syzygiumcumini* (Leaf, seed, and pulp) extracts can be successfully used to make copper nanoparticles having significant antibacterial property and they have inhibitory effects on the seed germination.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 74

A NOVEL SPECIES OF PASSALORA (MYCOSPHAERELLACEAE) FROM INDIA

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ABSTRACT

The fungi constitute a very large group of heterotrophic organisms found in virtually every ecological niche. Their successfulness has led them to outnumber the sum total of green plants and other organisms on earth. Due to their peculiar characteristics and distinctive biochemistry, these organisms have been placed under a separate microbial kingdom , the mycetae (or) the mycota. Mycetae has been divided into two Myxomycota and Eumycota. The Eumycota Includes five divisions viz; Mastigomycotina, Zygomycotina, Ascomycotina, Basidiomycotina and Deuteromycotina. The Deuteromycotina is reproducing only asexually,is a dustbin group which has been state of flux from the beginning . However, Deuteromycotina has been divided into four classes such as- Ascomycetes, Blastomycetes, Hyphomycetes and Coelomycetes. The foliiclous hyphomycetes form an interesting ecological group, of remarlable diversity in their modes of entry and colonization of the leaves. The foliiclous hyphomycetes consist of Cercospora complex almost all the generic segregates have their root in monophyletic (Crous et al :2001 b) Mycosphaerella telemorph. Cercosporoid hyphomycetes parasites of Dolichous lablab (Fabaceae) is desecribed as Passalora as a new species from Tikamgarh district of Madhya Pradesh India. This communication includes description and illustration of this new Passalora species based on morphotaxonomy. On such a vital possession of nature micro-organisms play chief destructive role of which fungi are the most important micro-organisms parasitizing various parts of the plant especially leaves, most delicate part of the plant and destroying the main photosynthetic part of the plant. The forest play vital role in balancing our environment and maintaining the fertility of soil. The holotype of specimen deposited in AMH, Pune and isotype has been kept in Departmental Herbarirum for further reference.

Abstract No. 75

BIODIVERSITY CONSERVATION AND MANAGEMENT WITH SPECIAL REFERENCE TO ICTHYOFAUNA OF EASTERN U.P. INDIA

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ABSTRACT

Biodiversity is the most essential component of our earth biosphere causes and essence of evolution of higher forms of life. Any dilation and loss in it, at any level is bound to impact the whole global ecosystem chain.

Freshwater lakes are well known resource for several genera of fish fauna. Fishes constitute roughly more than one half of all vertebrate comprising about 40 thousands species at global level. Eastern U.P. mostly contain oxbow lakes namely Chando. Sikandarapur Bakhira lake and other tributaries of Ganga river. In eastern U.P. fishes of ten orders namely Clupeiformes, Cypriniformes, Cyprinidontiformes, Beloniformes, Mastacembaliformes, Muguliformes, Ophiocephaliformes, Perciformes, Symbranchiformes, And Tetraodontiformes have been reported. The freshwater resources of eastern U.P. are currently experiencing an alarming decline in fish diversity due to various anthropogenic activities. Hence the immediate action for conservation of fish biodiversity necessary.

Close survey of various lakes and rivers of eastern U.P. have been made and icthyofaunal diversity as reported earlier in 20th century has been compared with present status in this paper.

Abstract No. 76

FUNCTIONAL PROPERTIES OF CHICKPEA PROTEIN ISOLATES OBTAINED FROM DIFFERENT CULTIVARS

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ABSTRACT

Two cultivars of chickpea namely desi and kabuli were selected and protein isolates were prepared by modification before alkali solubilization and then isoelectric precipitation was done. K1and P1 were alkali solubilized without any modification. K2 and P2 were washed by 80% ethanol twice to remove polyphenols before solubilization. In K3 and P3, sodium sulphite was added and then solubilized in alkali. Protein content of K3 and P3 were highest (dwb). LBD (Loose bulk density), PBD (Packed bulk density) and water holding capacity (WHC) was also higher for K3 and P3 isolates. Oil holding capacity (OHC) was higher for K2 and P2 isolates. K2, K3 and P3 were higher in lightness value. Chromaticity was higher for K1and P1 due to its darker colour. With increase in pH, EAI (Emulsion Activity Index), ESI (Emulsion Stability Index), FC (Foam Capacity) and solubility increased. But the FS (Foam Stability) was highest at pH5 i.e. at minimum solubility of protein isolates. With increase in NaCl concentration, EAI decreased with increase in concentration, but increased at 1.0% concentration. ESI which was higher at 1.0 % for desi cultivar and higher at 0.5% for kabuli cultivar. FA and solubility increased with increase in Na Clconcentration but not FS. Solubility decreased with increase in temperature.

Abstract No. 77

NATURAL BALANCE OF ECOSYSTEM WITH THE EXAMPLE OF SOME SPIDERS

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ABSTRACT

The natural process of material and energy flow in ecosystem balances the ecosystem and maintains the habitats. It is the process by which the overcrowding of any species is checked. In this way the harms due to any species also lowers. Balance of ecosystem is very important phenomenon. If any species increases up to uncontrolled level most of the part of ecosystem may destroy and change in characteristics of any habitat occurs. So the balance of ecosystem is necessary for the maintenance of habitat. When we go through the pages of evolution we find that in geological time scale the evolution of different species were in balanced manner, if not some species became extinct. We can also observe the distribution of animals in different habitats and zoogeographical region of world is also in balanced manner. In this paper I putted some examples of spiders, like *Nephiliapillipsand Crossoprizalyoni*. Spiders eat different types of insects in food chain. Populations of harmful insects are checked by this way naturally.

Abstract No. 78

ANTICARCINOGENIC PROPERTIES OF FRUITS AND LEAFY VEGETABLES

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ABSTRACT

As we all know,many health problems can be avoided if we take the necessary measures.A large percentage of cancer related deaths are directly linked to lifestyle choices such as an unhealthy diet, smoking, drinking and a lack of exercises. Nowadays we eat such foods that act as a fuel to cancer, while neglect those powerful foods and nutrients that can protect us from such a deadly disease. Fruits and vegetables have less fat, more fiber and more cancer fighting nutrients. These three elements work together to support immune system and help our body to fight off cancer. It is observed that diets high in fruits may lower the risk of stomach and lung cancer. Carotenoid vegetables such as carrots, brussel sprouts reduces the risk of lung, mouth, pharynx and larynx cancers, while non starchy vegetables such as broccoli, spinach and beans may help to protect against stomach and esophageal cancer. Research shows that vegetarians are about fifty percent less likely to develop cancer than those who eat meat as meat lacks fiber, nutrients and have very high amount of saturated fats. It is observed that most common cancers are preventable through changes in our diet and life style, which are as follows –

- Be as lean as possible without becoming under weight
- Eat dark green leafy vegetables especially foods that comes from the cabbage family
- Do regular rejuvenation and purification methods such as fasting, liver and gall bladder flushes.

We should prevent high cooking temperature as enzymes are destroyed above temperature of 48°C. We should develop the capacity to listen to our body signals as it always gives clues of balanced or imbalanced mechanism. It is not just what we eat that counts but also what we avoid. So we should avoid saturated animal fats, hydrogenated fats and heated oils. Every 35 gram of dairy protein can increase the risk of prostate cancer by 32% while eating more fruits and vegetables can lower the risk of cancer. So by making small changes to our diet and behavior, we can lower the risk of disease and possibly even stop cancer in its track.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 79

ROLE OF SOIL HEALTH CARD IN IMPROVING HEALTH STATUS OF SOIL

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ABSTRACT

Healthy Soils can provide healthy crops. Soils naturally contain many nutrients, out of which nitrogen, phosphorous, calcium and potassium are of prime importance. These nutrients are essential for plants' growth and development. When soil nutrients are missing or in short supply, plants suffer from nutrient deficiency and stop growing. Then, application of fertilizers to soils as per requirement is very important to provide balanced nutrients to the plants grown on it. The soils of Assam are basically acidic in nature. The productivity potential of soil is also limited. Together with cultivation of crops for years, the soils need to be replenished periodically. As such, soil test based application of fertilizers in the form of 'Soil Health Card' is a great step towards sustainable agriculture by the Government of India. The scheme is considered as a holistic measure for soil health and farm economy. A soil health card is meant to give each farmer soil nutrient status of his holding and advise him on the dosage of fertilizers and micronutrient and also the needed soil amendments that he should apply to maintain soil health in the long run. The scheme is considered as a holistic measure for soil health and farm economy. A SHC carries crop wise recommendation of nutrients and fertilizer required for the individual farms to help farmers to improve productivity through judicious use of inputs.

Abstract No. 80

ECOLOGY AND EVOLUTION STUDY OF THE PREVALENCE OF HELMINTHS IN THE COMMON RAT, RATTUS RATTUS (LINNAEUS)

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ABSTRACT

A Study of the prevalence of helminths parasites in the common rat *Rattus rattus* (Linnaeus) has been carried out. A total of 54 hosts were examined in which 179 helminths parasites were obtained from the gall bladder and intestine of the host. They include 95 cestodes, 70 nematodes, 14 Acanthocephala and no trematode.

The prevalence of helminths was studied month-wise, season-wise and annual basis. Month-wise prevalence in the male rats are low in October, moderate in November and February and high in January, March, April, May, June, July, August and September. In female rats, prevalence is low in December, high prevalence seen in October, November, January, February, April, May, June, July, August and September. The seasonal prevalence of cestodes is higher in summer and rainy season but low to moderate in winter. The seasonal prevalence of nematodes is high in the rainy season but low in winter and summer. The seasonal prevalence of Acanthocephala is low in the winter season. The annual variations of the prevalence of cestodes are higher in females than the males that of nematode are higher in females than the males while that of Acanthocephala is higher in males than the females.

Abstract No. 81

AN OVERVIEW OF SOCIO-ECONOMIC CONDITIONS OF SHOE-REPAIRERS (COBBLERS) IN NAINITAL DISTRICT IN UTTARAKHAND

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ABSTRACT

The profession of shoe-repairers is a family craft which is passed on from generation to generation. Shoe-repairer, popularly known as "cobbler" or "मोची" is a person who does the mending or repairing of worn out footwears. A survey was conducted on 30 cobblers in Nanital district of Uttarakhandto study their socio-economic factors and identify the issues and challenges faced by them in their working environment. Cobblers use variety of tools like knives, hammer, thread, needles and various chemical based dyes, glues and adhesives which may lead to occupational risk or injury. Results revealed that about 46% of the respondents were in the age group of 40-60 years. Nearly 53% of the respondents were found to be illiterate while rest of them having attained basic or primary education. Majority of them, 80%, were married. This shoe repairing work was the family occupation of nearly all the respondents. Further analysis showed that majority of the respondents had frequent pain in different body parts and frequent tingling in hand and leg. Near about 70% often had headache or weakness or dizziness. The average per day income was found to be around Rs 350 to Rs 400.Inspite of the type of season, majority of the them sat for 10-12 hours daily on their locations which is on roadside of a busy route.This leads to rashes and headache often due to heat and frequent eye irritation for majority of the respondents. All the respondents had often suffered from numbness in some of their body parts during cold season. Tools and equipments are also a potential threat of workplace hazards. All the respondents had suffered from piercing of hand due to use of pointed tools atleast once during their work.

Abstract No. 82

SOLID STATE FERMENTATION AND STATISTICAL OPTIMIZATION OF MEDIUM COMPONENTS FOR PRODUCTION OF GRESIOFLUVIN ON BARLEY BRAN USING PENICILLIUM GRISEOFLUVUM

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ABSTRACT

Penicillium griseoflulvum is a species belongs to the genus of Penicillium which produces a secondary metabolite called Griseofulvin. Griseofulvin is an antifungal drug used to treat Dermatophytosis caused by the *Microsporum* sp. and *Trichophyton* sp. The mode of action of Griseofulvin is by disturbing the structure of mitotic spindle of fungal cells, nucleic acid synthesis and cell wall synthesis in fungal cells. The current work is focused on studying solid state fermentation for Griseofulvin production and the statistical optimization of its medium composition by using Plackett-burman experminent. The Nutritional factors and Physicochemical parameters were evaluated using a Plackett-Burman Design. The present research work emphasizes on solid state fermentation as this is comparatively more favorable as it balances the process economics including low capital cost, simplicity regarding with low waste water output and also aims for improved product recovery. For a good product yield of Griseofulvin by Solid state fermentation, it is important to pay special attention to monitoring fermentation parameters like moisture, humidity, temperature and pH. The current prospect of Griseofulvin is to investigate the substrate uptake and estimate the growth for enhanced production of antifungal metabolite Griseofulvin by *Penicillium Griseofulvin*. The use of ionic liquid solvents have great solvency properties as a promising method of pretreatment for lignocellulosic biomass, For example 1-ethyl-3-methyl imidazolium diethylphosphate and 1-butyl-3-methyl imidazolium-trifluromethane sulfonate on Barley bran.

Abstract No. 83

EFFECTS OF OPEN LANDFILLS ON ENVIRONMENT AND HUMAN HEALTH IN INDIA

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ABSTRACT

Municipal solid waste represents the technological development that generates it and affects the health of people living in and the environment surrounding it. There is a huge ascension globally which become a burning social issue worldwide. In 2016 about 2.01 billion tones of solid waste was generated by the world's cities i.e. 0.74 Kg per person per day which is expected to reach 3.40 billion tons annually in 2050 because of unprecedented population growth & urbanization. India is the second largest populated country in the world is facing impediment to its development and the most critical concern which need exclusive attention is municipal waste management. Presently for waste management in India, waste is collected from source in mixed waste form and then transported to low lying landfill areas which lead to various hazards like surface and ground water pollution, soil pollution and air pollution etc. Current system of waste management in India cannot cope up with the volume of waste generated by increasing population and technological development. As there is huge increase in population rate and land is even insufficient to fulfill the basic needs i.e. home and food. Landfills have a certain age but because of less availability of land many of them are still in working condition which is not good for environmental factors. In residential proximity excess of respiratory disorders, birth outcomes and many cancer cases were reported at national and international levels.

Abstract No. 84

FLASH FLOOD AND ITS MITIGATION IN HILLY AREAS

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ABSTRACT

Flash floods are severe events caused by extreme cloudbursts, glacial lake outbursts, dam failure, landslides, debris, release of ice jams, or snow. Since the warning time is very less, i.e. in minutes or at most in hours, flash floods can have very bad impact over a large area. Flash floods are also characterized by a sudden rise in water level with high velocities, and lar ge amounts of debris. Flash flooding occurs most commonly in steeply sloping valleys in hilly areas, but can also occur along small waterways in urban environments. Steepness of watershed, stream gradient & intensity and duration of rainfall also play an important role in flash flood. They are generally characterized by ragging torrents after heavy rain that dip through river bed, urban streets, or mountain cannon thereby sweeping everything that comes in between them hencethey are much more dangerous than floods. The study here describes the flood mitigation and preventive methods along with the guiding principles. The study done on the relationship between the number of flash flood events and rainfall show that the increase in number of snow melting and rainfall in hill areas such as Uttarakhand, Himachal Pradesh, Jammu and Kashmir and Ladakh is actually leading to an increase in average number of flash flood events. A composite factor which is developed to account for both heavy rainfall and cloudburst together when compared to average annual number of flash flood indicated that densely populated areas in hilly terrain are more vulnerable to flash flooding. The results highlight that North-Eastern regions are more prone to flash flood. With the improved understanding more accurate and timely warning of flash flood would be possible thereby would aid the concerned government body in creating awareness and enhance warnings.

Abstract No. 85

VALORIZATION OF LIGNOCELLULOSIC BIOMASS FOR THE PRODUCTION OF BIOETHANOL-A BIOFUEL

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ABSTRACT

Increases in the global demand for energy, high fuel prices, and depletion of fossil fuels, as well as concerns of global warming, have led to find out for alternative strategies for energy production. Biofuels are one key alternative option for the substitution of fossil fuels. Biomass serves as a potential renewable source to obtain of solid, liquid, and gaseous biofuels. As the effort to promote sustainability and independency from fossil fuel, bioethanol-a bio fuel is now favoured as the blend or fossil petrol substitute. However, the feedstock functionality of first-generation bioethanol production is restricted due to its edibleness since it would clash the feeding purpose. Second generation bioethanol production fulfils the impractical gap of first generation since it employs non-edible feedstock sourced from agriculture and forestry wastes. For these reasons lignocellulosic biomass is becoming increasingly recognised as a good feedstock and carbon source with different components and applications. Lignocellulosic biomass consists mainly of lignin and the polysaccharides cellulose and hemicellulose. Compared with the production of ethanol from first-generation feedstocks, the use of lignocellulosic biomass is more complicated because the polysaccharides are more stable and the pentose sugars are not readily fermentable by Saccharomyces cerevisiae. In order to convert lignocellulosic biomass to biofuels the polysaccharides must first be hydrolysed, or broken down, into simple sugars using either acid or enzymes. Several biotechnology-based approaches are being used to overcome such problems, including the development of strains of Saccharomyces cerevisiae that can ferment pentose sugars, the use of alternative yeast species that naturally ferment pentose sugars, and the engineering of enzymes that are able to break down cellulose and hemicellulose into simple sugars. Herein, the article presents the detail of the existing variance of second generation bioethanol production methodologies, namely pre-treatment, hydrolysis, fermentation and distillation, as well as the worth of second generation production for future reference.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 86

EDUCATION FOR SUSTAINABLE DEVELOPMENT

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ABSTRACT

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

1992, the United Nations Conference on Environment and Development published the Earth Charter, which outlines the building of a just, sustainable, and peaceful global society in the 21st century.

The United Nations Conference on Sustainable Development (UNCSD also known as Rio 2012) was the third international conference on sustainable development, which aimed at reconciling the economic and environmental goals of the global community. An outcome of this conference was the development of the Sustainable Development Goals that aim to promote sustainable progress and eliminate inequalities around the world.

All 17 Sustainable Development Goals (SDGs) have specific targets to be achieved by 2030. The goals and targets are universal; they are applicable to all countries around the world including poor countries. Attainment of the goals requires action on all stakeholders – governments, businesses, civil society and people.

Education for Sustainable Development (ESD) is defined as education that encourages changes in knowledge, skills, values and attitudes to enable a more sustainable and equitable society. Education for sustainable development (ESD) aims to empower and equip present and future generations to meet the needs using a balanced and integrated approach to the economic, social and environmental dimensions of sustainable development.

Today,Education for Sustainable Development(ESD) is arguably at the heart of the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) (United Nations, 2015). The SDGs recognize that all countries must stimulate action in the following key areas - people, planet, prosperity, peace and partnership - in order to tackle the global challenges that are crucial for the survival of humanity. ESD is explicitly mentioned in Target 4.7 of SDG4, which aims to ensure that all learners acquire the knowledge and skills needed to promote sustainable development and is understood as an important means to achieve all the other 16 SDGs (UNESCO, 2017).

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 87

WASTE MANAGEMENT AND SOCIO-ECONOMIC IMPACT

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ABSTRACT

According to Union Minister of State for Environment, Forests and Climate Change, Prakash Javadekar, 62 Million Tonnes of Waste is generated annually in the country of present, out of which 5.6 million tonnes is plastic waste, 0.17 million tonnes is biomedical waste, hazardous waste generation is 7.90 million tonnes per annum and 15 lakh tonnes is e-waste. He added that only about 75-80 per cent of the municipal waste gets collected and only 22-28 per cent of this waste is processed and treated.

The new rules are now applicable beyond municipal areas and have included urban agglomerations, census turns, notified industrial townships, areas under the control of Indian Railways, Airports, special economic zones, places of pilgrimage, religious and historical importance, and state and Central Government Organisations in their ambit.

Market for by products: Proper waste management generates useful by products (compost in the case of composting, energy in the case of W.T.E. plants and fuel in the case of R.D.F. plants) and creates a circular economy. With heavy subsidies in chemical fertilizers, farmers are disincentived to move towards organic farming, thus reducing the market for compost, drastically. While the new SWM rules attempt to correct the inef ficiencies by mandating the department of fertilizers to take up marketing of compost, a lot more needs to be done to create a market for compost and encourage farmers to adopt organic farming. Similarly, recycling companies today complete at par with industries using fresh raw materials (virgin products). Buyers of recycled plastic pellets, for instance have no incentives to go for sustain able initiative, unless, lucrative cost savings are involved.

The government also needs to take a more holistic view of -

1) The impact of overuse of fertilizers on agricultural land.
2) How sustainable waste management models could be encouraged to attract more players and investments into the market.

Thus, key policy interventions need to be in place for:
Compost: Tax incentives and buy-back of compost from waste producers while fixing minimum standards of compost quality would enable more formal certified waste management companies to thrive in the system sustainable.

Recycled products: Along with the EPR introduced by SWM 2016 rules, mandating corporate companies to also use a minimum percentage of recycled products to as part of their manufacturing process world be beneficial compost pits should be constructed in every locality to process organic waste. Community participation has a direct bearing on efficient waste management. Recovery of e-waste is abysmally low; we need to encourage recycling of e-waste on a very large scale level so that problem of e-waste disposal is contained.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 88

IMPACT OF TEXTILE WASTE WATER ON SEED GERMINATION AND SEEDLING GROWTH OF MUNG BEAN (VIGNA RADIATE L.) IN SANGANER REGION AT JAIPUR (RAJ.) INDIA, ACASE STUDY

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ABSTRACT

The present work deal with the effect of textile waste water on germination percentage, capacity of germination and early seedling growth of mung bean (*Vigna radiate* L.) under laboratory conditions. The effect of textile waste water compared to that of control (Distilled water). Concentration used for both the waste water were 0, 20,40,60,80,and 100% minimum relative toxicity percentage was in 20% -40% concentration and increase gradually as the concentration textile effluents have more toxicity. Number of seed also decreases with the increase in concentration .The recorded observation it is concluded that. The textile waste water diluted 40% concentration for mung Bean (*Vigna radiate* L.) enhances germination of seeds.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 89

IMPACT OF INDUSTRIAL EFFLUENT ON SEED GERMINATION AND SEEDLING GROWTH OF MOTH BEAN (VIGNAA CONITIFOLIA L.) IN SANGANER REGION AT JAIPUR (RAJ.) INDIA, ACASE STUDY

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ABSTRACT

The Sanganer town is a leading industrial zone of Jaipur city. In this area many textile and paper mill industries are situated, which discharge the industrial effluents. These effluents are utilized by local farmers to irrigate the crops. The present study carried out to assay the effect of industrial effluent on germination percentage and seedling growth of Moth Bean (*Vigna aconitifolia* L.). The studies were done with the various concentration was in favor of germination and seedling growth while there was gradual increasing concentration and maximum ef fluent concentration inhibition in seed germination and seedling growth was found in 100% pure effluents. The present study is mean for aware the farmers of adjoin area of sanganer to utilize the dilution of industrial effluents this more beneficial and rich nutrients providing in various crops.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 90

EMERGING CHALLENGES OF ENVIRONMENT

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ABSTRACT

The flora, fauna and microorganisms as well as the man-made structures in our surroundings have a bi-directional interaction with us directly or indirectly. The totality of all these components and their interactions constitute the environment. In the other words, everything that surrounds or affects an organism during its life time is collectively known as environment. Environment is based on interactive and functional relationship between biotic and abiotic components. Its working depends on the system by the flow of energy, which tends to maintain an ecological balance.

There are three types of Environment & i) Natural Environment (ii) Man-made Environment (iii) Social Environment. Miss Sample, a leading American geographer of the early 20th century, stated that "Man is the product of Earth or his environment". This concept leads the school of Determinism. According to this thought, the Environment controls the course of human action. After some time it was rejected. A new approach came, named possiblism, which attempts to explain, man and environment relationship is in different way. According to this - man is a active agent in ecology and environment.

In 1920's G. Taylor forwarded as new approach called Neo-Determinism. According to this approach-Man is able to accelerate, slow or stop the progress of his development. The man started to develop with culture and civilization and started to effect the environment according to his requirement. Impact of environment of man can be seen clearly by the colour of skin, types of hair, cheeks, shape of head, nose etc. There is close relationship with weather conditions and mans brain and working capacity and even thinking also. The environment decides the activities of man, his comfort and discomfort. On the other hand Man effects on environment by his activities. For his economic development, man tries to change the environment by his construction work. Though his work is for short time, but the effect of his activities affect the environment for long time. Majority of the indirect impacts of human activities on the environment are relative to pollution and environmental degradation. Global warming is the result due to effect of pollution, which result in climate change.

Ultimately all environmental issues are the result of pollution by human's activities. The effect of pollution is great and dangerous for the whole globe and for the long time, which can be minimized through human's short action. The man himself is responsible for what he had done. So only the human being, by his activity can control the environmental degradation. Man has to think for his globe. He has to think high and minimized his requirement by simple living. This can be achieved only by sustainable development through Science and technology with moral science.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 91

ENVIRONMENTAL HEALTH RISKS CAUSED BY HAZARDOUS WASTE

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ABSTRACT

Now a day, we are on the way to make India more capable in each field of modern society. We always require new and latest facilities for our fast working. For fast growing life, we use many electronic equipments, medical materials, reactive chemicals, radioactive materials etc. for better and fast result, but have we ever thought about the waste produced by these equipments, chemicals & materials. It is must to know about "Hazardous waste". Hazardous waste is defined in different categories like Reactive waste, Radioactive waste, Infections waste, corrosive waste, Ignitable waste, medical waste, nuclear waste. All these Hazardous wastes are very much harmful for human & animals life. The proper management of these wastes is very much important otherwise these wastes may cause different life threatening diseases for human life. Hazardous wastes are poisonous even in very small amount. Many of Hazardous wastes are the main cause of contaminated ground water and responsible for infertility of the land also. Heavy metals and chemicals like lead, mercury, and arsenic come under Hazardous wastes. Hazardous wastes may have an immediate effects and later effectson human life.

Radioactive waste is produced by our nuclear plants and remains in our environment for several years. Corrosive waste destroys materials and living tissues by chemical reactions. Ignitable waste reacts with air or water and produces gases and explodes during management like gunpowder and nitroglycerine. Human tissue from surgery, used bandages and hypodermic needle and microbiological waste come under infections waste. We are using several electronic devices, these devices run by batteries and other parts of these devices containing chemicals also. But when these parts and batteries are out of use then all these come under Hazardous waste. Now main issue is to manage all these Hazardous wastes in proper way so that wastes may not harm the human life.

Indian Government is running several movements for these Hazardous wastes. In many hospitals and centers, we have seen the different colour dustbins for different wastes. Everybody should be educate for this waste management at root level. Many more steps are required for better management of Hazardous waste of different categories. Segregation of these wastes is required at source point. Regular education programs and campaigns are required for every person for better waste management. And at last proper dumping place is must for these wastes according to their categories.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 92

ROLE OF BIOFERTILIZERS IN AGRICULTURE

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ABSTRACT

The term fertilizer refers to the fertility of soil. Biofertilizers are the substances that contain microorganism's living cells. The fertility of soil is most important according to the view of point of an agriculturist. The fertility of soil depend not only the chemical composition of soil but also on the quality and quantity of useful microbes present in the soil. Thee fertilizers increase the nutrients of host plant. Those substances which contain living microorganisms that colonize the rhizosphere of the plants and promote growth by increasing the supply of nutrients to the target crops are called biofertilizers. If the composition of soil is poor in fertility then materials of biological origin are added in it to improve and maintain its fertility. These materials are of two typesi.e manure and biofertilizers. The use of biofertilizers is gaining importance because of the proper maintenance of soil health, the minimization of environmental pollutions and more production. These biofertilizers are cost- effective and renewable source of plant nutrients and replace the chemical fertilizers for sustainable agriculture. For maximization of ecological benefits and minimize the environmental hazards, the specific microorganisms like bacteria Cyanobacteria etc. are used as biofertilizers.

For the supply of microorganisms to the farmers, some suitable media like powered coal and lignite soil etc. are required. The need of biofertilizers is known by the farmer after testing of soil in the laboratory. Normally the Phosphorus is present in the soil in the bound form or immobile form. Pseudomonas, a biofertilizer solubilize the bound phosphate to increase the availability of soluble phosphate to the plants. Azotobacter is a nitrogen fixing bacteria which fix atmospheric nitrogen in the soil and makes its availability to the plants and thus increased the fertility of soil. Rhizobium leguminocerum is a symbiotic nitrogen fixing bacteria. It forms an efficient symbiotic relationship with leguminous plants (family leguminaceae). A good farmer should have crop rotation to gain more production.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 93

ECOLOGICAL PACKAGING FOR SUSTAINABLE MARKETING

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ABSTRACT

Exchange for surviving and pleasure is facilitated by Marketing, which is complex in nature and dynamic in action. It deals with prospective consumers by altering their perception, belief and attitude towards its offerings. Marketing executive always think about enhancing market share by diagnosis of the market situations, its interpretation, assumption of risk and evaluation of various alternative option available through logical analysis and lack social responsibility toward ecology which now a days a major threat towards environment. Indicators of quality of life can not be measured only by physical possessions but its environmental parameters also which are ferociously disturbed due to excessive use of natural resources for satisfying never ending human wants. Every city of India produces million tons of Garbage which require its proper disposal and waste generated by packaging of durable and non durable products are major contributors behind this ecological disturbance. Ecology deals with relation of biotic and non biotic factors while marketing deals with relation of marketer and consumers so proper relationship should be balanced otherwise mutual relationship can't be established. Packaging has changed its shape from protect and hold to attracting attention of consumers for describing the product features and making the sale. Marketers have to use environmental friendly packaging materials for maintaining the ecology. This paper is an attempt to highlights the necessities of maintaining healthy ecology by environmental friendly degradable packaging material for sustainable marketing practices in our daily consumable products

Abstract No. 94

CARBON CREDIT AND TRADING

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ABSTRACT

India is full of natural wealth on the one side in the world; on the other hand, this country is losing its natural form, which is being lost due to urbanization and industrialization. The more industrialization and urbanization, the more energy is consumed, which increases global warming, so to reduce this, it is absolutely necessary to understand the carbon trade and carbon emissions under the Kyoto Protocol.

Six greenhouse gases like carbon dioxide, methane, nitrous oxide, hydro fluorocarbons, perfluorocarbons, and sulfur hexafluoride are not only absorbed by trees but are converted to sugar, starch and cellulose.

For India, this business has good potential because it can be considered as a very favorable country for carbon trading, based on the growth in energy conservation, natural gas, alternative auto fuel and hydroelectric projects etc. On one hand, this trade will develop a clean forest, which will give protection to wild animals; on the other hand, the inhabitants will get wood as fuel and other types of forest produce.

On one side by reducing carbon emissions through carbon trading, various environmental problems such as holes in the ozone layer, global warming, sea level rise, toxicity of ground water, reduction in forests, melting of polar ice and from fading organisms to get relieve, then on the other hand, the economy of our country can also be strengthened.

Abstract No. 95

RIVER POLLUTION CAUSING HARMFUL IMPACT TO BIODIVERSITY AND AQUATIC LIFE

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ABSTRACT

The Rivers are facing challenges of maintaining its ecological integrity due to declining flow and degrading water quality due to contaminate water pollution. Declining the flow as well as water quality of the river's are adversely affecting the ecosystem functions. There is an urgent need to pursue and promote for conservation planning to protect freshwater biodiversity and river ecosystem. The ecosystem of a river consists of its natural environment, which includes biotic (living) interactions amongst plants, animals and micro-organisms, as well as abiotic (nonliving) physical and chemical interactions. Environment and ecosystem of Indian rivers have suffered from intense human intervention resulting in loss and degradation of their natural habitat and as a consequence many fresh water species including fish etc. have become heavily endangered, particular in Ganges basin where heavy fresh water demands are ever-increasing. River conservation and management activities in India suffer from inadequate knowledge of the constituent biota. The main causes of the loss of biodiversity in freshwaters are habitat degradation and fragmentation, exotic species introduction, water diversions, pollution, and global climate change impacts. Biodiversity which is a sum of all the different species of animals, plants, fungi, and microbial organisms living on Earth and the variety of habitats in which they live. Each species is adapted to its unique niche in the environment and biodiversiy is the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. Aquatic biodiversity can be defined as the variety of life and the ecosystems that make up the freshwater, tidal, and marine regions of the world and their interactions. Aquatic biodiversity encompasses freshwater ecosystems, including lakes, ponds, reservoirs, rivers, streams, groundwater, and wetlands. It also consists of marine ecosystems, including oceans, estuaries, salt marshes, seagrass beds, coral reefs, kelp beds, and mangrove forests. Aquatic biodiversity includes all unique species, their habitats and interaction between them. It consists of phytoplankton, zooplankton, aquatic plants, insects, fish, birds, mammals, and others. Aquatic biodiversity has enormous economic and aesthetic value and is largely responsible for maintaining and supporting overall environmental health. Humans have long depended on aquatic resources for food, medicines, and materials as well as for recreational and commercial purposes such as fishing and tourism. Aquatic organisms also rely upon the great diversity of aquatic habitats and resources for food, materials, and breeding grounds.

It is a high time to introspect and analyse the cost-benefits of the so called developmental activities in the name of flood control and water resource development in Ganga Basin. We should have minimum interference with our natural systems especially rivers which are not only our life line but have been cradle of our civilization.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 96

IMPACT OF CLIMATE CHANGE ON WATER RESOURCES OF MADHYA PRADESH

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ABSTRACT

Many riversoriginate within Madhya Pradesh and drain in the neighboring states due to the state's centrality and topography. There are five rivers major basins in Madhya Pradesh, namely, Gnga, Godavari, Tapti, Narmada and Mahi. The state is further divided in to the river sub basins namely Chambsl, Sindh, Betwa, Ken, tons (upper Ganga) son (lower Ganga), Narmada, Wainganga, Tapti and Mahi.

The state is also endowed with varied hydrological conditions resulting in varied ground water potential at different place. As per the latest ground water assessment carried out by CGWP net ground water availability of the state is 34.21 billion cubic meter (BCM) and is at an average 57 % of ground water development stage. Gross ground water draft in the state is 19.51 BCM.

The study indicated that the overall water resource vulnerability of the districts in Madhya Pradesh is projected to increase towards mid century under different scenarios as compared to the current condition. The projected increase in water resource vulnerability is attributed to increased exposure of drought weeks and higher seasonal crop water stress, low rechargerates and increased pressure on the ground water resource.

Keywords: Ground water, River basin. Ground water potential. Recharge and Hydrological condition.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 97

MEDICINAL PLANTS USED TO CURE TUBERCULOSIS IN RAGHURAJ NAGAR, SATNA (M.P.)

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ABSTRACT

Tuberculosis (TB) is principally a disease of poverty, with 95 per cent of cases and 98 per cent of deaths occurring in developing countries. Tuberculosis is a bacterial infection caused mainly by Mycobacterium tuberculosis (MTB). TB is the most common cause of death due to a single infectious agent worldwide in adults. It is a disease that has affected mankind since ancient times. It is contagious disease tuberculosis from very ancient times. Anti-TB allopathic medications have been prescribed to control symptoms of this disease but results into side effects like hepatitis, hypersensitivity reactions, nausea, vomiting etc. The use of herbal medicine becoming popular due to toxicity and side effects of allopathic medicines. Medicinal plants from Ayurveda (Indian traditional medicine system) and from foreignorigin have been successfully used to treat TB. The aim of this study is to highlight the work on anti-tubercularplants. The present paper involves various plant used in drugs responsible for anti-tubercular activity.

Abstract No. 98

INDIA AND CLIMATE CHANGE

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ABSTRACT

India's climate ranges from continental to coastal, from extremes of heat to extremes of Cold, from extreme aridity and negligible rainfall to excessive humidity and torrential rainfall. The rainfall in India shows great variation unequal seasonal and geographical distribution and frequent departures from the normal. Temperature variations are also notable in the Indian sub continent. The annual mean, maximum and minimum during the period 1901-2010 for India, shows a significant increasing trend. The Global climate risk index 2018 has put India amongst the six most vulnerable countries in the world, given that a sizeable population under poverty live in areas prove to climate shifts and in occupation that are highly sensitive, future climate change could have significant implications for living standards. There are immense financial requirements to fulfill the commitments. Yet, climate change has been given high importance in policy decisions. The Fifteenth Finance Commission Terms of Reference Outlined Climate change as an important aspect for consideration.

Abstract No. 99

BIODIVERSITY SCENARIO IN INDIA

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ABSTRACT

Biodiversity is the most compound attribute of our planet and it is the most crucial factor of concern. “Without biodiversity, there is no future for humanity,” says Prof David Macdonald, at Oxford University. Biodiversity is the variability among living organisms from all origins, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems. Biodiversity augments ecosystem productivity where each species, no matter how minute, all have a vital role to play. For example, a larger number of plant species means a greater variety of crops. Greater species diversity ensures natural sustainability for all life forms. In practice, the conservation of biodiversity indicates sustaining the diversity of species in ecosystems as we plan human activities that affect ecosystem health. Generally speaking, biodiversity is an estimation of the relative diversity among organisms present in contrasting ecosystems. India exhibits significant biodiversity. One of seventeen mega diverse countries, it is home to 7.6% of all mammalian, 12.6% of all avian, 6.2% of all reptilian, 4.4% of all amphibian, 11.7% of all fish, and 6.0% of all flowering plant species.India has two of the world's 18 'biodiversity hotspots' located in the Western Ghats and in the Eastern Himalayas (Myers 1999). The forest cover in these areas is very dense and diverse and of pristine beauty, and incredible biodiversity.

Abstract No. 100

IMPACT OF BIO FUELS ON HUMAN HEALTH

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ABSTRACT

The effects of bioenergy production on the environment tend to be context-specific. In relation to fossil fuels, biofuels (e.g., ethanol) can have lower human health toxicity and reduce GHG emissions. In addition, biofuels can locally increase evapotranaspiration (meaning that when water evaporates and passes into the atmosphere from soil and vegetation, it carries heat away from the land, causing local cooling) and, with improved soil carbon management and practices, also increase soil carbon sequestration Biofuel production that entails by-products such as sugarcane vinasse provide not only water for irrigation but also nutrients such as potassium, saving economic resources.

Thenegativeimpactscausedbyland-use change and agriculture intensification can be mitigated by agroecologicalzoning and the use of biodiversity-friendly agricultural management techniques Negative effects of bioenergy, forestry or food production, often related to conventional agriculture, can be avoided or reduced by conservation of priority biodiversity areas, recognizing the context specific effects, adopting location-specific management of production systems and ensuring adequate bioconnectivity across agrosystems to pristine areas at landscape levels In fact, the dispute between biodiversity conservation and the production of domesticated species should be viewed as interdependent. There is need to recognize that bioenergy expansion in monitored multi-functional landscapes can be beneficial. A significant amount of biodiversity is present on agricultural landscapes. It is impossible to provide full biodiversity protection only in conservation units like national parks and biological reserves even if they worked properly, which they usually do not. Thus, in real world, evolving agriculture within multi- functional landscapes is necessary to provide complementary biodiversity conservation. In addition, wild varieties and races of domesticated species are among them often dangered worldtax and depend on specialized managed environments to survive. Their conservation is necessary not only to provide genetic resources to draw from for the continual adaptation of their domesticated relatives to environmental changes such as new pathogens and parasites and even the challenges of global climate change but also to be part of ecological processes Multifunctional landscapes include those that provide both food and biodiversity shelter, whilst also conserving nutrient and water cycles Resource effectiveness is important throughout the chain. Developing them an agement strategies needed takes time and effort.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 101

AGRICULTURAL BIODIVERSITY- ESSENTIAL FOR SUSTAINABLE IMPROVEMENT IN FOOD AND NUTRITION SECURITY

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ABSTRACT

Agricultural biodiversity has hitherto been valued almost exclusively as a source of traits that can be used in scientific breeding programs to improve the productivity of crop varieties and livestock breeds. We argue that it can make a far greater contribution to increased productivity. In particular, a wider deployment of agricultural biodiversity is an essential component in the sustainable delivery of a more secure food supply. Diversity of kingdoms, species and genepools can increase the productivity of farming systems in a range of growing conditions, and more diverse farming systems are also generally more resilient in the face of perturbations, thus enhancing food security. Diversity can maintain and increase soil fertility and mitigate the impact of pests and diseases. Diversity of diet, founded on diverse farming systems, delivers better nutrition and greater health, with additional benefits for human productivity and livelihoods. Agricultural biodiversity will also be absolutely essential to cope with the predicted impacts of climate change, not simply as a source of traits but as the underpinnings of more resilient farm ecosystems. Many of the benefits of agricultural biodiversity are manifested at different ecological and human scales, and cut across political divisions, requiring a cross-sectoral approach to reassess the role of agricultural biodiversity in sustainable and secure food production.

Abstract No. 102

PESTICIDES ARE REDUNDANT FOR CROPS

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ABSTRACT

We have been dependant on fungicides, insecticides and other pesticides for decades for obtaining healthy, pest free crops. However, the present studies have shown that, in the field, pesticides are totally redundant. Studies have been conducted on coriander (*Coriandrum Sativum* L) and chickpea (*Cicer arietinum* L.) Coriander plants were inoculated with *Protomyces macrosporus* Unger that causes stem gall of coriander; Chickpea was inoculated with *Fusarium oxysporum f.sp. ciceris* causing wilt disease. The studies did not follow the ICAR recommendations for interplant distances but, instead, maintained greater distances. As a result, there was no incidence of disease in any of these crops. It was concluded that the greater interplant distances activated the plant immune system in each crop, resulting in immunity against their respective diseases. Productivity per plant was also higher. If this system is developed, loss of crops due to diseases can be dramatically reversed, without harming the humans who are, at present, forced to consume pesticide laden produce.

Abstract No. 103

FATTY ACID COMPOSITION OF HILSAILISHA AND ITS ANTIPROLIFERATIVE ACTIVITY ON HUMAN LUNG ADENOCARCINOMA IN VITRO

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ABSTRACT

Fish oils are a rich source of polyunsaturated fatty acids (PUFAs), and have been reported to have a suppressive effect on tumour growth. In this context, a preliminary study was designed to determine fatty acid composition of Hilsailishaand antiproliferative effect of total lipid of Hilsailishaon cancer cells grown *in vitro*. Two methods oflipid extraction viz. Folch *et al.* and Bligh and Dyer were compared in order to know the suitable method for maximum extraction. Fatty acid methyl esters (FAME) were prepared from the extracted lipid by Park and Goins method. Fatty acid profile of FAME was determined using Gas Chromatography and Mass Spectrometry (GC-MS). The results indicated that Folch*et al.* method is more suitable compared to Bligh and Dyer for the maximum yield of lipid. GC-MS analysis revealed the presence of approximately 15 fatty acids which include 57.4%saturated fatty acids, 5.9% monounsaturated fatty acids, 12.34% n-3 (PUFA) and 2.3% n-6 PUFA with 5.37% n-3/n-6 ratio of PUFA. Total lipid was tested for its anti-proliferative effect on A549 cell line via MTT assay, ROS and nuclear condensation analysis. Results showed that total lipid of Hilsailisha significantly reduced the cell viability of A549 cells ($P<0.05$) with concomitant increase of ROS generation and nuclear condensation in a dose dependent manner.

Abstract No. 104

STUDY OF VARIATION AMONG PHYTOPLANKTONIC DENSITY DUE TO SEASON CHANGE IN THE WATER OF RIVER KARAMNASA AT BUXAR, BIHAR

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ABSTRACT

In aquatic ecosystem, planktons are one of the most important biotic components which influence all the functional aspects of the aquatic body. Planktons are microscopic water organisms that float with the water movement. Among Planktons, phytoplanktons are the free floating, unicellular organisms that grow photoautotrophically. The density of phytoplanktons is highly influenced by variation in season as well as by hydrochemicalfactors.

The present investigation is done to demonstrate the variation among phytoplanktonic density due to season change in the water of river Karamnasa at Buxar, Bihar. For this purpose, the phytoplanktonic samples were collected from different sampling sites and quantitative analysis was done by dropping method of APHA (2005). The result conclude that the phytoplanktonic population exhibited a seasonal variation at all the sampling sites during the whole period of investigation. These show a Bimodelpeak ,one peak during may to July and another peak during December to January.

Abstract No. 105

STUDIES ON ECOLOGICAL SAFE DISPOSAL OF PLASTIC WASTE

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ABSTRACT

The utilization of plastic waste is of considerable social significance. The present paper details about the general process description for the maximal conversion of plastic waste into power and, hence, for the complete and ecological safe disposal of unsorted, unpurified mixed plastic waste.

There are many known processes for recycling polymers and polymer degradation products which have to take the material composition of the waste plastic into consideration to varying degrees. Material utilization is only possible to a limited extent. The recycling processes are divided into physical/thermal, chemical/thermal and chemical processes.

The physical/thermal processes comprising melting and reforming of the plastic waste and the problem has been solved by coupling a plasma pyrolysis process with a combined gas/steam turbine process, so that both processes together in their coupled form represent a highly effective "Plastic Driven Power Generator".

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 106

PRODUCTION AND CHARACTERIZATION OF FIBRINOLYTIC ENZYME FROM BACILLUS SPECIES

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ABSTRACT

Major cardiovascular diseases (CVD) are caused by the accumulation of fibrin into blood vessels. In India, CVD mortality rate is of 272 per one lakh population which is higher than global average of 235 per one lakh population. The accumulation of fibrin into blood vessel block the blood vessels by formation of blood clots which cause trouble in flow of blood known as thrombosis. Fibrinolytic enzymes are proteolytic enzymes that breaks the fibrin mesh to dissolve the blood clots.Currentlythrombosis is treated by three types of fibrinolytic enzymesurokinase, streptokinase and genetically modified tissue plasminogen activator(tPA). With vast development in field of biotechnology researcher found easier and cheaper microbial source for the production of different kinds of fibrinolytic enzymes. Research says that Bacillus spp. efficiently produce fibrinolytic enzymes with higher production rate. The proposed work is focused on isolation of fibrinolytic enzyme producing Bacillus strain from fermented Asian soybean foods, their characterization and optimization of growth condition to obtain the higher yieldof enzyme. The enzymatic assay to detect the enzyme activity can be done by using fibrin plate method. This work could be a solution in managing CVD diseases conveniently and efficiently that also in a lesser cost as compare to present fibrinolytic enzymes.

Abstract No. 107

USE OF BIOTECHNOLOGY IMPROVING IN HORTICULTURAL CROPS

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ABSTRACT

The requirement of fruits and vegetables is increasing proportionally with the increasing population in the country. The conventional plant breeding techniques have made considerable progress in the development of improved varieties, they have not been able to keep increase demand for vegetables and fruits in country. The biotechnology change economic progress in horticulture and will continue to play a crucial role in die 21st century. Biotechnology crop varieties have been adopted on a wide scale in some agronomic crops, but horticultural crops for commercialization High costs for research, development and regulatory approval combined with the small acreages planted and the diversity of varieties limit die potential for profitable applications of biotechnology for many fruits and vegetables, tree fruits and nuts, and nursery and landscape crops. Many genetically modified fruits and vegetables are already in the market in developed countries. Such opposition could discourage adoption of biotech products that are wanted by some consumers, can be profitable for growers and could reduce the environmental impacts of crop production. The major areas of biotechnology which can be adopted for improvement of horticultural crops are-Tissue culture, Genetic Engineering, Molecular Markers, Development of Beneficial microbes.

Abstract No. 108

COMPARATIVE ANALYSIS OF SEED GERMINATION PERCENTAGE AND SEEDLING OF LYCOPERSICONESCULENTUM, CAPSICUM ANNUM AND SOLANUM MELONGENAAFTERGAMMA RAY TREATMENT

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ABSTRACT

The experiment was conducted to study the effect of gamma radiation on seed germination percentage and seedling formation of three species of family Solanaceae, i.e. Lycopersiconesculentum, Capsicum annum and Solanum melongena. Locally collected cultivars of Lycopersiconesculentum, Capsicum annum and Solanum melongenawere treated with different doses of Gamma radiation like 10KR, 15KR, 20KR, 25KR and 30KR. Gamma rays are highly penetrating electromagnetic waves which were used as physical mutagen. There was great deviation in control and treated plants in their germination percentage and seedling formation at different doses in both R1 and R2 generation. The rate of seed germination percentage and seedling formation found to vary at different doses at different cultivars. However, the intensity of deviation was less in R2 generation than R1 generation. Solanaceae, comprises about 98 genera and 2700 species and have various economic and medical importance. There are several important species from their food uses to medical values. In this experiment Lycopersiconesculentum, Capsicum annum and Solanum melongenaare taken for comparative analysis of the effect of Gamma rays on seed germination percentage and seedling formation.

Abstract No. 109

ANTIOXIDANT POTENTIAL AND PHYSIOCHEMICAL PROPERTIES OF WHEY BASED PROBIOTIC DRINK

Madhubala

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ABSTRACT

The human gastrointestinal tract is colonized by a complex ecosystem of microorganisms. Intestinal bacteria are not only commensal but, they also undergo a symbiotic co-evolution along with their host. Beneficial intestinal bacteria have abundant and significant functions. e.g. they produce numerous nutrients for their host, prevent infections caused by intestinal pathogens, and modulate a normal immunological response. Probiotics are 'nonpathogenic' live microbial mono or mixed culture preparations which are applied to humans or animals in high enough doses; beneficially affect the host by improving the intestinal microbial balance and its properties. The most widely used bacteria considered as probiotics are Lactobacillus and Bifidobacterium.

In present study a total 12 isolates from curd were characterized on the basis of their microscopical, morphological and biochemical characteristics. These isolated bacteria were, subjected to various biochemical test and were also checked in selective media for strain identification. Probiotic properties were determined including tolerance to pH, temperature, Nacl, and auto- aggregation was observed. The combination of two Lactobacillusstrains (Lacidophillus and L.rhamnosus) were used as probiotic bacteria and inoculated in the milk Powder. Quality of the probiotic drink was checked by Ph analysis and microbial enumeration.

Abstract No. 110

CADMIUM TOXICITY INDUCED HISTOLOGICAL ALTERATION IN INTESTINE OF FRESH WATER FISHHETEROPNEUSTESFOSSILIS

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ABSTRACT

The aim of this paper was to assess the toxicity of cadmium induced histological alteration in intestine of freshwater fish Heteropneustesfossilis at Kanpur, India. Heteropneustesfossilis was exposed to sublethal concentrations of 0.5 and 1.0 ppm Cadmium for 60 days and intestinal histopathology was observed by light microscopy after staining with Haematoxylin-Eosine. Exposed fishes showed severe to mild superficial erosion of mucosa, dense lamina propria, chronic inflammatory cell infiltration as well as vacuolation. Necrotic and bulging conditions were also observed at the tip of villi which lead to rupture of villi. Broken serosa, vacuolated submucosal layer, vacuolated longitudinal and circular layer, mucosal layer completely damaged, vacuolated villi and columnar cells were completely collapsed to higher concentration. The severity of damage in the intestine was found to be dose and time dependent.

Abstract No. 111

APPLICATION OF BIOLOGICAL TECHNIQUES FOR THE TREATMENT OF ELECTRONIC WASTE

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ABSTRACT

E-waste or Electronic waste is one of the emerging problems at global level. E-waste is the waste which is easily found around us and increasing environmental pollution. As the technologies are emerging day by day on other hand the electronic waste is also emerging. The deadly chemicals and toxic substances present in electronic gadgets disposal (E-waste) is becoming an environmental and health nightmare. The proper treatment of E-waste is not held, which can cause severe damage to human health as well as the ecosystem. The E-waste problems are the major issues, which lead to thing about the various tools and techniques for proper recycling and disposal of each and every discarded electronic product. The E-waste contains metals like copper, alumininum, precious metals like silver, gold, platinum, palladium, and some hazardous metals like lead, mercury, arsenic, cadmium, selenium and hexavalent chromium. The recovery and treatment of E-waste can be done by the biological techniques. The microorganisms are the most common and precious biological tools, which are used for treatment of the E-waste. The transformation of hazardous waste to non-hazardous or less hazardous form is possible by techniques such as bioleaching, biosorportion, bioaccumulation, biotransformation, biomineralization and microbial enhanced chemisorptions of metals. Biological approaches using microorganisms, earthworms and plants are pivotal alternatives for the treatment or degradation of electronic waste. The genetically engineered microorganism can also be a future scope in degradation of E-waste. The best part of these techniques that they are pocket friendly. This study was carried out to enhance and apply the biological techniques for bioremediation of E-waste.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 112

EFFECTIVE UTILIZATION OF WASTE PLASTIC IN BITUMINOUS ROAD CONSTRUCTION

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ABSTRACT

World's second largest road network is found in India, it has about 41 lac kilometres of road. India's per capita plastic consumption rate is 11kg which generates about 9.46 million tonnes of waste, out of which 40% of the total waste is remained uncollected and the rest is dumped in the land filled sites or the natural environment. This whole scenario is creating the major environmental issues for the human civilization. This paper focuses on the effective utilization of this plastic waste for laying flexible pavement. According to the research carried out 1 ton of plastic waste can be used for laying 1 km of road which contributes to 10 lac plastic bags. In this process the aggregates are heated to the temperature of 165ºC then it is coated with the shredded plastic, this coating forms a better binding with the bitumen and the life is expected to increase by eight years. In this whole experimental process the plastic is not burnt which reduces the CO_2emission by great extent as many times the littered plastic waste is burnt by the people when the heap of waste is formed in any area. Burning 1 kg of plastic generates about 3 kg of CO_2, so by using the plastic waste in laying the pavements major issue of plastic waste degradation can be resolved.

Keywords: Waste plastic, Flexible Pavement, CO_2 emission.

Abstract No. 113

NANOTECHNOLOGY AND ITS APPLICATIONS IN PLANT DISEASE MANAGEMENT

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ABSTRACT

Nanotechnology is an important and highly evolving field with several new tools that have the potential to increase food production and protecting crops from various pests and diseases in a sustainable manner. It enables the controlled release of fertilizers, pesticides and herbicides; monitoring the environmental stresses and crop conditions by using various sensor systems; making plant tolerant to environmental stresses and attack of various pests and diseases by improving plant traits. Nanoparticles are biodegradable and tar get specific so it can be used as antimicrobial agents for managing plant diseases. Nanoparticles either act as protectants or as carriers to provide crop protection and its judicious application can increase crop productivity without disturbing the environmental health. Nanoparticles formation can be achieved by physical, chemical and biological processes. Nanotechnology application in agriculture is of extreme importance in dealing the several challenges like climate change, pest and pathogen evolution, nutrient shortage, plant growth etc. Disease diagnosis, pathogen detection, residual analysis may become more precise and quick by using nanosensors. Application of nanoparticles revealed significant suppression of several plant diseases, but minimum works has been done on these aspects and among them many are not applicable under field conditions, so there is an urgent need to carry out research studies on this issues to develop comparatively economic, safe, and ecofriendly nanomaterials that can be effective in long run.

Abstract No. 114

EFFECT OF AGRICULTURE INTENSIFICATIONONTHE COMMUNITY STRUCTUREOF EARTHWORM IN RAEBARALI DISTRICT, UTTAR PRADESH

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ABSTRACT

Variation in land use pattern especially agriculture intensification has shown impact on soil biodiversity. Present study was undertaken to understand the effect of agriculture intensification on soil biota with special reference to earthworm.Intensification of agriculture led to degradation of soil, to a level that it was a dead unit. Noearthworms were reported in this ecosystem. But reclamation of degraded land over a period of ten years resulted in recolonizing action by three species E.nicholsoni, E.waltoni and E.incommodus.Continues agriculture practice on reclaimed land over a period of more than 20 years results in loss of E.incommodus but E.nicholsoni and E.waltoni were better adapted as could be seen their improved abundance and biomass.The fallow which are left subsequent to crop harvest for soil to retain its fertility had the same species richness as agriculture, but andsame species composition as E.nicholsoni and E.incommodus.This suggests that the agriculture as well as change in land use alter the community structure of earthworm. The change in the functional guild with the change in land use pattern was attributing to the chemical/ physical condition of soil with reclaimed agro ecosystem having higher organic matter and low bulk density had maximum species where as degraded land use type soil lacked any earthworm. Even though the land use pattern represent the various level of degradation of ecosystem still the endemics predominate contradicting the statement that exotics dominate degraded/disturbed ecosystem.

Abstract No. 115

INCREASING THE YIELD OF BACTERIOCINSPRODUCED BYLACTOBACILLUS SP. USING SUSPENSION CULTURE PROCESS

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ABSTRACT

Bacteriocins are a heterogeneous group of antibacterial peptides produced by Lactobacillus sp. are heat- stable that greatly varies in their mode of action, molecular weight, genetic origin and shows wide activity spectrum. It has an inhibitory effect against gram positive bacteria. Bacteriocins can be classified as antibiotics, but they dif fer greatly from each other. The major difference between bacteriocinsand antibiotic is that bacteriocins confine its activity to strain of species producing it or especially to the strain of same species on the other hand antibiotic have wider activity spectrum. These antibacterial peptides are produced during the active phase of growth whereas antibiotics are usually secondary metabolites. Nowadays, among large number of Lactic acid bacteria (LAB), Lactobacilli has gained special attention due to bacteriocins production. In dairy industry a group that occurs naturally and has a long history in food for safe use are called Lactic acid bacteria (LAB). Bacteriocins causes no health issues and can be used as an alternative to chemical preservatives in food industry. According to recent studiesbacteriocins havelarge number of applications in dairy products as they can be easily degraded with the help of proteolytic enzymes. These antibacterial peptides have a potential to act against multiple- drug resistant pathogens by antibiotic targeting. Lactic acid is produced as the primary end product of carbohydrate fermentation by a diverse group of microorganisms. This lactic acid production along with bacteriocins shows a wide range of application in formulation of pharmaceutical products. In advancement polymerization of lactic acid to polylactic acid (PLA) gives highly versatile, biodegradable, aliphatic polyester obtain from renewable resources.

Abstract No. 116

EFFECT OF PELLETS OF FISH WASTE FERTILIZER PREPARED USING RICE HUSK AND TREE GUM ON THE GROWTH AND YIELD OF OKRA

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ABSTRACT

The current scenario of the environment is showing degradation that is progressing at an alarmingly rapid pace and at this rate the future of mankind on this earth will become a question mark very soon. Hence it has become necessary to look for sustainable measures to protect the environment at all levels. In agriculture, this can be achieved by switching over to organic farming eliminating the use of chemical fertilizers and pesticides. One such attempt involves the use of biofertilisers like Vermicompost, Vermiwash, Panchagavya and Fish waste Aminoacid (popularly known as Gunapaselam in Tamil). Gunapaselam is usually applied as a foliar spray to vegetable crops but in the present study,the use of Gunapaselam is in the form of pellets prepared using rice husk and tree gum which are eco-friendly and cost effective additives that help in bringing about slow release of nutrients. The pellets are applied to the soil in pots andtheir effect in bringing about growth enhancement of Okra in terms of yield and nutritive value is studied. This study will pave the way for usage of such pellets as biofertiliser for fruit trees and other horticultural crops that require slow and sustained release of nutrients.

Abstract No. 117

SOCIAL, ECONOMIC AND ENVIRONMENTAL IMPACTS OF RENEWABLE ENERGY

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ABSTRACT

Our cities needs to get planned according to the available resources. Using renewable form of energy will help us in creating policies for a sustainable future. Implementation of renewable energy technologies will definitely help in mitigating climate change. Also, it will ensure a certain reasonable extent of economic efficiency. Furthermore, it will promote job creation and local employment. Promotion and implication of renewable energy sources in the zone of Lucknow city and nearby rural areas will produce clean energy that is a must need in the coming decade for lessening the adverse impact of climate change on human health, wildlife and the environment.

Abstract No. 118

POPULATION GROWTH BIODIVERSITY LOSS

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ABSTRACT

Human population affects biodiversity on many levels and it is important to realize these effects on an individual, societal and government level and attempt to minimize them in order to ensure a future for humanity. Biodiversity is the term that is given to describe the variety of life on earth and the natural patterns it forms. Although many humans may not realize how important biodiversity is to them. Each day humans use 40000 species, most of which go totally unnoticed. Human population is recognized as an indirect driver of biodiversity loss, as human increased demands for resources like food, fuel, shelter, goods and services to meet the needs of a growing population will and undoubtedly exert more pressure on the components of biodiversity; ecosystems, genes and species. Conversion of habitats, over-exploitation of resources, pollution and climate change are four drivers which directly lead to biodiversity loss. However, continued population growth interacts with the direct drivers to create multiple pressure on biodiversity.
It is important as humans to realize the impact we have on biodiversity because without it, there would be no human existence.

Abstract No. 119

PERFORMANCE EVALUATION OF THERMAL POWER PLANTS IN INDIA USING MCDM TECHNIQUES

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ABSTRACT

India is the world's third-largest Greenhouse gas emitter accounting for 7% of the total global emission. The energy sector comprising of electricity production, manufacturing industries, transport sector and fugitive emission contribute to around 71% of India's total GHG emission. Thermal power plant in India accounts for about 64.4% of the total power generation capacity . Out of this, the contribution of coal-fired plant is 53.3%.Thermal power generating units are mega project, which require not only huge capital investment but also various resources like, fossil fuels and water. This creates an immeasurable &adverse impact on the environment in terms of pollutants such as SPM & RSPM which can disperse over 25kms radius and thus cause respiratory and other related aliment to human beings. In such circumstances, it becomes imperative to assess the relative performance of the thermal power plants so that benchmarking can be done and appropriate remedial measures can be taken up by average performing plants. Several studies have focused on evaluating the efficiency of these plants. A review of literature reveals that majority of these studies have considered very few parameters/indicators with focus on technical configuration of the plants, rather than economy and environmental considerations. It would therefore be worthwhile to evaluate the efficiency of thermal power plants with due consideration to economic and environmental indicator. This study deals with relative efficiency evaluation of thermal power plants in the state of UP, India using MCDM. Secondary data of various indicators/parameters such as quantity of water consumption per unit production, total quantity of coal required per unit production, oxides of Sulphur and nitrogen, O&M cost, Suspended particulate matter, number of workers and no. of days for which plants have not been in operation was collected from Uttar Pradesh Power Corporation limited and Central electricity Authority. Results reveal that the small gas-based plants are performing better than the coal-based plants. It is suggested that such studies be taken up for other plants so that key determinants of inefficient plants can be explored.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 120

EFECTIVENESS OF ELECTED FISH SP. TO CONTROL THE LARVA OF VECTOR BORNE ENDEMIC DISEASES

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ABSTRACT

Fishes have been widely used in relation to public health. The use of fish to control mosquito breeding sites is well documented in India and abroad. People have used larvivorous fishes in their natural habitat to control the Anopheles, Culexand Aedesmosquitoes from Nineteenth Century. There are many larvivorous fishes i.e. Colisa, Danio, Aplocheilus,Carassius, Gambusia, Poecilia(guppy) etc which show their efficiency to control the mosquitoes population by eating their larvae. When they are placed in different container habitats, decorative ponds and pools, they prey on mosquito larvae and effectively prevent mosquito development. Studies prove that Gambusiaaffinis is very effective in controlling different mosquitoes like Anopheles culcifacies, Anopheles stephensi, Culexquinquefasciatus and Aedesaegypti by feeding its larva.
The present study is based on to access the larvivorous potential or feeding rate and habit of two common freshwater fish species Gambusiaaffinisand Poeciliareticulataand their role in controlling the mosquitoes which are vectors of different endemic diseases. Since,Gambusia andPoecilia both are surface feeder and carnivorous in nature, so, selected it as very effective measure to control larva population. For this assessment, three moderate sizedaquariumfull of pond water, in which mosquito larvae are in abundant number were used. In first aquarium, Gambusiaand Poecilia both were introduced in same proportion. In the second aquarium, introduced only Gambusia and in the third aquarium only Poeciliawere introduced. Observed their feeding habit and larvivorous potential in one day, by adding supplementary fish food also. During observation, it was assessed that Gambusiahas much faster feeding rate than the Poecilia(guppy). One Gambusia feeds about 100-200 larvae per day, rather Poeciliafeeds 80-100 larvae per day. The observation shows one more thing that these fishes do not compete with each other, for their food and presence of supplementary fish food does not reduce the larval consumption. The study will help to reduce the use of insecticide.

Abstract No. 121

EFFECT OF CEMENT DUST POLLUTION ON GERMINATION AND GROWTH OF FLAX (LINUMUSITATISSIMUM)

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ABSTRACT

The present communication deals with Air pollution has been described as an additional stress on plants since they often respond to atmospheric contamination in the same way as they respond to drought and other environment stress. The role of air pollutants causing injury to plants either by direct toxic effect or modifying the host physiology rendering it more susceptible to infection. In severe case of pollution, the injury symptoms were expressed as foliar necrosis or completely disappearance of the plant. In that way the present research work carried out cement dust pollution on germination growth and biochemical of Flax (Linumusitatissimum). The cement dust artificially sprayed on the plant surface with different levels. All the morphological and biochemical were analyzed. Morphological parameters Root length, Shoot Length, and dry weight were inhibited in high dose of cement deposition when compare control plant. The highest amount of all biochemical content which present in control set and lowest one recorded in 25g/pot sprayed with cement dust.

Abstract No. 122

THE CONSIDERATION OF ECONOMIC FACTORS IN RELATION TO CHANGING ECOLOGY TO AFFECT THE EVOLUTION

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ABSTRACT

Since the advent of industrial evolution the ecology bothfor man and wildlife has progressively been threatened. The environment for biological evolution is being hampered but the economic evolution has been catching pace. These two factors have largely intercepted with the conducive condition for biological evolution and the shift of paradigm of struggle for existence in case of human population. The occidental dogma that nature is for exploitation by man has caused the condition deplorable enough. The call of time is for the Gandhian model of life and the attitude of respecting the concept of deep ecology as given by Naes. Hear the damages by unilateral consideration of economic growth vis a vis the sustainable development are briefly discussed.

Abstract No. 123

DIVERSITY OF PARTHENIUM HYSTEROPHOROUS AND ASSOCIATED WEEDS IN THE CHITRAKOOT REGION

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ABSTRACT

Parthenium hysterophorus L. (Carrot grass) is an annual herb of neotropical origin that now has a serious problem and pantropical distribution. It was first reported in India on 1950 at Pune (Maharashtra). This weed is very aggressive and commonly known as Congress grass and carrot grass in India. It has achieved major weed status in India within a relatively short period of time. P.hysterophorusis grown mostly in cultivated fields, fallow lands, pasture and along the roadsides. To analyse the distribution of weeds in Chitrakoot district a survey was performed in the holly place of Uttar Pradesh at Rajapur, Pahadi, Karwi and M.G.C.G.V. campus etc. During survey, the distribution of P. hysterophorus was measured in the agricultural lands, road side, river side and fallow lands. Moreover, the study also investigated the harmful effect of Parthenium upon native weeds flora in the Chitrakoot district. Quadrates method (1mx1m) was used to collect the data of distribution and population of weeds. In this investigation, total 14 weed species were recorded belonging to 8 different families and 14 genera. The data were recorded by Absolute density (m2), relative density (%), absolute frequency (%), relative frequency (%) and importance value (%) of Partheniumand other associated weeds. The finding reveals thatParthenium weed was most dominant species in comparison to others associated weeds. In conclusion, the Parthenium weed become a serious problem and replaces the entire native flora in the non-crop area. Due to no proper management and high growth rate, nowadays it becomes as super weed in the Chitrakoot district. So, the management of Parthenium weed requires the call attention from the Govt. Policy maker and proper quarantine inspection to conserve the native flora and fields crops to get maximum crop yield.

Total 14 weeds were recorded such as Partheniumhysterophorus, Cynodondactylon, Euphorbia heloiscopia, Chenopodiumspp, Amaranthusvirdis, Cyperusrotundus, Xanthium strumarium, Dactylocteniumaegyptium, Rumexcrispus, Coronopusdidymus, Argemonemexicana, Calendula arvensis, Poaannua, Sorghum halepense. Data revealed that importance value of 40.84% for Parthenium weed was recorded at fallow lands followed by40.31% at road side in Rajapur. Parthenium is most prevalent weed at all highest with 30.32% Average Importance Value (AIV).

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 124

BIOETHANOL: A RENEWABLE ENERGY SOURCE AND ITS UNTAPPED SUBSTRATES

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ABSTRACT

Bioethanol is providing a good alternative for depleting fossil fuels and a way to lower down the pollution. It is mostly produced from sugar and starch based raw material. Besides them there is a large array of lignocellulosic raw material which can be efficiently utilize for bioethanol production. Lignocellulosic feedstock release sugar from their cellulose content which is further used for bioethanol production.

Lignocellulosic material can be categorized as Agroindustry biomass residues which are wastes from agriculture and its related industries and generally include rice and wheat straw, wheat stems, maize cobs, rice husks, sugarcane bagasse, molasses, jute sticks, sugarcane tops, cotton stalks. Forestry residues include saw dust, wood chips, bark etc. Industrial waste from industries such as textile, paper and food industries. Domestic solid waste such as fruit and vegetables peals, waste food material etc. Several biotechnological approaches are available for the utilization of mentioned raw material to produce bioethanol.

Some other raw materials raw materials from day to day life or from our surroundings can also be promising for bioethanol production. Waste cotton cloths, expired food material such as bread, biscuit, cookies, sweets etc. The expired food material and old torn clothes are not easy to recycle or reuse. The sugar can be release from these stock materials by using different biotechnological methods, which can be further fermented into bioethanol. Effective and efficient pretreatment and hydrolysis strategies can be adopted so that enough amount of sugar will be available for fermentation process.

Abstract No. 125

SOCIO-ECONOMIC CHALLENGES OF AGRICULTURE , BIODIVERSITY & ENVIRONMENT

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ABSTRACT

Agricultural biodiversity is highly dynamic, being determined by a matrix of 'human' factors and feedbacks, in addition to underlying natural conditions. There is increasing realisation of the importance of agricultural biodiversity at the ecosystems level, as well as at the species and genetic level, and the agro-ecosystems approach to agricultural biodiversity conservation is widely promoted. Three factors strongly influence farmers' capacity, the existence and integrity of cultural diversity, access to genetic diversity and the level of exposure to external influences such as agricultural modernization or consumerist lifestyles. Agriculture has to face two main challenges in relation with biodiversity, i.e. to sustain agricultural biodiversity and ecosystem services provided by, and necessary for, agriculture, and to mitigate the negative impacts of agricultural systems and practices on biodiversity which is not used directly whether in the same or other ecosystems. To address these challenges, agriculture is required to take into account different drivers of change such as indirect drivers, e.g. demography (and the expected major growth world population and food demand), economy (e.g. globalization, market, and trade forces), socio politics (e.g. consumption choices, and policy, institutional and legal frameworks), and science and technology, direct drivers, e.g. climate change, natural resource availability (in particular water), overuse of agricultural chemicals, land-use changes. All these drivers contribute to the loss of biodiversity both in agricultural and other ecosystems, threatening human well-being. The major challenge for agriculture is to ensure food security, adequate nutrition and stable livelihoods for all, now and in the future, by increasing food production while adopting sustainable and efficient agriculture, sustainable consumption of resources, and landscape-level planning to ensure the preservation of biodiversity. Farmers are requested to both preserve biodiversity and contribute to meet the nutritional needs of a growing population. However, they do not control all factors involved including those related to agricultural policies, incentives , markets or consumption patterns, and therefore need support from government policy. The paper discusses about these challenges of biodiversity and possible strategies for sustaining the biodiversity .

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 126

IMPACT OF AIR POLLUTION ON AGRICULTURAL CROPS

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ABSTRACT

The impact of air pollution has been dramatically enough to directly and indirectly endanger crops through rising temperatures, rising sea levels, altering water and food supply with extreme weather prone shelter and population relocation In recent years, there has been a decline in interest in effects of air pollution on crops in the developed countries, doubtless largely due to over production. Developing countries are certainly not characterized by overproduction, with most countries desperately striving to increase their staple crop yields in order to feed rapidly expanding populations.Air pollution has traditionally been seen as an issue in Western countries, where most of the industry and motor vehicles that are responsible for the major pollutants residues. However, emissions of some of these pollutants are being reduced as a result of introduction of stringent controls in recognition of their adverse effects on health, vegetation, aquatic ecosystems and materials, as well as a decline of polluting heavy industries. The latter are in fact transferring to the developing world, where rapid industrialization is taking place in many countries but with poor emission controls. At the same time, in the developing world, motor traffic is increasing at a huge rate, often using old and poorly maintained vehicles that play a major role in contributing to air quality degradation.

Thus SO2 and NO2 are increasing rapidly in many developing countries. We know far less about the third ubiquitous pollutant, O3, because very little monitoring has been carried out in most countries, and most of this is restricted to the cities where concentrations are normally lower than in adjacent agricultural areas.

Abstract No. 127

CUMULATIVE EFFECT OF CALCIUM AND SULPHUR ON NITROGEN METABOLISM RESPONSE OF ROOTS OF BRASSICA L. SEEDLINGS UNDER ARSENIC TOXICITY

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ABSTRACT

Arsenic (As) accumulation inagricultural ecosystem severely affects both quality and quantity of crops. Investigations were carried out to assess the impact of individual as well as combined exposure of calcium (as calcium chloride: 12.0 mM Ca) and sulphur (as potassium sulphate: 3.0 mM S)on nitrogen metabolismstatus of arsenic (as sodium arsenate As1: 50 µM and As2: 100 µM As) stressed roots of Brassica L. seedlings.Results confirmed that both the doses of As significantly declined the contents of nitrate ($NO3^-$) and nitrite ($NO2^-$), and theactivities of $NO3^-$ assimilating enzymes: nitrate and nitrite reductase (NR and NiR), and $NH4^+$ assimilating enzymes: glutamine synthetase (GS) and glutamate synthase (GOGAT) of theroots of experimental plant;while under similar conditions, ammonium ($NH4^+$) content and glutamate dehydrogenase (GDH) activity showed reverse trend.Additionally, Ca and S supplementation alone as well as in combination to As stressed test seedlings ameliorated these parameters except $NH4^+$ content and GDH activity, which showed an obvious reduction under similar conditions, thereby suggesting their positive role in regulating nitrogen metabolism.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 128

PHYSICOCHEMICAL EXAMINATION AND QUALITY ASSESSMENT OF SURFACE WATER (POND) OF BIHATA BLOCK AT PATNA DISTRICT, BIHAR STATE, INDIA

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ABSTRACT

The present paper deals with surface water samples from pond were collected from six different locations situated in bihtablock and analyzed during December 2017 to march 2018. Twelve physicochemical parameters were analyzed and the results were compared with water quality standards prescribed by ISI 10500-91, WHO and CPHEEO In the present study, two water samples showed high EC, two water samples had high pH, one water sample had border-line turbidity, three sample showed high TA, two sample revealed high TH values indicating poor water quality and beyond maximum acceptable limit.

Abstract No. 129

WASTAGE OF COOKED FOOD IN INDIA

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ABSTRACT

Food is the basic necessity of life. For healthy life proper and balanced food is very important. Food grains were produced by the farmers with great efforts. Statistically half of all food is wasted worldwide, according to the British Institution of Mechanical Engineers (IME). The global volume of food wastage is around 1.3 billion tonnes. Large quantities of food are wasted and are being thrown away around the world, while a child dies every 5 seconds as a result of hunger.

According to the Oxford dictionary, waste is anything that has been discarded as no longer useful or required. But if we relook at the definition, "discarded as no longer useful" would mean that the resource has lost its value to you, not to the person next to you. India ranks 63 among 88 countries in Global Hunger Index. The number of hungry people in India has increased by 65 million more than the population of France. According to a survey by Bhook (an organization working towards reducing hunger) in 2013, 20 crore Indians sleep hungry on any given night. About 7 million children died in 2012 because of hunger/malnutrition. The objective of this article is to spread awareness to the masses in regard of the critical need to avoid food wastage so that every night, no stomach sleeps empty.

Abstract No. 130

MASS MULTIPLICATION OF ZYGOGRAMMABICOLORATA (MEXICAN BEETLE) USING LOW COST TECHNOLOGY AND ITS EFFECTIVE ROLE IN THE CONTROL OF PARTHENIUMHYSTEROPHORUS IN CHITRAKOOT (UP)

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ABSTRACT

Zygogrammabicolorata is an effective and eco-friendly biocontrol agent of very harmful and health hazardous weed, Partheniumhysterophorus. This beetle founds feeding primarily on the Parthenium weed. During survey, different stages of mexican beetle i.e. egg, grubs and adults were collected from the field. Mass rearing of this beetle was carried out in the laboratory of Biological Sciences, Mahatma Gandhi ChitrakootGramaodayaVishwavidyalaya campus and in the field cages. After the successful multiplication of the beetle on the Parthenium and their performance in consecutive yearsfor rearing or multiplying the beetle on low cost plastic tubs and cages were used. For this experiment large number of beetles (males and females) were collected from the field and reared in the plastic tubs with Parthenium plants which covered with mosquito net. In these tubs reared female laid eggs; and grubs were hatched in 2-3 days from the eggs and started feeding on the Parthenium leaves. After 7-8 days larvae become matured. Mature grubs stopped feeding and need soil to pupate. After 6-8 days, adult emerged from the pupa by making a circular hole. This experimental method is a cheap and low cost but cumbersome and requires continuous attention. Moreover 80-100 beetles were emerged within two monthsin one such plastic tub. Biological control of Partheniumhysterophorus by Z. bicolorata Pallister was studied in the laboratory and field cages. This Mexican beetle defoliated Partheniumplant by feeding leaves. Defoliation caused the reduced plant height and stopped the flower production. In the present experiment the result showed that the defoliation at the primary stage of Parthenium growth is more significant and effective. In the field cage and laboratory, this Mexican beetle caused 90% defoliation in 3 months and reduced the plant growth and flower production. On the basis of findings, it is suggested that the Zygogrammabeetle is a significant bioagents to defoliate and reduce the harmful weed Parthenium in localized area of Chitrakoot district.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 131

IMPACT OF INDIGENOUS LARVIVOROUS FISH IN THE POPULATION OF MOSQUITOES LARVAE IN DITCH WATER IN CHITRAKOOT, SATNA (MP)

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ABSTRACT

Mosquitoes are the member of order Dipteraand family Culicidae. There are more than 4500species of mosquitoes in the world included under 34 genera, but they mostly belong to threeparticular genera, Culex, Anaphelesand Stegomyia. The control of mosquitoes is veryimportantbecause they spread many types of disease in human beings and animals. Many poor people of India diedue to lack of prevention of mosquito. Many synthetic chemicals, natural insecticides and some biocontrol agents are being effectively used for the control of mosquitoes like oiling with petrol product, use of parisgreen, pytrthrum space spraying, larvivorous fish, invertebrate predator, nematode etc.

The larvivorous fish for the control of mosquito larvae was practiced from the beginning of the 19th century. Larvivorous fishes are the most important biocontrol agent for mosquito control. In India larvivorous fishes were first time used in 1904 at Mumbai city for malaria vector control An. stephensi. In the present studyindigenous fishes of Mandakini river like Punctius ticto and Labeo dero were collected and assessed for their larvivorous feeding behaviourthere are several like. Thesefish are collected by the random sampling method and dead fish were preserved in 10%formalin. Indigenous larvivorous fish are more efficient for mosquito control.

Abstract No. 132

ROLE OF BURNING THE CROP RESIDUE IN EMISSION OF AIR POLLUTANTS

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ABSTRACT

Agricultural crop residue burning contribute towards the emission of greenhouse gases (CO2, N2O, CH4), air pollutants (CO, NH3, NOx, SO2, NMHC, volatile organic compounds), particulates matter and smoke thereby posing threat to human health. Biomass burning is a global phenomenon and can be an important contributor to poor air quality worldwideBiomass burning includes forest fires, prescribed burning of savannas, and crop residue burning in fields. Typically, the biomass burning intensifies in late March, reaching a maximum in May. It represents a significant source of chemically and radiatively important trace gases and aerosols to the atmosphere thereby resulting in a large perturbation to global atmospheric chemistry In the present study a state-wise inventory of crop residue burnt in India and the air pollutants emitted was prepared using the Inter-Governmental Panel on Climate Change (IPCC) The major states where maximum amount of crop residues were burnt on farm are Punjab, Uttar Pradesh, Haryana and Maharashtra. Rice, wheat and sugarcane are the major crops whose residues are subjected to on farm. Large scale burning of crop residues from rice-wheat system of Punjab, Haryana and western Uttar Pradesh is a matter of serious concern not only for GHG emission but also for problems of pollution, health hazards and loss of nutrients.

Abstract No. 133

AGRICULTURAL WASTE (ARTOCARPUSHETEROPHYLLUS) AS A LOW-COST ADSORBENTFOR PB (II) REMOVAL FROM AQUEOUS/ SYNTHETIC WATER

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ABSTRACT

Present investigation focused ona novel agricultural waste material jackfruits (Artocar pushetero phyllus) leaves, which is acost effective, naturally and eco friendly in nature agro waste material act as an adsorbent for the removal of Pb (II).In present investigation, removal of Pb (II) from deminerlized water using new chemically modified adsorbent has been studied. Adsorption experiments were carried out to investigate the effects of adsorbent dose, pH, exposure time and initial metal oncentration on the adsorption process.The chemically modified adsorbents were also pointed out by its morphological and characterizations by using Fourier transform infrared spectroscopy (FT-IR), SEM etc. The aim of the present work is focus on the compatible adsorption behavior and identifies the adsorption capacity of the all chemically modified adsorbents.

Abstract No. 134

CYPERMETHRIN INDUCED TOXICITYTO THE CATFISH HETEROPNEUSTESFOSSILIS

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ABSTRACT

The present study deals with insecticide Cypermethrininducedtoxicity to the catfish Heteropneustesfossilis.It includespercent mortalities, 96 hours LC0 and LC50values of Cypermethrin duringdifferent seasons. For chronic study (30 days), 1/10th value of LC50concentration of Cypermethrin was selected. Acute and chronic exposure ofCypermethrinto the Catfish Heteropneustesfossilisshowed altered behaviour, increase in oxygenconsumption in LC0 group and depleted oxygen utilization in LC50group.Biochemical constituents like total glycogen, protein and lipids during differentseasons were altered severely. Histological changes in skin, gills; liver, male gonad and female gonad were considerable.

Abstract No. 135

IMPORTANCE OF BIODIVERSITY

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ABSTRACT

The variety of life on Earth,its biological diversity is commonly referred to as biodiversity.The number of species of plants,animalsand microorganisms, the enormous diversity of genes in these species,the different ecosystems on the planet(Earth),such as desert ,rainforests and coral reefs are all part of a biologically diverse Earth. which are our partners on this planet ,give the world a beautiful place to live.A healthy biodiversity provides a number of natural servicesfor everyone. Ecosystem Services such as protection of water resources,soils formation, quality improvement and protection, for protection of our planet, for existence of the species, nutrient storage and recycling, pollution breakdown and absorption, Recovery from unpredictable events,maintenance of ecosystems, contribution to climate stability, reduction of risk ofclimatic changes, for environmental cleanup and so on.Biological, resources, such as –Food,Wood product medicinal resources and pharmaceutical drugs, Diversity in genes, species and ecosystems.Social benefits,such as- Research,education and monitoring, Ethical values, cultural values, economic growth,Recreation and tourism.This is quite a lot of services we get for free. Finally, biodiversity plays important rolein the presence multiplication and for existence of the biological speciesin the nature which are its important components and key elements for better and healthy environment.It also performing role in conservation of natural resources.

Abstract No. 136

PRECISE NUTRIENT MANAGEMENT IN BANANA CROP

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ABSTRACT

The precise nutrient management is the science of using advanced, innovative, site-specific technologies of applying 'right source of nutrient' at 'correct time' in 'correct-amount' of nutrient at 'right-place' and in 'right-manner' to manage spatial and temporal variability in Latent nutrient supply to the soil. Precise nutrient management is one of the most important tools of the precision agriculture.It enhances productivity and profitability of both agriculture and horticulture production system as well as conserving natural resources efficiency. The Soil test based nutrient management recommendations is used for improving banana fruit production but have not improved the nutrient use efficiency in the soil where we want to stablish the banana orchard. The current research is oriented more towards synchronizing nutrient supply with plant needs. The chiefly and farmers friendly equipment like leaf colour chart are very popularamong farmers and would become honorableequipment for all the farm as and when farmers have to give full money of the nitrogen fertilizers.Banana crop is heavy feeder of nutrients. Its roots spread superficially and absorb large amounts of nutrients from the soil. Precise nutrient management provides an approach for feeding in banana crops with nutrients as and when needed. Precise nutrient management exploits indigenously and spatially available nutrients within banana orchards requiring differential fertilizer treatments in patches and has potential to enhance banana orchard efficiency. Variable rate of fertilization using Geo-statistical analysis and GPS-based mapping can save 38% to 40% fertilizer as compared to the uniform rate application.Advance techniques such as drip irrigation, remote sensing, optical sensors, and leaf colour chart, has tremendous potential in precise nutrient management.It also stimulates proper shoot and root growth in plants. The application of nutrients and irrigationwater by drip fertigationand foliar nutrition along with precise management practices is beneficial for the efficient use of nutrients by

Abstract No. 137

NANOINFORMATICS PLAY FOR NANOMEDICINE

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ABSTRACT

Nano-informatics has recently emerged to address the need of computing applications at the nano level. In this regard, the authors have participated in various fields initiatives to identify its concepts, foundations and challenges. While nanomaterials open up the possibility for developing new devices in many industrial and scientific areas, they also offer breakthrough perspectives for the prevention, diagnosis and treatment of diseases. We analyze the different aspects of nano-informatics and process to five research topics to help catalyze new beam of research and development in the area, particularly taerget on nano-medicine. We also encompass the use of informatics to further the biological and clinical applications of basic research in nano-science and nanotechnology, and the related concept of an extended "nanotype" to coalesce information related to nano-particles. We suggest how nanoinformatics could accelerate developments in nanomedicine, similarly to what happened with the Human Genome and other –omics projects, on issues like exchanging modeling and simulation methods and tools, linking toxicity information to clinical and personal databases or developing new approaches for scientific ontologies, among many others. Although the use of data of integrated parameters are used in the level of nanoengineered species are directed towardsthe analytical format of use of nanoparticles for contaminated various site remedial objectives, exploration of toxicity in various soil microbes.Nanobioremediation that integrates nanoparticles and bioremediation proposed engineered nanoparticles is rapidly increasing, safety assessment is also important for the beneficial use of new nanomaterials. Considering that the experimental assessment of new nanomaterials is costly and laborious, in silico approaches hold promise. Several major challenges in nanotechnology indicate a need for nanoinformatics. New database initiatives such as ISA-TAB-Nano, caNanoLab, and Nanomaterial Registry will help in data sharing and developing data standards, and, as the amount of nanomaterials data grows, will provide a way to develop methods and tools specific to the nanolevel. In this review, we describe emerging databases and tools that should aid in the progress of nanotechnology research.

Abstract No. 138

EFFICACY OF SOME VEGETABLE OILS IN THE CONTROL OFCALLOSOBRUCHUSCHINENSISL. INSTORED GREEN GRAM

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ABSTRACT

Insects are destructive pests of many crops not only in the field but also during storage. Pulse beetles are widespread insect pest of pulses. Callosobruchuschinensis L. is one of them. It may attack in the field as well as in storage. Adult female beetle lays eggs on the seeds or on the pods in field and sometimes on the surface of the container in storage condition. Hatching larvae bore inside seeds and spend their life within it. Some vegetable oils are good source of bioactive chemicals and can be used as an alternative to synthetic insecticides, as they are biodegradable and safe to non-target organism. Keeping this in view, vegetable oils viz., sunflower (*Heliunthusannus* L.), mustard (*Brassica juncea* Cross), groundnut (*Arachishypogaea* L.), sesame (*Sesamumindicum* L.) and soybean (*Glycine max* L.) were evaluated at the rates of 5, 7.5, and 10 ml.kg-1 of seeds (0.5, 0.75 and 1% v/w concentrations) against the pulse beetles (*Callosobruchuschinensis* L.).as protectants of green gram seeds. Effects on progeny emergence, loss in seed weight, and germination were measured up to 66 days after treatment. Adult emergence was completely inhibited and the seed loss was minimized by groundnut oil at 1% up to 66 days after treatment.

Abstract No. 139

COLLECTION AND IDENTIFICATION OF BUTTERFLY SPECIES IN JANTA COLLEGE BAKEWAR CAMPUS ETAWAH, (UP)

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ABSTRACT

Butterflies are the most beautiful and colorful creatures on the earth and have a great aesthetic value. Butterflies are important bioindicator which should be protected to conserve the biodiversity and environment. The survey was conducted from January to May in three habitats with in and around the campus like garden, scrub jungle, hostel areas. The maximum diversity and abundance was observed in garden area. Total 7 species of butterflies were recorded at various sites, which belonging to three families viz..,Pieridae, Papilionidae, Nymphalidae. This study revealed that Nymphalidae was most dominating family with a highest number of species in out of 7 species.

Abstract No. 140

BIODIVERSITY OF ZOOPLANKTON SPECIES IN A PERENNIAL POND AT KHOP TAAL OF CHHATARPUR REGION IN MADHYA PRADESH, INDIA

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ABSTRACT

Zooplanktons are supporting the biologically importance of water ecosystems, they are major mode of energy transfer between fishes and other aquatic animals. Zooplankton biodiversity in Kooptaal, Chhatarpur District (latitudes 24º06' to 25º20' N and longitude 78º59' to 80º26' E) Madhya Pradesh, India. Study of Zooplankton biodiversity for a period of May 2016-June 2017 in seasonally (Rainy, Winter and Summer). This pond was also utilized for the culture of Trapa and fishes. The sample was seasonallyanalyzedqualitative and quantitative distribution of species. During the study period, totally 13 species of zooplankton were recorded of classes Maxillopoda three species, Branchiopoda, Monogononta and Oligohymenophorea two species, Tubulinea, Heliozoa, Crustacea and Eurotatoria one species was observed. The population wise Maxillopoda class was dominant followed by Branchiopoda, Monogononta, Oligohymenophorea, Tubulinea, Heliozoa, Crustacea and Eurotatoria classes.

Abstract No. 141

AGRICULTURAL WASTE GENERATION AND MANAGEMENT: A STUDY

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ABSTRACT

Agricultural waste is the material obtained due to crop production or from plant growth. Agricultural wastes are non-product outputs of production and processing of agricultural products that may contain material that can benefit man but whose economic values are less than the cost of collection, transportation, and processing for beneficial use. Agricultural development is usually accompanied by wastes from the irrational application of intensive farming methods and the abuse of chemicals used in cultivation, remarkably affecting rural environments in particular and the global environment in general. Generally, agricultural wastes are generated from a number of sources notably from cultivation, livestock and aquaculture. These wastes are currently used for a number of applications through the '3R' strategy of waste management. The waste produce from animal waste or from crop residues called biomass which has an interdependent relationship with ecosystem from production to disposal and has physicochemical properties.

Abstract No. 142

INTERACTION STUDIES OF BIOFERTILIZERS AND DIFFERENT ENVIRONMENTAL STRESSES ON LEGUME PLANTS

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ABSTRACT

Current soil administration procedures are for the most part subject to inorganic component based composts, which made a genuine danger human well being and condition. The misuse of advantageous microorganisms as a biofertilizer has turned out to be fundamental significance in agriculture sector part for their potential job in nourishment security and maintainable yield generation. The eco-accommodating methodologies motivate an extensive variety of utilization of plant development advancing rhizobacteria (PGPRs), endo-and ectomycorrhizal parasites, cyanobacteria and numerous other helpful microscopic organism prompted enhanced supplement take-up, plant development and plant resistance to abiotic and biotic pressure. The present survey featured biofertilizers mediated crops utilitarian characteristics, for example, plant development and efficiency, supplement profile, plant barrier and assurance with extraordinary accentuation to its capacity to trigger different development and resistance related qualities in flagging system of cell pathways to cause cell reaction and in this manner edit enhancement. The learning picked up from the writing assessed in this will assist us with understanding the physiological bases of biofertilizers towards maintainable farming in lessening issues related with the utilization of synthetic substances manures.

Abstract No. 143

PRODUCTION AND APPICATIONS OF LIGNINOLYTIC ENZYMES PRODUCED BY TRAMETES HIRSUTA

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ABSTRACT

White-rot Fungus Trametes hirsuta is known to produce laccase, lignin peroxidise and manganese peroxidase which belong to a group of ligninolytic enzymes. Ligninolytic enzymes have been produced by both submerged and solid state fermentation. However, solid state fermentation has proved to be better for production of liginolytic enzymes by fungi. These enzymes are known to degrade a complex polymer lignin. Lignin and lignin derivatives like veratryl alcohol and xylidine also induce production of these enzymes. Lignin degradation is visualized using Scanning Electron Microscopy. Gualicol, veratryl alcohol and ABTS are some inducers of these enzymes. Mn2+ induces production of lignin peroxidise and manganese peroxidise. Cu+ induces production of laccase. The current trend is to use agro-industrial waste as substrate for enzyme production. The aim to choose such substrates is to ensure that it contains significant amount of carbohydrates and inducers of enzyme synthesis. Lignocellulosic wastes like nut shells, wood, leaves, baggase, fruit and vegetable peels have been used for production. These enzymes are quantified using respective assays. These enzymes have various applications in dye decolourization, biodegradation, bioremediation and biotransformation. Ligninolytic enzymes are used in pulp and paper industries and food processing industries. Out of all these sectors, degradation and removal of dyes by ligninolytic enzymes has gathered more attention.

Abstract No. 144

AIR POLLUTION TOLERANCE INDEX OF PLANTS ALONG NATIONAL HIGHWAY IN KANPUR CITY, UTTAR PRADESH

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ABSTRACT

Air quality in major cities of developing countries has deteriorated sharply due to rapid increase in traffic and vehicular emission with reduction of urban vegetation cover. Vehicular emission is considered to be a major source of air pollutants. Release of such pollutants into the atmosphere not only deteriorates the ambient air quality, but also poses health risk to the people particularly those suffering from respiratory and cardiovascular illness. To reduce the impact of toxic airborne pollutants, environmentalists and policy makers have emphasized the need of perennial green belt around the highway area of Kanpur. Green belts provide the natural way to reduce the atmospheric pollution by capturing particulate matter, and absorbing gaseous pollutants. Green vegetation around highway can provide a cost-effective and eco-friendly techniqueto mitigate air pollution. Sensitive and tolerant plants against air pollution can be identified by evaluating their air pollution tolerance index (APTI) value. In this study the susceptibility level of plant species to air pollution four parameters on which APTI depends, namely ascorbic acid content, total chlorophyll content, relative water content, andleaf-extract pH, were determined and computed together in a formulation signifying the APTI of plants. APTI values of plant species growing along the highway in Kanpur city, Uttar Pradesh, India were estimated. An APTI score of ≤ 11,12–16, and ≥ 17 classifies the tree species as sensitive, intermediate, and tolerant towards air pollution respectively. Plants with a high index value were tolerant to air pollutants. On the basis of their indices, different plant groups are proposed for the formation of green belt and other plants will be used as a bio-indicator of air quality.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 145

STUDIES ON SILICON SOLUBILIZING BACTERIA IN SUGARCANE

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ABSTRACT

Silicon solubilizing bacterial works to solubilize insoluble form of silicon in soil for plant uptake as highest amount of silicon is absorbed by sugarcane crop. It also increases the soil fertility and augments the plant defence mechanism. The present investigation was conducted at Soil-Plant-Water Analysis and Microbiology Lab, ICAR- Indian Institute of Sugarcane Research, Lucknow Studies. Total of 62 bacterial strains were isolated from the root rhizosphere soil of sugarcane. Out of these, only 14 bacterial strains were capable to solubilize silicon from the soil. Amongst these, 4 isolates viz., SSB-27, SSB-32, SSB-37 and SSB-38 were capable of solubilizing the potassium, phosphorus and zinc from the soil. Other morphological, cultural and plant growth promoting attributes were also studied like, Soil pH, EC, Antagonism Test against *Fusarium moniliformae*, Indole Acetic Acid production, Soil texture analysis, exchangeable potassium, extractable Phosphorus, Available boron and sulphur estimation, organic carbon, Microbial biomass carbon and microbial biomass nitrogen. These strains will be further investigated for production of biofertilizer in the future.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 146

EFFECT OF MELATONIN ON PULMONARY FIBROSIS IN RAT

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ABSTRACT

The Pulmonary fibrosis (PF) is very harmful challenge in present erait is fatal for lungs activity. The Melatonin affects the numerous molecular pathways; also it's react anti-oxidants and anti-inflammatory action that reduces excessive fibrosis.The circadian rhythm increase Melatonin levels may be beneficial non- invasive therapeutic approaches for the anti-fibrosis and protection are on physiology. The Melatonin has anti-fibrotic effect and is also an immune-stimulator. It is non-invasive tool for the treatment of respiratory disease. The Melatonin and pulmonary fibrosis is associated with infection, inflammation and oxidative stress and the use of anti-oxidants contribute to the inhibition and control of fibrosis expansion. This is the mediated by receptor-independent functions. The Melatonin reacts with the immune system by affecting cytokin production in immuno-component cells and also affect the defense system of body.

Abstract No. 147

MEMBRANE BIO-REACTORS TECHNOLOGY FOR WASTEWATER TREATMENT: RECYCLE AND REUSE

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ABSTRACT

The demand for high quality effluent has put the MBR technology a step ahead of conventional ASP in recent times. Back in 1980s, when the technology was in its initial stages, it seemed unlikely for MBR toever become a commercially viable water treatment technology because of several factors in which the high installation capital was the most prominent compared to conventional water treatment methods. The MBRprocess utilizes the well-established activated sludge process, with one modification done in its structure, that is replacement of conventional final settlement with an ultra-final membrane. Due to adsorption of Soluble and particulate materials onto and into the membrane, the MBR filtration performance inevitably reduce with filtration time. In this investigation, it was attempted to decide the proficiency of the MBR treatment plant regarding its physical, compound and natural qualities of influent and emanating wastewater. The effluent efficiencies of treatment plant (Turbidity>99%, TSS>98%, BOD>96%, COD>93% and MPN>99%) is high in comparison with conventional treatment plant. MBR is the most essential strategy in accomplishing the target of reuse of wastewater in a period of water shortage in numerous parts of the world.

Abstract No. 148

PHYSICO-CHEMICAL PARAMETERS OF BETWA RIVER IN BUNDELKHAND REGION

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ABSTRACT

Water is the cradle of life. Water has unique physico-chemical properties in the form of its desirable and acceptable range of water parameters. These parameters are very essential for survival of any living organism. In current scenario many anthropogenic activities accelerates the aquatic pollution and this undesirable threat makes the serious disturbance in aquatic biota, which ultimately disturb our aqua-ecosystem. The present study was carried out during the period from July 2017 to June 2018. The different physico-chemical parameters like Temperature, Transparency, Turbidity, pH, EC, DO, TDS, TSS, TS, BOD, COD, Ca, Mg, Alkalinity, Nitrates, Phosphate, Hardness, chloride were analysed to assess the water quality status of different sampling sites selected on Betwa river in Bundelkhand region.

Abstract No. 149

BIOPESTICIDAL EFFECT OF LEAF EXTRACT OF PARTHENIUM (PARTHENIUM HYSTEROPHORUS L.) A. JUSS ON GROWTH PARAMETERS AND DISEASES OF TOMATO

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ABSTRACT

The present investigation deals with potential use of Parthenium (*Parthenium hysterophorus* L) A. Juss aqueous leaf extract on the growth, yield and disease control of a common vegetable plant tomato (*Solanum lycopersicum* L.). The Ghritkumari extract increased shoot height, number of branches, number of leaves, and number of buds, number of flowers and number of fruits of tomato plant over controls in different treatments. Numbers of diseases were calculated as percentage and disease/plant. The percentage of reduction of disease was calculated after the spray of Parthenium extract on plants. Parthenium extract was found ef fectively in controlling canker (50.32%), early blight (55.12%), wilt (59.45%), leaf spot (55.48%), fruit spot (41.93%), blossom end rot (40.86%) and sun scald (25.61%) in comparison to controls under field condition. Thus, biopesticides can contribute in reducing use of chemical pesticides and subsequently minimize its hazards to the environment and human health.

Abstract No. 150

STUDIES ON PHYTOPLANKTONS ECOLOGY IN GOMATI RIVER AT JAUNPUR (U.P.), INDIA

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ABSTRACT

The phytoplankton forms a very important component of aquatic vegetation, occurring in all kinds of water bodies and consequently enjoying a worldwide distribution. The present study is going to centralize on the Gomati river of Jaunpur district in Uttar Pradesh in year 2013. The phytoplankton were collected, counted and identified by using the method suggested by APHA (1985), Prescott (1969) and fresh water biology. Although, there are a number of major groups of phytoplankton, those relevant to the present study are Bacillariophyceae, Chlorophyceae, Cyanophyceae and Euglenophyceae were identified. 10 species of phytoplankton have been collected from various freshwater habitats in the Out of 28 genera Bacillariophyceae (12), Cyanophyceae (05), Chlrophyceae (09), Euglenophyceae (02). The study among all these phytoplankton Bacillariophyceae was recorded as a dominant class in Gomati river at Jaunpur. Result shows that diversity of species Bacillariophyceae 42.85%, Cyanophyceae 17.85%, Chlorophyceae 32.14%, Euglenophyceae 7.14% were composed.

Abstract No. 151

PLANT BASED ANTI-CANCEROUS SUPERFOODS, BOOSTING IMMUNITY: A SYSTEMATIC REVIEW

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ABSTRACT

Superfood is a Nutritional term and a marketing tool for selling specific foods, dietary supplements, foods with selected food additives, promising an enhancement to health with supposed health benefits as a result of some part of its nutritional analysis, or its overall nutrient density. Following cardiovascular disease, cancer is the second leading cause of death in most affluent countries. Scientific evidence highlights on the fact that high intake of cancer-fighting foods like vegetables, fruit, calcium-rich foods and fiber was associated with a decreased risk of colorectal, lung and breast cancers, while red and processed meat intake, alcohol intake, combined with restricting intake of saturated and trans fats and added sugars, and maintenance of a body mass index (BMI)<25 and abdominal obesity were associated with an increased risk of cancer. Being physically active and obtaining enough vitamin D also helped lower cancer susceptibility. Promising potential naturally occurring super foods such as berries, green leafy vegetables, cruciferous vegetables, organic spices and hurbs, citrus fruits, Cultured dairy product, Traditional teas, mushrooms, Healthy unrefined fats and oils containing therapeutic properties to boost immunity and fighting against cancer. Thus there is a need for the search of such natural-based anticancer therapies, explores the antineoplastic potential of these chemotherapeutic cancer superfoods and highlights the metabolic and molecular targets of these potential anti-cancer superfoods.

Abstract No. 152

ADSORPTIVE REMOVAL OF ARSENIC AND FLUORIDE FROM WATER BY USING ELECTROSPUN NANOFIBER

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ABSTRACT

Arsenic and fluoride contamination in water is a widespread problem globally due to increasing industries. Arsenic poisoning leads to fatal diseases such as skin and internal cancers, whereas excess fluoride causes fluorosis in teeth and in bones. To reduce this contaminant in water by adsorption technique, Iron oxide (IO) Nano particle along with activated charcoal (AC) Nano particle embedded with polymer Polyacrylonitrile (PAN) dissolved in ethylene was electrospun to form nanofibers. In Nanofiber, IO/AC composition is 50/50, 40/60, 30/70, 20/80, 10/90 and vice-versa for AC/IO composition that makes 9 solution for nanofiber. The arsenic and fluoride solution of 10ppm is prepared.

The basic concept of electro spinning is to provide high specific surface area for adsorption of contaminants of water. In this study the adsorption of contaminant depends on pH of contaminated water, Contact time and different proportions of Iron oxide and Activated charcoal in nanofiber.

Analysis of treated water sample was done by Atomic Absorption Spectrometry (AAS).

Abstract No. 153

THE STUDIES OF HYDROGEN BONDING AND NON COVALENT INTERACTIONS IN SOME CYCLIC AND NONCYCLIC SUPRAMOLECULAR ASSEMBLY

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ABSTRACT

There are many supramolecular metal containing systems, aiming at understanding the intermolecular interactions holding three dimensional arrays of inorganic and organometallic building blocks. Among the intermolecular interactions, hydrogen and hydrogen bonds have attracted increasing interact due to their potential capabilities. The most of metallo superamolecular assembly studies related to electrophilic halogen atoms concerns the crystal packing analysis of metal containing species with different halogen substituted ligands. The intermolecular bond in such system may consist of ion-pairing, hydrogen bonding, hydrophobic or hydrophilic, host guest, pi- stacking and donor acceptor interaction.

Abstract No. 154

RURAL ECONOMIC DEVELOPMENT THROUGH FRESH WATER PEARL PRODUCTION IN BUNDELKHAND REGION

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ABSTRACT

The demand of pearls in market is rising day by day but their supplies from nature have reduced due to over exploitation and pollution. Fresh water Pearl production research techniques was first carried out in India in 1987 by Central Institute of Fresh water Aquaculture Bhuwneshwar, Orissa. They started it with identification of suitable local pearl mussel species, defining appropriate surgical implantation procedures, developing pre and post care procedure and captive pond culture of mussels. In recent years Bihar , Gujarat, Maharashtra, Madhya Pradesh and Uttar Pradesh have also initiated commercial production of fresh water pearls.

Bundelkhand region has vast resource of fresh water with abundant distribution of qualitatively rich pearl mussel fauna. Bundelkhand fishermen, farmers and small entrepreneurs who are involved in fish farming business can also utilize these techniques of pearl production for increasing the income of the rural communities and their upliftment. In view of this the present study was carried out for producing designer pearls in *Lamellidens marginalis.*

Abstract No. 155

BIOFUELS: MICROBIAL HYDROLYSIS OF CELLULOSIC RAW MATERIALS FOR PRODUCTION BIOETHANOL (CELLULOSIC ETHANOL)

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ABSTRACT

Cellulosic ethanol (Bioethanol) is a promising alternative renewable energy source for the limited crude oil. Ethanol is generally produced from some common crops such as sugarcane, potato, cassavaand corn. Cellulosic biomass can be utilized as a nonconventional raw material to produce ethanolCellulosic ethanol production and commercialization may be helpful to control the prices hike of conventional fuels and pollution also. Cellulosic ethanol production has involved mainly two processes, first one is hydrolysis of cellulose raw materials to produce reducing sugars and second one is fermentation of the sugars to ethanol. The cost of cellulosic ethanol is relatively high based on current technologies, and the main challenges are the low yield and high cost of the hydrolysis process. Parameters optimization for microbial hydrolysis of cellulosic raw materials is a considerable effort made for research. *Trichoderma viride*, *Trichoderma reesei* and *Aspergillus nigerare* most efficient microbial strains used for hydrolysis of cellulosic raw materials at optimized parameters. Pretreatments of cellulosic raw materials are required to remove lignin and hemicelluloses, it can significantly enhance the hydrolysis of cellulose. Simultaneous saccharification and fermentation effectively removes glucose, which is an inhibitor to cellulase activity, thus increasing the conversion rate and yield of cellulose hydrolysis.

Abstract No. 156

STUDY OF NUTRIENT VALUE, ANTIOXIDANTS AND PHYTOCHEMICAL PROPERTY OF PUMPKIN (CUCURBITA PEPO)

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ABSTRACT

Pumpkins are generally good source of different types of nutrients and antioxidants. (K. Sathiya Mala *et al*, 2016) found that peel and pulp which generally contain poly phenols and antioxidants can be used as food supplements in different cooked foods. This study would be based on pumpkin seeds that show high antioxidant activity. Antioxidant nullifies the harmful activity of free radicals and many artificially produced antioxidants have been used in food industry. But artificially produced antioxidants are carcinogenic. So it is very essential to use natural antioxidants. With the help of this study the antioxidant activity as well as nutrients would be found. Vitamin E, zinc, potassium, magnesium, calcium, sterols, tocopherol and squalene are present in pumpkin seeds which can be determine by phytochemical screening. DPPH assay would be used for radical scaving activity andpolphenols can be measured by using Folin-Ciocalteu method. Aqueous extract and methanolic extract of pumpkin seeds would be used for performing this study. I expect that methanolic extract of pumpkin seed show high antioxidant activity as compared to aqueous extract.

Abstract No. 157

RESPONSE OF GASTRIC TISSUE COMPONENT OF CHANNA PUNCTATUS TO EXPOSURE TO UREA CONTAINING ENVIRONMENT

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ABSTRACT

The Gastric Histopathology of sections of *Channa punctatus*, prepared by Paraffin wax method was studied. The fish exposed to 100,200& 500 PPM of Urea (a nitrogenous fertilizer). There were definite signs of necrosis that appeared with the passage of time as the exposure was continued for 15 days .The higher concentration of urea caused an earlier appearance of necrosis of superficial epithelial lining of stomach. There was an infiltration of leucocytes having polymorphicnuclei. The number of blood cells including the lymphocytes was greatly increased It is expected that the actual degree of damage in wild would be much greater than those observed here under experimental condition, since there the time of exposure may be much longer and the available food to would contain the toxicant in question . The deeper part of the gastric tissue appeared at time with granulations. The overall conclusion is that the inflammatory effect induces secondary effect to as deep levels as gastric musculature.

Abstract No. 158

MAPPING OF QUANTITATIVE TRAIT LOCI (QTL) FOR YIELD AND YIELD CONTRIBUTING TRAITS UNDER MOISTURE DEFICIT CONDITIONS IN WHEAT (TRITICUM AESTIVUM L.).

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ABSTRACT

The morpho-physiological traits such as yield and yield attributing traits are effective selection criteria for screening of wheat genotypes for abiotic stress such as drought and high temperature. Identification of loci governing yield contributing traits in wheat lead to production of material tolerance to such stress conditions. The recombinant inbred lines (RILs) of wheat were developed using the parents HW2004 and HD2877 to identify loci for yield. Due to recombination and segregation distortion RILs showed varying range for various traits under water deficit conditions. The mapping population of 262 recombinant inbred lines (RILs) from a moisture stress tolerance and susceptible wheat cultivar, 'HW2004' × 'HD2877' was grown for two crop years at two locations under rain-fed and normal irrigated conditions to identify quantitative trait loci (QTL) associated with yield. The genetic linkage map was constructed comprised of 132 SSR markers and covered the entire 21 chromosome. The map covered 3936.8 cM with 1355.8 cM (34.4%), 1335.5 cM (33.9%), and 1245.5 cM (31.6%) for A, B, and D genome, respectively. Several QTLs for yield were detected on various chromosomes under moisture stress conditions. The identification of loci associated with yield will be useful for marker-based approaches to improve the character and its stability for wheat breeders in water scarce environments.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 159

POSITIVE IMPACT OF AWARENESS PROGRAMME ON GROWTH AND CONSERVATION OFVULNERABLE AVIAN SPECIES GRUS ANTIGONEIN AND AROUND ALWARALAKE OF DISTRICT KAUSHAMBI (U.P.), INDIA

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ABSTRACT

Indian Sarus Crane, *Grus antigoneantigone* (Linnaeus, 1758) is the largest of the crane species found in India. As such the authors have initiated a public awareness campaign since 2011 to save and conserve this species from becoming extinct. The present study concerns the survey of Indian Sarus Crane in and around Alwara lake of District Kaushambi (U.P.) from 2011 to 2018 along with awareness programme.

The awareness programme was carried out with the help of local people residing around the lake and district authorities. It helped to restore its exploited habitat and conserve the said species. The successful awareness programme tends this vulnerable species towards an increasing trend in and around the said perennial wetland. As a result, the habitat concerned has been proved safer for sarus crane population growth due to reduction in anthropogenic activities.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
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Abstract No. 160

GENETIC ANALYSIS OF MORPHO-PHYSIOLOGICAL TRAITS USING GENE BASED MARKERS FOR FUSARIUM WILT DISEASE IN DESI AND KABULI CHICKPEA (CICER ARIETINUM L.)

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ABSTRACT

Morpho-physiological and molecular characterization of 44 chickpea genotypes including 29 desi and 15 Kabuli Chana, for *Fusarium wilt* disease was conducted using gene based markers. The morphological traits included i.e. days to 50% flowering, days to maturity, plant height, number of pods per plant, number of branches per plant, number of seeds per plant, grain yield per plant. The number of branches per plant were significant and positively correlated with number of pods per plant (r=0.635) and number of seed per plant (r=0.556) at 1% significance level. The number of seeds per plant showed negative correlation with thousand seed weight (r=-0.455) and positive correlation with grain yield per plant (r=0.697) at 1% significance level. Molecular screening for fusarium wilt was done by using 15 gene based markers including RAPD, DAF, ISSR and STMS. Total 55 alleles were identified with an average of 3.71 alleles per locus for different markers and a Polymorphic Information Content (PIC) value was in the range of 0.221 to 0.695, respectively. The major allele frequency was between 0.36 (TR29) to 0.86 (UBC880) with a mean value of 0.59. The genetic relationships among chickpea genotypes based on UPGMA tree resulted in four distinct clusters with highly resistance, moderately resistance and sensitive for wilt resistance. The markers had the capacity to discriminate the resistant and susceptible genotypes hence, can be used in future in marker assisted selection for wilt resistance in chickpea.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 161

EFFECT OF ROOT EXUDED SECONDARY METABOLITES OF TAGETUSPLANT ON NEMATODE CONTROL AND YIELD AND QUALITY ENHANCEMENT OF CHICKPEA

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ABSTRACT

Root exudates of marigold ((*Tageteserecta*), collected from intact live plants via newly developed root exudates trapping system. After proper fractionation gives rise to a total of five allelofractions viz., C, B, A, E and D of different solubility (non-polar to polar). Emulsifiable Concentrate (EC) formulations developed from non-polar and medium polar fractions viz., A, B and C clearly revealed the role of polarity, exposure time and the concentration of isolated fractions in imparting their toxicity against second stage juveniles (J2) of *Meloidogynejavanica* in laboratory experiment. EC formulations of fractions A and B (soluble in Hexane & ethyl acetate) was found absolute detrimental to the juveniles at their 200 g ml-1 concentrations, after an incubation period of 24 h whereas, EC developed from fraction C (acetone soluble) showed nearly 70 % juvenile mortality at 700 g ml^{-1} concentrations, at an incubation period of 72 h. The EW formulation of fraction D &E (polar) could not observe to produce any mortality in juveniles in all their test concentrations ranged from 800-1200 g ml^{-1}. Non-polar fraction based EC formulations (A & B) at their higher concentrations of 150 and 200 µg ml-1also caused retardation in egg hatch of the test nematode up to an extent of more than 98 %. At higher concentrations, the said formulations were also observed to cause permanent damage to the exposed eggs as there was no further hatching noticed when treated egg masses were kept in ordinary water for their revivals. As compare to control, the most active EC formulations of non-polar fraction viz., A, at concentration 1.25g/h, in field experiments was found to reduce nematode gall formation on chickpea roots by more than 70% whereas, at same concentrations ethyl acetate (B) and acetone soluble (c) fraction based formulations gave nearly40 and 14% respective reductions in root galls. Apart from gall control the formulations were also found capable for increasing crop phonological and yield attributing parameters which on turn enhance chickpea grain yield by more than 50% in highest dose treatments of lipophilic fraction based formulations. Protein content in grains of chemical treated plots was also found significantly enhanced (nearly to 30%) in some of the treatments.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 162

ANALYSIS OF GASEOUS POLLUTANTS AT INDUSTRIAL AREA IN KANPUR CITY

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ABSTRACT

Kanpur industrial area established in 1876, when the first factory British India Corporation established by Alexander McRobert. It is the one of oldest industrial area in India. There are about 70 factories of chemical fertilizer factory, food and beverage factories, packaging factories and smelter and refinery. The industrial sector is the sector that contributes more than 40% of the air pollution in India. Unfortunately, these factories have adverse impacts to the environment. Based on air monitoring carried out routinely every year, there is an amount of NO2, SO2, dust and particle production, which is excessive according to environmental health standards thus resulting unpleasant smell due to excessive production of NO2 and Ammonia, dust, smoke, several health problems such as respiratory or lungs problems, environmental allergies, and skin health problem. In 2018 World health organization recorded 12,245 people affected by Upper Respiratory Tract Infection (ISPA) triggered by industrial activities in Kanpur.

Therefore, in this study, any impact will be evaluated from the industrial estate activities that have been felt by the neighbourhood community. According to the assessment of the local community, the perceived impact is; smoke, unpleasant smell, changing ecosystem, causing disease, interfering with visibility, hot temperature, and reducing air freshness. It also affects the neighbourhood's district like Unnao, Hamirpur etc. To reduce pollution emissions and achieve a cleaner production in industries, it is essential to understand the inner links between concentrations of gaseous pollutants, types of final products and production techniques.

Abstract No. 163

MALACHITE GREEN INDUCED CHANGES IN THE HEMATOLOGICAL PARAMETERS OF A FRESHWATER CATFISH CLARIASBATRACHUS

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ABSTRACT

The fish Clariasbatrachuswas exposed to various concentration of malachite green for acute (96 hr), short (10-20 days) and long (30-60 days) terms exposure. Different hematological parameters viz, Hb, total RBC, WBC and clotting time were estimated. A significant decreasing tendency has been observed in RBC, Hb, while the value of total WBC and clotting time showed increasing trend in fish treated with malachite green at different time intervals.

Abstract No. 164

EFFECT OF PH AND MOISTURE CONTENT OF SOIL ON GROWTH PATTERN OF DEMATIACEOUS FUNGI –CHAETOMIUMGLOBOSUMISOLATED FROM INDOOR HABITATS OF KANPUR REGION

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ABSTRACT

Dematiaceous fungi consist of a large heterogeneous group of organisms that are characterized by a light to dark brown pigmentation of their hyphal or conidial elements or both. The dematiaceous fungi are widely distributed among the Ascomycetes, Basidiomycetes, and Zygomycetes. However, most of the strains considered pathogenic for humans and part of a fourth group, The Deuteromycetes and are considered to be saprophytes living in soil and vegetative material.

The effect of pH variations from 4 to 9 on growth of identified fungus Chaetomium Globosum Was adjusted according to different pH by using 1 N NaOH or 1 N HCl. The isolated fungal culture was inoculated and incubated at room temperature (28±2°C). Chaetomium Globosum Was capable to grow in pH 4 to 9 and the growth of fungus is optimum at 6 to 9 pH.

The effect of moisture content of soil on growth of isolated fungus Chaetomium Globosum produces 8.6×106 colonies/ml. at 60-80% of moisture content of soil. At dry condition (0%moisture) and higher wet condition (100-200% moisture) there was no fungus colony produces. At 30-50% of moisture content of soil the growth of fungus slowly decreases and growth of colonies was seen at 4-6 days of interval.

Abstract No. 165

FOOD VERSUS FUEL

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ABSTRACT

Using of edible plants (mainly sugarcane, maize and oilseeds) for biofuel production has a domino effect, since it resulted in all grain prices to double. This leads to trickle through food chain and the price of all food should double soon and little grain will be available for food emergency aid Also, burning of grain for fuel to run luxury cars has bioethical issue when people are undernourished. Would be required for a 15% blend in fuels to use soybean or maize as a source of biofuel.The use of food for fuel can replace a small proportion of the fossil fuel used, and thus cannot have any major effect on fuel prices, with a major effect on food and feed prices. Cropping area needed to replace 15% of transport fuels in the studied the improvement of the production of biodiesel from rape seed and stated oil productivity of oil productivity of soya andstated oil productivity of Jatropha. In a recent study, we cultivated in large scale to compare biodiesel production from crop seeds. The annual productivity of oil from S. obliquus was calculated as 22 t ha-1 y-1 which is more than 800% higher than Jatropha. This makes microalgae to be the main source of biodiesel that has the potential to displace fossil diesel. A related study concluded that the annual corn production needed to satisfy one half of all fuel needs would require an area equivalent to more than eight times the . land area that is presently used for crop production Other land-based crops would require less cropland, based on their oil content: oil palm (24% of current cropland area), coconut (54%), jatropha (77%), canola (122%) and soybean (326%) Moreover, recent work indicates that the ability of countries to grow terrestrial crops explicitly for the production of biofuels such as ethanol and biodiesel is significantly, contributing to concerns that these biofuels are not feasible options for providing a significant fraction of global fuel demand.

Abstract No. 166

IMPACT OF PESTICIDES ON HUMAN HEALTH

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ABSTRACT

Pesticides are substances or mixture of substances and they covers wide range of compounds including insecticides, fungicides, herbicides, nematicides, rodenticides etc., Insecticides are widely used in agriculture to control a variety of pernicious organisms that spoil the crop. In India, use of pesticides started in 1952 with the production of BHC. At present; India is the second largest manufactures of pesticides in Asia after China and ranks twelfth globally. Pesticides enter the human body through ingestion, inhalation or penetration via skin. Majority of people get affected by the intake of contaminated food. In last few decades, investigators proved that compound which belong to organophosphorus group of insecticides are dangerous on human life, teratogenic and carcinogenic effect.

Abstract No. 167

THE EFFECT OF DETERGENT ON HAEMATOLOGICAL PARAMETERS IN HETEROPNEUSTESFOSSILIS

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ABSTRACT

In this present investigation, the effect of detergent on Haematoloagical parameters is observed in *Heteropneustes fossilis* that showed significant detergent effect on RBC, WBC, Hb%, MCV, MCH, MCHC there is remarkable change in level of RBC- 86.909 mm3 ,WBC-1 18.264 mm3, Hb- 124.960 g/dL, MCV- 314.396 mm3, MCHC- 27.991% in the serum. The result show the detergent had detrimental effect on haematoloagical parameters of *Heteropneustes fossilis*.

Abstract No. 168

USE OF SOILLESS MEDIA AND ORGANIC AMENDMENTS FOR RAISING HEALTHY NURSERY

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ABSTRACT

Raising healthy nursery isa critical component incultivating transplanted vegetables. Root knot nematodes has become a prominent limiting factor in raising healthy nursery of tomato and brinjal resulting in low productivity. Chemical useis a popular method for management of nematodes, however the use of chemicalsis costly and may cause adverse impact onenvironment. Sustainable agriculture emphasises on using integrated pest management strategies to provide effective, economically viable and environment friendly solutions.The present study is based on the principle of exclusion of plant protection by use of soilless media and organic amendments i.e. trichoderma, crucifer residues and AM fungus individually as well as in combination with the aim to provide farmers with low cost sustainable solution. It is pertinent to state that soil less media with various organic amendments were superior in all plant growth attributes recorded in the study in comparison to the conventional soil media. These findings will be beneficial in managing the menace of root knot nematode in tomato & brinjal nursery and improving socio economic status of farming community by reducing the cost of cultivation.

Abstract No. 169

EFFECT OF AGRICULTURE BIODIVERSITY AND SOCIAL SUSTAINABILITY

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ABSTRACT

Biodiversity as a natural capital plays a great role in providing livelihoods. Agrobiodiversity is a subset of biodiversity that encompasses the variability of living organisms including their in situ and ex situ conservation at species, genetic, and ecosystem levels. Agrobiodiversity is vital importance for sustainable agricultural production. People's dependency on agrobiodiversity as a livelihood strategy is on the rise for their subsistence Agrobiodiversity provides flexibility, resiliency, security, and maximized productivity in the agro-ecosystems and farming systems. In addition to forming the basis for human food production system, it provides cultural, spiritual, religious, and aesthetic values for human societies. Farmlands are the places where undomesticated wild species can deliberately be grown and conserved. It is an important land unit for a household since it is more stable and reliable in growing trees and vegetables than cropland Most valuable species, either crop or non-crop, are cultivated in the farmlands for the regular supply of products and services that the farmers need for their livelihood. Therefore, human managed agro-ecosystem like that in their farmlands appears to be conserving a variety of crop, trees, and livestock. Besides, wild and native fruits play a key role in conserving other faunal diversity in the farm landscapes. Thus, assorted and diverse species grown on farmlands, commonly known as farm forestry, are playing a crucial role in sustaining agricultural production, reducing pressure on remaining forests, and healthy local biodiversity outside protected areas Conservation of existing biodiversity in agricultural and farm landscapes and the adoption of biodiversity-friendly practices have been proposed as ways of improving the sustainability of agricultural production, ecosystem services with less damaging effects on environmental quality. Despite its diversified significance, the role of farm flora in providing rural livelihood and maintaining biodiversity has received little attention in existing body of literature. Thus, we assume that agrobiodiversity plays a significant role in the livelihood and environmental congeniality of the area.

Abstract No. 170

OYSTER MUSHROOM: A POTENT IMMUNOSTIMULANTINCLARIASBATRACHUS

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ABSTRACT

The use of immunostimulants for the prevention of disease in fishes is considered as an attractive and promising area in the field of aquaculture. Immunostimulants are valuable for the prevention and control of fish diseases in aquaculture as they represent an alternative and supplementary treatment to vaccination. They also have additional effects such as growth enhancement andincrease in the survival rates of the fishes under stress. Certain medicinal plants are believed topromote positive health and maintain organic resistance against infection by re-establishing bodyequilibrium and conditioning the body tissues. The present study was designed to evaluate theimmunostimulant potential of oyster mushroom on fish Clarias batracus inboth specific and non specific levels. Our results showed that there is a significant increase in RBC,WBC, Serum protein and globulin at 5% and 15% concentrations of mushroom powder in both the 30and 45 days of treatments in the blood of the fish which may be considered as a sign ofimprovement in both specific and non specific immune responses. Based on the results it isappropriate to conclude that the God food oyster mushroom may act as a potentImmunostimulant in Clarias batrachus.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 171

EFFECT OF CHEMICAL FERTILIZERS ON ENVIRONMENTAL POLLUTION

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ABSTRACT

Chemical fertilizer will increase the plant growth and vigor, thence meets the food security of the planet; howevertheplantsgrownup during this means doesn't develop smart plant characters like, smart scheme, shoot system, organic process characters and conjointly won't get time to grow and mature properly. With chemicals created plant can accumulate within the organic structure, toxicant chemicals, that area unit terribly dangerous. The hurtful result of the chemical fertilizers can itself begin from the producing of those chemicals, whose product and byproducts area unit some toxicant chemicals or gases like NH4, CO2, CH4etc. which is able to cause pollution. And once the wastes from the industries area unit disposed off untreated into close water bodies it'll cause pollution. It conjointly includes the foremost devastating result of chemical waste accumulation within the water bodies i.e., the water eutrophication. And once adscititious in soil, its continuous use degrades the soil health and quality thence inflicting the soil pollution. Therefore, this can be time to appreciate that this crop production input is depleting the environment and system. thence its continuous use while not taking any remedial live to scale back or considered use can use up all the natural resources in some unspecified time in the future and can threaten all the life from the planet. The adverse result of those artificial chemicals on human health and setting will solely be reduced or eliminated by adopting new agricultural technological practices like shifting from chemical intensive agriculture which incorporates the employment of organic inputs like manure, biofertilizers, biopesticides, slow unleash fertilizer and nanofertilizers etc. which might improve the appliance potency moreover as use potency of the fertilizers. Opting organic farming can produce a healthy natural setting and system for the current moreover as future generation.

Abstract No. 172

EFFECT OF HETEROGENEOUS TRAFFIC CONDITIONS ON NOISE POLLUTION IN KANPUR CITY

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ABSTRACT

In India, the transportation sector is rapidly growing with an annual production of over 4.6 million vehicles.The annual growth rate of transportation is 10.5%.This has led to overcrowded roads resulting in noise pollution.Noise is one of the most important causes of pollution in the metropolitan regions which directly affects the health of humans and animals. The identification of road traffic noise parameters is a typical task which makes the modelling complex in nature. The developed modelenables us to predict noise level at the important locations of the city like hospitals, educational buildings and recreational centres.Traffic noise prediction models are required to help in the design of roads and sometimes in the assessment of traffic noise conditions. The purpose of this study was to design a prediction model of road traffic noise based on different variables and conditions of transportation modes in Kanpur, Uttar Pradesh. 300 samples were collected to measure thenoise levels and other variables to develop a statistical regression model based on equivalent noise level for city road condition.

The noise parameters recorded were Equivalent Noise Level (Leq) with the help of Sound level meter. A mathematical model was developed for predicting Noise Level Exceedance (L10) or Leq level by considering the following parameters like i. Total vehicle volume per hour,ii. Average vehicle speed in Kmph,iii.Atmospheric temperature in °C,iv.Surface temperature in °C, and v.Relative humidity in.

On a specific note, the proposed model can be effectively utilised for the prediction of highway traffic noise especially for the heterogeneous traffic.

Abstract No. 173

COMPATIBILITY OF ASTERACEOUS EXTRACTIVES: AN ECOFRIENDLY ALTERNATIVE APPROACH IN MANAGEMENT OF APHIS GOSSYPIIGLOVER(HEMIPTERA: APHIDIDAE)

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ABSTRACT

Bhindi, *Abelmoschusmesculentus* (Linn.) Moench commonly known as okra is an important vegetable crop grown all over Indian sub Zoogeographical region [1]. Okra contains large quantities of vitamin B, vitamin C , carbohydrate, potassium, protein, folic acid, and calciumIn the present investigation alcoholic extract of ten indigenous naturally occurring *asteraceous* plant extracts viz., aerial parts of *Cichoriumintybus* (L.),Chromolaenaodorata Linn., *Chrysanthemum cinerariaefolium* (trev.) Vis., Inularacemosa Hook. F., Mantisalcaduriaeri Birq. Et Cavill., Rechardia tingitana(L.) Roth, Rhaponticumacaule (L.) DC, Scorzonera undulate Vahl, Spilanthespaniculata Well ex DC and Tagetesminuta Linn. were prepared under the field conditions. In the initial study, treatments including control having different extracts were carried out under laboratory conditions to evaluate the insecticidal effectiveness on the target pests. The laboratory experiment was comprised of ten treatments including untreated control with three replications and periods. The extracts of *A. paniculata, C. odorata, C. intybus, I. racemosa., M. duriaei, R. tingitana, R. acaule, S. undulata, S. Paniculataand T. minuta* and untreated control were tested for insecticidal ef fectiveness against nymphs and adults of *Aphis gossypii.*The data depicted in results indicated that alcoholic extracts of *C.odorata* registered highest mortality (75.77%) to nymphs and adults of *A. gossypii*, when compared to other plant extracts as: *S. paniculata* (74.25%), *T. minuta* (69.32%) and *S.undulate* (66.76%) have registered encouraging (greater than 60 % mortality) results having insecticidal properties under laboratory trials.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 174

TOXICOLOGICAL BIOPOTENCY OF CERTAIN ASTERACEOUS EXTRACTIVES AGAINSTEARIASVITTELLAFABRICIUS (LEPIDOPTERA: NOCTUIDAE)

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ABSTRACT

The okra, eggplant, peppermelon, cucumber, pumpkin and cotton crop are vulnerable to attack of many insect pests, among them okra fruit borer,Eariasvittella is most important pest causing direct damage to the marketable It is alone reported to cause 57.1% fruit infestation and 54.04% yield loss in okra .In the present investigation alcoholic extract of ten indigenous naturally occurring asteraceous plant extracts viz., aerial parts of Cichoriumintybus (L.),Chromolaenaodorata Linn.,Chrysanthemum cinerariaefolium(trev.) Vis.,InularacemosaHook. F., Mantisalcaduriaeri Birq. Et Cavill., Rechardia tingitana(L.) Roth, Rhaponticumacaule (L.) DC,Scorzonera undulateVahl, Spilanthespaniculata Well ex DC and Tagetesminuta Linn. were prepared under the laboratory conditions. The plants parts used for extracts were surveyed, identified and collected mainly from wasteland and wild areas and some plants were collected from cultivated fields of the farmers. The investigations on the screening of various available indigenous naturally occurring ten plant extracts. In the initial study, treatments including control having different extracts were carried out under laboratory conditions to evaluate the insecticidal effectiveness aganst 3rd instars larvae of EariasvittellaFabricius. The laboratory experiment was comprised of ten treatments including untreated control with three replications and periods. The extracts of A. paniculata, C. odorata, C. intybus, I. racemosa., M. duriaei, R. tingitana, R. acaule, S. undulata, S. Paniculataand T. minuta and untreated control were tested for insecticidal effectiveness against 3rd instars larvae of Eariasvittella. The data depicted that toxicity of ten astereceous bioactive plant extracts after 24 hr of exposure can be summarized based on their relative mortality and values as : S. paniculata(83.85) >I. racemosa(66.54) >R. tingitana(61.22) and C. intybus (61.22) while S. undulate(56.79), C. cinerariaefolium(52.78)>M. duriaei, (50.77) >C. odorata(45.00), respectively.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 175

AIR QUALITY MONITORING USING INTERNET OF THINGS

Ankit Katiyar and Pradeep Kumar

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ABSTRACT

Air quality Monitoring provides raw measurements of gases and pollutant concentrations, which can then be interpreted and analyzed. Air pollution is a major concern in many urban areas and is the chief reason for respiratory problems among many people, monitoring the air quality may help many people suffering from respiratory problems and diseases, and thereafter informing engineering and policy decision makers to improve the quality of air.

Using experimental analysis, conventional air automatic monitoring system has high accuracy, but large bulk, high cost makes it impossible for large-scale installation. Based on introduction of Internet of Things (IOT) into the field of environmental protection, this paper puts forward a real-time air pollution monitoring system. The paper presents a system enabling measurement of ammonia, aromatic compounds, sulfur, benzene, vapor, smoke, ambient temperature, and relative humidity, etc. The system is adapted to an open-source Internet-of-Things (IoT) web-server platform, called Thingspeak, for long-term storage of the collected sensor data and live monitoring of the status of the quality of air. The system has been developed using ESP8266 Wi-Fi microchip with a DHT11 Sensor to measure the temperature and humidity along with MQ 135 and MQ 2 sensors for detecting the gases. The programming is done on Arduino IDE and the data is collected by connecting the microchip through a Wi-Fi connection and the readings are sent to ThingSpeak servers. Using this IoT module the environmental quality awareness can be improved and so will quality of human life and sustainability.

Abstract No. 176

ROLE OF WOMEN IN ENVIRONMENTAL RISK MANAGEMENT

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ABSTRACT

Growing population and technological advancement are continuously putting a strain on the environment and on country's natural resources. Over-exploitation of the country resources has resulted in degradation of resources mainly due to industrial pollution, soil erosion, deforestation and urbanization. The criticality of incorporating gender views in environmental problems lies within the incontrovertible fact that decision-making processes perpetually begin at home and at the individual level. Survival of ladies and their families is closely connected to the health of the ecosystem therefore they are the foremost sensitive to changes in the environment evinced by their being the first line of defense and closet contact with the land. Women have direct contact with natural resources like fuel, food, fodder, forest, water and land especially in rural areas where 70% of Indian population reside and directly dependent on natural resources. Women are liable for mistreatment of natural resources to satisfy the fundamental wants of their families. Women play a key role in managing natural resources on family and community level. Women have become more integrated in shaping the idea of sustainable development. According to United Nation's agency "Women play an essential role within the management of natural resources such as soil, water, forest and energy". They typically have a profound ancient and contemporary knowledge of the natural world around them. Women even play a leadership role for conservation and enhancement of the environment. Several Indian women such as Menaka Gandhi and MedhaPatekar played crucial role for the promotion and conservation of environment. Involving ladies in protecting the environment would facilitate the societies develop the sense of responsibility required to keep up a decent balance between humans and the earth's resources. The gender-environment relations have valuable ramifications in regards to the understanding of nature between men and women, the management and distribution of resources and responsibilities and the day-to-day life and well-being of people. Unfortunately, women are both victim and contributor to the natural resource degradation. There is a need to aware the women on grass root level and integrate them at higher level decision making.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 177

TEACHING RESEARCH METHODS THROUGHSTUDENT PARTICIPATION IN ACOMMISSIONED RESEARCH PROJECT

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ABSTRACT

Teaching research methods to social science undergraduates presents a number of dilemmas, including the development of effective means of providing students with practical research experience and the difficulty of engaging the interest of students in a subject which for many is not intrinsically appealing and to which some have a long-standing aversion. One way of addressing these issues is to enable students to participate in a real research project, often commissioned by an external agency. Reports of this approach have demonstrated its benefits to student learning and have identified some logistical problems of project-based teaching. This paper reports on a project-based research methods course which has been running for 5 years and which has some distinctive features: unlike most such courses it is compulsory and is taken by a relatively large number of students; the research project is funded each year by a commissioning agency; considerable emphasis is placed upon the assessment of students' contributions to the research. These distinctive aspects of the course are discussed in relation to one particular project in which students participated, a patient satisfaction study of an accident and emergency department, funded by a Regional Health Authority. The results of a student evaluation of the learning benefits of involvement in this project are reported. It is concluded that project-based learning of research methods on courses that are larger than those reported in the literature and which are compulsory can be beneficial to both students and commissioners, and that through detailed planning of student participation and formal assessment of students' research activities, some of the problems reported by those running such courses can be resolved.

Abstract No. 178

SUSTAINABLE DEVELOPMENT AND WOMEN IN NEW INDIA

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ABSTRACT

Sustainable developmentdepends on an equitable distribution of resources for today and for the future. It cannot be achieved without gender equality .Women empowerment is a key factor for achieving sustainable economic growth,Social development and environmental sustainability.Sustainable development is the organizing principle for meeting human development goals .Sustainable development goals are the better and foremost objectives have to achieve for a better tomorrow.They address the global challenges we faceincluding those related to poverty,inequality,climate change,environmental degradation,prosperity, peace and justice.

Women have played a very vital role in the global environmental movements. Though majority of them were poor and illiterate.Over the years ,Women have continued to speak out for policies and practices that do not threaten the health and wellbeing of future generations .They continue to fight for improved living standards and protection of the environment. Women share the primary responsibility for nutrition, child care and house hold management in almost all countries.They are also active in environmental management.

In the present paper, we thoroughly discussed the issues regarding the role of Women in sustainable development.How they would be important and what are the obstacles in the way of their growth and development, critically analysed in the present paper.Certainly, Women have a strong role in education and socializing their children.

Abstract No. 179

ZERO ENERGY BUILDING: A FUTURE PROSPECT

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ABSTRACT

Traditional buildings are significant contributors of greenhouse gases as they produce a significant amount of toxic gases and carbon. The zero web energy consumption principle may be a suggests that cut back|to scale back|to cut back} carbon emissions and reduce dependence on fossil fuels and though zero energy buildings stay uncommon even in developed countries, nowadays they are gaining importance and popularity. Net zero energy buildings are those which have almost zero carbon emission.

Most zero energy buildings use the electrical passive grid for energy storage but some are independent of grid. Energy is sometimes harvested on-the-spot through a mixture of energy manufacturing technologies like star panels and wind energy, while reducing the overall use of energy with highly efficient HVAC and lighting technologies. The zero-energy goal is turning into additional sensible because the prices of different energy technologies decrease and also the prices of ancient fossil fuels increase.

A web zero-energy building (ZEB) may be a residential or industrial building with greatly reduced energy desires through potency gains such the balance of energy desires are often equipped renewable technologies. Despite the thrill over the phrase "zero energy," we lack a common definition, or even a common understanding, of what it means. The means the zero energy goal is outlined affects the alternatives designers build to realize this goal and whether or not they will claim success. The ZEB definition will emphasize demand-side or provide ways and whether or not fuel shift and conversion accounting area unit applicable to fulfill a ZEB goal.

Abstract No. 180

MEDICINAL IMPORTANCE OF CORIANDER SEED AND OIL IN HUMAN HEALTH

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ABSTRACT

Coriander (C. sativum L.) is one of the most useful essential oil bearing spices as well as medicinal plants. The leaves and seeds of the plant are widely used in folk medicine in addition to its use as a seasoning in food preparation. Seeds of the coriander plant have been shown to in many studies to decrease blood sugar and reduce insulin resistance. This effect likely is due to the flavonoids and polyphenols present in the seed. Studies also have shown that the seeds can lower cholesterol levels, making it beneficial for heart health. In several animal studies, coriander seed extract decreased LDL cholesterol, triglycerides, and total cholesterol in rats. The extract also increased HDL cholesterol (the "good" cholesterol). The tiny seeds are magical for all your intestinal issues including bloating, gastric, diarrhea, nausea etc. It is an all in one solution for almost all digestion related issues. It contents dietary fibers and are also a good source of antioxidants. These are rich in copper, zinc, iron and other essential minerals that increases RBC and improves heart health. They are a good source of antioxidants and other essential vitamins that helps in regulating blood sugar level in the body. Try drinking an easy coriander infused tea in the mornings to regulate your blood glucose level and also to aid weight loss. The seeds of coriander have essential oil and extracts possess promising antibacterial, antifungal and anti-oxidative activities as various chemical components in different parts of the plant, which thus play a great role in maintaining the shelf-life of foods by preventing their spoilage. This edible plant is non-toxic to humans and the C. sativum essential oil is thus used in different ways, viz., in foods (like flavouring and preservatives) and in pharmaceutical products (therapeutic action) as well as in perfumes (fragancias and lotions).

Abstract No. 181

MEDICINAL IMPORTANCE OF GINGER IN NUTRACEUTICAL USE

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ABSTRACT

In recent years, most people throughout the world have become health conscious, and recently countries have even been ranked on the basis of how health conscious their citizens are. People throughout the world would like to live healthy lifestyle and do not want any disease that could should create distress in their life. In order to improve their health, people have started consuming food supplements or nutraceuticals which have many health benefits for the prevention of disease. Dietary fibers, probiotics, prebiotics, polyunsaturated fatty acids (PUFA), antioxidants, vitamins, polyphenols and spices are all being used as nutraceuticals. Ginger is one such spice used all over the world for culinary purposes and also for its health benefits in both animals and humans. The rich phytochemical composition of ginger makes it effective against a wide spectrum of chronic disorders. Phytoconstituents in ginger provide health benefits not only by modulating various intrinsic antioxidant systems of the body but also by acting as free radical scavengers themselves. The nutraceuticals properties of ginger include antioxidant, anti-inflammatory, gastroprotective, immunomodulatory, neuroprotective, cardioprotective to chemopreventive, and antidiabetic. In fact, the beneficial effects of ginger have propelled its study in various clinical trials in different countries to test its efficacy in various disease conditions. Even different formulations with a ginger extract or its constituents, like gingerol, are commercially available for improving the health of both humans and animals. In this chapter, we have reviewed evidence of the beneficial effects of ginger as a dietary supplement, together with scientific studies in animals and humans proving its benefits in the improvement of health.

Abstract No. 182

A MATHEMATICAL APPROACH AND ITS APPLICATION IN REMOTE SENSING

Arun Srivastava, Anil Kumar Singh and S. P. Kushwaha

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ABSTRACT

Remote sensing, the process of detecting and monitoring the physical characteristics of coverage of a large area by measuring its reflected and emitted radiation at a distance from the targeted area with appropriate modelling and algorithm development has indeed been a matter of great Scientific importance. It is a science of obtaining information about objects or large area from a distance, typically from aircraft or satellites. Application of Remote Sensing techniques and Geographical Information System is in the management of various natural resources like Soil, Water, vegetation, environment and agricultural resources. Rapid developments in Remote sensing have pushed earth observation research and development to the forefront of scientific endeavour, challenging the traditional approaches followed in diverse fields such as meteorology, geology, hydrology, forestry and oceanography to few name only. There are two types of remote sensing technology. In active sensing emitted energyis used in order to scan objects and areas then sensor detects and measures the radiation that is reflected or backscattered from the target. RADAR and LLDAR are examples of active remote sensing. Theanother type of sensing ie. Passive sensors gather radiation that is emitted or reflected by the object or surrounding areas. Reflected sunlight is the most common source of radiation measured like infrared and radiometers. GIS can operate through computer.Images captured can be referenced into spatial and non spatial data for manipulation, analysis and modelling leading into management of decision making tasks. Remote sensing provides timely and repetitive information on the happening on earth and its environment . It can help in achieving worldwide economic and social development by managing natural resources while minimizing adverse impacts on the earth's resources, environment and climate, Crop yield forecasting using remote sensing as regression model, in forestry such as soil erosion, flood and increase in CO2 affecting climate.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 183

MEASUREMENT AND SCALING TECHNIQUES IN SOCIAL RESEARCH

Arun Srivastava, Rakesh Kumar Singh and Anjani Singh

C.S. Azad Univ. of Agric. And Tech. Kanpur

ABSTRACT

Scaling techniques is the process of generating sequence of values upon with the measured objects is placed. Scaling describes the procedures of assigning numbers to various degrees of opinion, attitude and other concepts. Scales and indexes are concerned with developing optimum health and emotional vitality, social consciousness, acquisition of knowledge, wholesome attitude and empowerment, spiritual and moral qualities. A more refined techniques concern with linearity and equal intervals like Thurstone equal appearing interval scale, Likert three and five point scale, Guttman scale, Rating scale and Latent distance scales. Scaling techniques is such an integral part of research and devote attention to research activity. Attitude towards Economic development, Socio cultural development, Self confidence development, Self-esteem development and political legal development. Scaling techniques play a major role in the construction of instruments for collecting standardized measurable data. Primary Scaling techniques as measurements are Nominal scale, Ordinal scale, Interval scale and Ratio scale. Other scaling techniques are Comparative scales in which Paired comparison, Rank order, Constant sum and Q-sort scaling. In non comparative scales are Itemized rating scale, Likert scale, Semantic differential scale and Stapel scale. Scales and indexes are significant role provide quantitative measures that are amenable to greater precision, statistical manipulation and explicit interpretation. The social research and schedule well describe and adopt as a various scaling methods i.e. three point, five point scales for knowledge and decision making.

Abstract No. 184

REMOVAL OF HEAVY METALS USING LOW COST ADSORBENTS

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ABSTRACT

With the onset of industrialization mankind has witnessed various environmental issues in the society. This industrialization has not only brought development and prosperity but eventually disturbed the ecosystem. One of the impacts is visible, in form of water pollution. Effluents from large number of industries like, electroplating, leather, tannery, textile, pigment & dyes, paint, wood processing, petroleum refining, photographic film production etc., contains substantial amount of heavy metals in their wastewater.Water pollution produced due to addition of heavy metals resulting from the industrialization and Urbanization. Thus, they disturb the living organisms by entering into the food chain. If the heavy metals are more than its permissible limit then it will cause effects in living entities. Now days the ground water consist of heavy metals that percolates from industrial dumping site, runoff water of roads etc.

61754 MLD of waste water is generated in India from various sources and about 38791 MLD (62%) of waste water remains untreated and is directly discharged into water bodies which causes severe damage to all the environmental attributes. So, this current situation highly demands the need of treating waste water and for this to happen at a faster rate there is a necessity of finding a solution for treating waste water economically using inexpensive methods of treatment. This study deals with the removal of heavy metals such as Chromium, Copper and Zinc from waste water collected from electroplating industry using low cost adsorbents like 'Tea waste' and 'Orange peels', these two adsorbents were tested and was known that used tea waste and orange peel has a carbon content of 62.26% and 67.52% respectively and hence has a high probability of removing heavy metals from the waste water.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 185

A STUDY OF NOX AND SO^2 GASEOUS POLLUTANTS DEPOSITION ON THE DEGRADATION OF CALCAREOUS BUILDING STONES

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ABSTRACT

A laboratory-based atmospheric flow chamber, using realistic presentation rates of SO2, NO and NO2 pollutants directed to various dry and wetted surfaces, has been employed to quantify the effects of the individual pollutants and the role of ozone as an oxidant. For the individual pollutant gases reacting with stone surfaces coming to equilibrium with 84% relative humidity, chemical reaction in the presence of a moisture film proceeds and the extent of this reaction is related to pollutant gas solubility in the moisture film, i.e. SO2> NO2> NO. After dissolution in the moisture film, the pollutant gases are oxidized in the presence of catalysts associated with the stones. The additional presence of ozone promotes oxidation of the pollutant gases and thus their reaction with the stones. For SO2 pollutant, oxidation in the gas phase is not significant compared with that in the moisture film, with enhanced oxidation in the presence of catalysts. Ozone increases oxidation of NO and NO2 pollutant gases in the gas phase and moisture film. However, the oxidation of SO2 in the moisture film is more significant than that of NO or NO2. Wetting of the stone surfaces, in the absence of ozone, reveals the consistently greatest chemical reaction with SO2 compared with NO and NO2, which is related to SO2 solubility, oxidation in the presence of catalysts and production of sulphuric acid. Generally similar behaviour is evident of NO and NO2, but NO shows a reduced extent of chemical reaction, implying that its oxidation in surface water, in the presence of catalytic species, is slow and hence the reactants are lost in the form of run-off. In the additional presence of ozone, the SO2 pollutant gas gives rise to enhanced chemical reaction, whereas both NO and NO2 show lower extents of chemical reaction than for the dry stones. This arises from the relatively slow conversion of N2O5 in the liquid phase to nitric acid, allowing loss of reactants in run-off.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 186

RELATIVE TOXICITY OF SELECTED BOTANICAL CINDERS WITH ONE TRADITIONAL STORAGE PROTECTANT TO THE ADULTS OF PULSE BEETLE, CALLOSO BRUCHUSCHINENSIS (LINN.)

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ABSTRACT

The cinders of the eight plant products viz., fresh leaves of *Calotropisprocera* (R. Br.), dried seeds of *Psoraleacoryfolia* (Linn.), *Semecarpusanacardium* (Linn. F.), *Caesalpinia crista* (Linn.) and dried seeds with glandular hairs of *Centratherumanthelminticum* (Willd), dried bark and fresh fruits of *Thevetianeriifolia* (Juss), dried fruits of *Ficusreligiosa* (Linn.) and shade-dried whole plant of *Euphorbia nivulia* (Buch. Ham.)were tested in the present studies for their comparative relative toxicity value.

The results of bioassay studies of eight plant origin cinders against adults of *C. chinensis* in tables 3-12 Plates II-IX of log dose/probit kill regression line of each cinder and histogram Plate X. It is evident from table that the relative efficacy of cinders listed was found to be in the following order: The *vetianerifolia*> *Calotropisprocera*> *Centratherumanthelminticum*> *Caesalpinia crista*> *Euphorbia nivulia*> *Semecarpusanacardium*> *Ficusreligiosa*> *Psoraleacoryfolia* with the corresponding LD50 values as 0.341, 0.472, 0.523, 0.704, 0.806, 0.9325 and 0.983. The relative toxicity of these cinders was worked out to be 0.9560, 0.6906, 0.6197, 0.4630, 0.4044, 0.3495 and 0.3316, respectively taking *T. nerifolia* as unity. The *Calotropisprocera* was found to be the most toxic being 0.9560 times as toxic as *T. nerifolia*. Based on the relative toxicity values of the eight cinders, taking LD50 values of *T. nerifoliaas* unity. *Calotropisprocera* and *Centratherumanthelminticum* were found to be highly promising followed by *Caesalpinia crista* and *Euphorbia nivulia* which occupied intermediate position.

Abstract No. 187

ADIVASIS IN SOCIAL INSTABILITY: THE ROLE OF WOMEN

Baijnath

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ABSTRACT

The tribals have had a special contribution in the development of India's tradition since ancient times, which is still there. The cultural heritage of the tribals varies. Tribal women have an important role in maintaining the social stability of the society. In social stability, special backward tribes, primitive tribes collectively social status is seen even today, the Government of India especially social, political, cultural And while giving special importance to the traditions, they have a special role in preserving social, cultural rites, emphasizing the stability of the work of advancing the program of women, mainly for the development of tribals for these castes. Non-attainment of desired target in the literacy subjects especially after the 70 years after attaining independence is indicative of a discrepancy in education management. In fact, for the wider dissemination of education, the nature of change in the perspective of the country period.

Abstract No. 188

GLOBAL WARMING AND ITS IMPACTS

Brij Kishor, Jitander Kumar, Yogesh Kumar, Lavkush and Manoj Kumar Prajapati

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ABSTRACT

At the current rate of global warming ,the target of limiting it within 2 degrees by the end of the century seems more and more unrealistic Policymakers ,business and leading international organization negotiations urges the scientific community to provide realistic and accurate assessments of the possible consequences of so called high end climatic scenarios. An individual events or phenomena may not always be easy to link to global warming, the increase in frequency and intensity of such phenomena, and their simultaneous occurrence around the world, provides stronger evidence for such a linkage. Many of the recently observed events have been the worst or unprecedented in 100, 500, and 1,000 years or more. Something highly unusual is happening to our planet.

Many of the impacts we have seen so far are likely just top of the iceberg scholars predict more dramatic, severe and, in some cases, irreversible impacts if we allow warming to continue unabated in the future. Other effects of human activity, such as the spread of homes and infrastructure into vulnerable locations, sinking of coastal land, and degradation of wildlife habitat, can compound the damage caused by global warming. Global warming has tremendous effects on many aspects of human life. We can make no serious effort to combat global warming, and instead try to cope with its increasingly devastating impacts on our livelihoods and the natural world we cherish. Or we can act now to stabilize the climate and mitigate future damages. Progress in combating global warming has already been made at the international, state, and local levels. National legislation that sets a mandatory cap on emissions, the international community would be transformative steps towards solving the problem of global warming.

Abstract No. 189

BIODIVERSITY AND SUSTAINABLE AGRICULTURE

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ABSTRACT

Biodiversity is the variety and variability of life on Earth. The air we Breathe the water we drink and food we eat truly on Biodiversity but the demands of growing population and the practices of unsustainable Agriculture are compromising access to humanities most basic needs. Biodiversity is integral to Ecosystem health quite very Essential to Sustainable of Food Production and Required to make resilient lively hoods. However the alarming pace of Biodiversity loss today threatens Devastating Consequences for Human Population if it goes Unchecked.

Unsustainable Crop livestock, Forestry, Fisheries and Aquaculture practices as well as other unsustainable productive system such as industries and mining, urbanization are giving and incalculable loss on our Biodiversity.

Sustainable agriculture is key to reversing trends that lead to biodiversity loss, damaged ecosystem, Deforestation and the overall deterioration of our natural resources. If Terrestrial, fresh water and marine ecosystem (Major Ecosystems) are managed sustainably, agriculture sector can contribute to the provisioning the ecosystem services at major extent.

Abstract No. 190

EVALUATION OF EFFECT OF METHANOLIC MUSHROOM EXTRACT (PLEUROTUS FLORIDA) ON HAEMATO-IMMUNOLOGICAL ACTIVITY ON CARP FINGERLINGS (LABEO ROHITA)

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ABSTRACT

Carp fishes are a commercially important farmed Indian major carp. Studies that focus on increasing the immuno competence and disease resistance of this species are needed. There is a scarcity of information regarding modulation in carp fishes of the innate immune system by different substances. Therefore, in the present work we evaluated the short-term dietary influence of a methanol extract prepared from the edible mushroom, Pleurotus florida, on the innate immunity and disease resistance of *Labeo rohita*. The aim of present study is to evaluate the effects of edible methanolic mushroom extract, Pleurotus Florida (PF), for 45 days on haemato-immunological parameters of carp fingerlings (*Labeo rohita*). Fish were divided into four groups and each group was fed with dietary PF extract with four graded levels (0, 1, 2, 3, 4%) along with control. The highest levels of RBC, WBCs, lymphocytes and monocytes were measured in fish fed 2% and 3%of dietary PF extract. The activities of total IG, lysozyme, Alternative haemolytic complement activity of fish fed with 3% of dietary PF extract for 45 days were significantly higher than other groups including control. The above results revealed that feeding carp fingerlings fish with dietary supplementation of methanolic PF extract (2 and 3%) improved the selected humoral innate immune responses of carp finger lings.

Abstract No. 191

EMERGING CHALLENGES FOR PROTECTING BIODIVERSITY IN INDIA

Chandraprabha

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ABSTRACT

Biodiversity is the variety and dif ferences among living or ganisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part. India's biodiversity is not only diverse; but a true beauty to behold.India is a megadiverse nation, India is one of the 17 megadiverse countries in the world. Out of 35 biodiversity hotspots in the world, India has 4 biodiversity hotspots Eastern Himalaya, Indo-Burma region, the Western Ghats, and the Sundarbans. India's positionis tenth in birds with 69 species, fifth in reptiles with 156 species and seventh in amphibians with 110 species. India is home to more than 50,000 species of plants, including a variety of endemics. The fact that India has a coastline of about 8,000 km makes our country quite rich in its floral and faunal diversity. The Pride of India lies in its nearly 6,500 native plants which are still used in the indigenous healthcare systems. But the emerging challenges for India is protect the biodiversity and making strong laws for protection a recently happened case Thousands of migratory birds have been found dead at Sambhar Lake, Rajasthan and officials have buried over 18,000 carcasses so far. While there is no clarity yet on what has caused the deaths, investigations so far suggest avian botulism. The government is waiting for reports from various sources to establish the exact cause. One source, the Rajasthan University of Veterinary and Animal Sciences (RAJUVAS) suggested that the cause is avian botulism. But the National Institute of High Security Animal Diseases (NIHSAD) has ruled out bird flu. Partial reports have been received from the Wildlife Institute of India (WII), Dehradun, and the Rajasthan State Pollution Control Board. Humans are primarily at risk from avian botulism only if they eat infected fish or birds. In such cases we stand helpless. Biodiversity refers to a variety and variability of all life present on earth. Biodiversity helps human populations in several ways.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 192

IMPACT OF FATTY ACIDS ON DYSLEXIA AND DYSPREXIA

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ABSTRACT

There is a wide spectrum of conditions in which deficiencies of highly unsaturated fatty acids (HUFA) appear to play a role (Glen et al, 1999). This includes atopic (allergic) conditions such as eczema and asthma as well as psychiatric disorders such as schizophrenia and depression. The focus here is on the role of HUFA in three common learning and behavioural disorders-dyslexia, dyspraxia, although similar issues may also be relevant to the autistic spectrum (Richardson and Ross, 2000).

Dyslexia alone affects at least 5% of the general population in a severe form, although estimates rise when milder forms are included. Dyspraxia remains less well-known, but prevalence appears to be similar. There is considerable overlap between dyslexia, dyspraxia and each can occur with differing degrees of severity. Current evidence suggests that up to 20% of the population may be affected to at least some degree by one or more of these conditions. The associated difficulties usually persist into adulthood, causing serious problems not only for those affected, but also for society as a whole.

Definitive evidence of a causal contribution, however, can only come from intervention studies in the form of randomised, double-blind, placebo-controlled trials. Published studies of this kind are still fairly few in number, and mainly involve the diagnostic categories of ADHD and dyslexia.

The main findings to date from such studies are reviewed and evaluated here with the primary aim of guiding future research, although given that fatty acid supplementation for these conditions is already being adopted in many quarters, it is hoped that some of the information provided may also help to inform clinical practice.

Abstract No. 193

DEPLETION OF SMALL INDIGENOUS FISH SPECIES WILL NOT BE A SMALL LOSS

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ABSTRACT

This study aims at filling the existing gaps of knowledge regarding the state of small indigenous fish species (SIS) would allow for better management of these species, and thus, for more sustainable fisheries. Wild small (length <25 cm) indigenous fish species constitute the main animal source food among the poor rural populations of many Asian countries including India. Small indigenous fish species are a good source of protein, polyunsaturated fatty acids, vitamins, and minerals. The majority of the fish eaten by the rural poor are the SIS. They consume these fish species as these are affordable and easily available. Despite the nutritional, societal and economic importance and biodiversity aspects of SIS within the Asian countries, there is a considerable gap of knowledge regarding their state. This is largely due to lack of market demand compared to large-sized fishes therefore also considered as ignored species. Recently decline in many small indigenous fishes have been reported because of overfishing, water abstraction, pollution, disease and the deterioration of natural habitats. Conservation strategies are required for long term availability and sustainability of SIS by protecting their natural habitat and integrating SIS into aquaculture systems and also by creating awareness among aqua-culturists about their benefits.

Abstract No. 194

USING CROP GENETIC RESOURCES TO HELP AGRICULTURE ADAPT TO CLIMATE CHANGE

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ABSTRACT

Climate change poses likely risks to future crop productivity as temperatures rise, rainfall patterns become more variable, and heat waves, drought, pests, and diseases increase. One strategy for helping farmers adapt to these changes is the development of crop varieties with better tolerance for increased stresses. Traits toboost crop adaptation, which may be found in genetic resources such as landraces (local varieties developed by farmers over many years) or in wild relatives of domestic crops, may be incorporated into varieties that gain wide commercial production. In light of their potential social and economic benefits, such resources have probably been underused. Agricultural production practices can modify considerably so that it will contribute to reducing deficiency diseases and hunger and meeting the challenges of global climate change. Plant genetic resources, a serious element of agricultural diversity, play a key role in rising agricultural production and productivity. They are additionally essential to dealing with global climate change. The use of plant genetic resources to develop varieties that will tolerant to speedily ever-changing environmental conditions, are a very important part of agricultural adaptation to global climate change. Plant genetic resources is the reproductive or vegetative propagating material of cultivated varieties, newly developed varieties, obsolete cultivars, primitive cultivars (landraces), wild and weed species, near relatives of cultivatedvarieties and special genetic stocks. Plant genetic resources can be used to increase yield by increasing resistance or tolerance to different types of stresses. Although genetic resources can also contribute to increased yield by raising physiological yield potential, we focus on stress tolerance here because increased plant stress is likely to accompany climate change.

Abstract No. 195

EFFECT OF FENOXYCARB AS PROTECTANT AGAINST KHAPRA BEETLE TROGODERMA GRANARIUM EVERTS

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ABSTRACT

The various physiological activities of insects are governed by hormonal control like juvenile hormone. There are several hormonal analogues which may be used to manage the insect population. The Fenoxycarb is also a synthetic Juvenile hormone analogue. It was mixed in wheat seed @ 0 to 60 ppm diluted in water @5 ml/kg seed separately. Fifty gram of such treated seeds were kept in plastic containers and 25 newly hatched grubs of khapra beetle were released. There were four replication in the data were recorded various parameters viz. weight loss, infestation larval mortality, adult emergence etc.

After 3 months exposure period the lower doses (5-20 ppm) were less effective while the higher doses (50 to 60 ppm) were very effective significantly counting the weight loss (0.62 to 0.12 per cent) while it was 72.80 per cent in untreated control. The seed infestation varied from 0.18 to 0.12 per cent at 50 and 60 ppm while it was 80.5 percent in untreated control. It was also recorded that the higher dosages provided high larval morality, higher pupal deformity and no adverse effect on germination of wheat seeds.

Abstract No. 196

POLLEN DIVERSITY OF DECIDUOUS TREE TAXA OF GANGA PLAIN

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ABSTRACT

The Ganga Plain is one of the largest botanical provinces of the country with varied floristic compositions in its different sectors. However, attention has not yet given to carry out pollen morphological investigation of tree taxa of this region, which is of great significance in understanding the variability on this aspect in different plant groups. Hence, the pursuance of this study may provide very valuable information in resolving the phylogenic relationship on specific and generic levels as well as taxonomic groups of higher ranks i.e. families, orders, etc. Besides, the pollen morphological study of the deciduous trees occurring in the region is expected to aid in authentic reconstruction of vegetation succession and coeval climatic alterations in the region, which depends entirely on the precise identification of dispersed pollen grains recovered in the sediment deposits from lakes and settlement sites. The pollen characters portray great variation with respect to the nature of apertures, shapes, sizes and exine sculpturing. These characters have been well illustrated through the meticulous examination of several pollen grains of each t species. Furthermore, the recovery of pollen of these trees in the late quaternary deposits coupled with macro-remains from the adjoining excavated sites will also validate their existence in the past.

Abstract No. 197

ENVIRONMENTAL DEGRADATION AND ITS EFFECTS ON OUR CIVILIZATION

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ABSTRACT

Environmental degradation has very close link between modernization and economic growth. Continuous growth of community results in decline of environment and depletion of resources. Environmental degradation is the deterioration of environment through depletion of natural resources like air, water and soil; destruction of ecosystem; habitat destruction; extinction of wildlife and pollution. Environmental degradation is the contamination of harmful constituents in air, water and soil which adversely alter the natural quality of environment. Environmental degradation is of many types. Deforestation, desertification, extinction, erosion are of some common types of environmental degradation.

Ecological effect or degradation is created by the consolidation of an effectively substantial and expanding human populace. It occurs when earth's natural resources are depleted and environment is compromised in the form of extinction of species, pollution in air, water and soil, rapid growth in population. For our better living standards we need clean we need clean air, pure water, nutritious food, clothes and space etc. But the quality of air and water is likely to deteriorate day by day because of explosion of population, rapid industrialization and urbanization. It is an anthropogenic problem which not only is effecting the present generation but pose a serious threat to a number of generations coming ahead as they will have no pure air to breathe and no clean water to drink.

Currently air pollution, water pollution, garbage and pollution of natural environment are major challenges to us. In our country growing population is the primary cause of environmental degradation. Now it is our prime responsibility to control the increasing pollution day by day so that people of our country may live their life in unpolluted environment. Protecting our environment is everyone's concern in fast developing world.

Abstract No. 198

ENVIRONMENTAL ISSUES AND PSYCHOLOGY

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ABSTRACT

Environment is everything (living or non-living) that is around us. It includes physical, chemical and other natural forces. In the environment there are interactions between animals, plants, soil, water and other living and non-living things. Psychology is the science of behaviour and mental processes. Behaviour and mental processes include people environment interactions. Psychological processes are the results of encounters between people and environment. All aspects of human behaviour and mental life are related to the psychophysical environment.

Environmental issues are the most daunting of all the issues in this millennium. The air, water, and land – all are polluted and reaching towards terminal points.

"In this epoc of history, there is one danger that stands out as the most urgent and serious threat to the future of humanity – the threat of ecological disaster." - Oskamp (1995)

Global climate change is currently one of society's grand challenges.(American Psychological Association, 2008; Hanson et al., 2013). Psychology cannot change the climate, but, it can play a great role in changing people's behaviour to promote environmentally sustainable behaviour, in exploring how the environment itself should be built and modified to support and even require more sustainable human behavi our?

In the present paper, an attempt has been made to discuss major environmental issues and role of Psychology in solving these.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 199

BIODIVERSITY : SHAPING SUSTAINABLE INDIA

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ABSTRACT

Biodiversity plays a crucial role in functioning of the ecosystems on which humankind depends for food and fresh water, health, recreation and protection from natural disasters. Its loss affects cultural and spiritual values that are integral to human well being. Biodiversity and the essential services that nature provides are essential for life on earth. Biodiversity is the basis of our food, medicine, fuel and livelihoods. It the source of our cultural and spiritual enrichment. By conserving, restoring and sustainability using biodiversity, we ensure that we have viable solutions to present and future challenges, including climate change, water scarcity, food scarcity, sustainable development, peace and security. Protected and restored ecosystems and the biodiversity they support can help mitigate climate change and provide increased resilience to communities in the face of disaster. Water quality and availability is ensured by well-functioning ecosystems – forests, grasslands, soils, rivers, lakes, streams, wetlands, aquifers, estuarial and coastal waters. 3 days nature and biodiversity is in worrisome state. There is a need to do tackle biodiversity as it is a important for sustainable India.

Abstract No. 200

ENVIRONMENTAL FAILURES BECAME A GREAT CHALLENGE FOR THE SOCIETY

Archana Dixit, Shashi Agarwal, Rachana Srivastava Alka Srivastava, and Kalpana Vajpeyi[1]

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ABSTRACT

The future of humanity has been put at risk by a failure to address environmental problems including climate change, species extinction and a growing human population, according to a new UN report. In a sweeping audit of the world's environmental wellbeing, the study by the UN Environment Programme (UNEP) warns that governments are still failing to recognise the seriousness of major environmental issues. The study, involving more than 1,400 scientists, found that human consumption had far outstripped available resources. Each person on Earth now requires a third more land to supply his or her needs than the planet can supply, it finds. Meanwhile, biodiversity is seriously threatened by the impact of human activities: 30% of amphibians, 23% of mammals and 12% of birds are under threat of extinction, while one in 10 of the world's large rivers run dry every year before it reaches the sea.

The report - entitled Global Environment Outlook: Environment for Development - reviews progress made since a similar study in 1987 which laid the groundwork for studying environmental issues affecting the planet. Since the 1987 study, Our Common Future, the global response "has in some cases been courageous and inspiring," said the environment programme's executive director Achim Steiner. The international community has cut ozone-damaging chemicals, negotiated the Kyoto protocol and other international environmental treaties and supported a rise in protected areas which cover 12% of the world. "But all too often [the response] has been slow and at a pace and scale that fails to respond to or recognise the magnitude of the challenges facing the people and the environment of the planet," Mr Steiner said. "The systematic destruction of the Earth's natural and nature-based resources has reached a point where the economic viability of economies is being challenged - and where the bill we hand to our children may prove impossible to pay," he said. Climate change is a global priority that demands political leadership, but there has been "a remarkable lack of urgency" in the response, which the report characterised as "woefully inadequate".

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 201

ECOPHISIOLOGICAL STUDY OF LIPIDUMSATIVUM L WITH PARTICULAR REFERENCE TO KYMORE PLATEAU REGION

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ABSTRACT

LipidumsativumLinius, locally Known as chandrasur or chamsoor, commonly known as water cress and garden cress, belonging to the family crucifeare. It is traditionally cultivated in limited area of the Gujarat, Rajasthan and Madhya Pradesh. It is low water requiring medicinal herb, so its demand in market increasing day by day. Present paper deals with the LAI, LAD, BMD, SLA, SLW, CGR, RGR and NAR.

The WHO encourages, recommends and provides for the inclusion of herbal medicines in natural health care programmes. The motive behind this is to avail herbal medicine at cheaper price to common man staning at the end corner.

Abstract No. 202

EMERGING WASTE MANAGEMENT ISSUES ANDGREEN SOLUTIONS FOR SMART CITY KANPUR NAGAR, U.P., INDIA

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ABSTRACT

In the current scenario world is facing one of the major environmental degradation nd management issues like waste (biomedical, solid, hazardous) may be in any of the forms (solid, liquid or gaseous). The disposal of plastic waste in to the sites, management of waste heap or artificial waste rock sites, landfill sites and generation of wealth from the waste is now one of the burning concerns of the national and international level. Smart city Kanpur is also facing the same problem and know for its higher environmental pollution (air, water, soil) level also due to tannery effluent discharge, encroachment on tributaries of Ganga like Pandu river and many more old /dried tributaries, wetland, old/ choked drainages patterns in the Manchester of northern India, illegal construction on waste dumping sites in urban and rural fringes of the area, unplanned expansion of urban and industrial area in outskirts of Kanpur city, immigration of villagers, labours for job opportunity, slums, improper drainage, haphazard building construction etc.

In the case of green and ecofriendly solutions for the above problems Remote sensing and GIS technology would play vital role in reducing the adverse environmental and climatic (microclimatic) impacts on the society in every seasons and weathers throughout the world. Some of the remedial methods for waste management in smart city Kanpur like green cover mapping (Green belt, Green muffler, vertical gardens, hanging gardens, artificial forest, community forest and gardens), mapping and monitoring of waste dumping sites and site suitability analysis for landfill sites, landfill taxes and waste to wealth generation green and advanced technology, awareness (public participation and involvement), capacity building etc. can pave the way for waste management, proper cooperation, coordination and implementation and better digital, Eco-smart, Green and clean, fit India.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 203

AIR QUALITY OF KANPUR CITY, UTTAR PRADESH, INDIA

Gyan Gupta, Vishal Saxena, Vimal Kumar and Saurabh Kumar

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ABSTRACT

The overall objective of the work to adopt and develop an Air Quality Index (AQI) based on national air quality standards, health impacts and monitoring programme which represents perceivable air quality for the general public in easy to understand terms and assist in data interpretation and decision making processes related to pollution mitigation measures. An AQI defined as an overall scheme that transforms weighted values of individual air pollution related parameters (i.e. CO, SO2, NO2, O3, NH4 and PM2.5) into a single number or set of numbers. The sources of pollutants in the atmosphere due to high density petrol and diesel driven vehicles, small steel, electrical, plastic processing unit industries and as well as abrasion and poor condition of road also. The various pollutants value were higher than the standard limit of NAQS during winter season as compared to summer and monsoon seasons due to a lower temperature and calm condition which reduces the mixing height further decreasing the dispersion of pollutants. Besides these conditions, high humidity and fog condition can also help in retaining higher pollutants in the lower elevation of the atmosphere. The calculated value of AQI of the different month and their average compared and match with AQI category and found that the value of AQI comes under 'very poor'. It validates that Kanpur city's air conditions are very poor and caused respiratory illness and eye allergies after prolonged exposure.

Abstract No. 204

DUSTFALL FLUXES ON FOLIAR SURFACE OF PLANTS AT URBAN CITY OF KANPUR

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ABSTRACT

Dust is considered as one of the most widespread air pollutants predominantly found in African and Asian regions. Tree leaves in urban areas have been reported as a good accumulator of atmospheric dusts. It can efficiently accumulate dusts due to their large surface area and waxy coating surface. This work was focused upon monitoring of dustfall deposition on foliar surface of Morus (Morusalba) and Alstonia (Alstoniascholaris) at three sites in city of Kanpur regioni.e Lal Imili, Chandra shekhar Azad University (CSA) and Cant Area. Dustfall deposition was collected on a 7 days exposure basis in the period of 2018-2019 at foliar surfaces.The foliar dustfall fluxes were higher deposited at Cant area as compared to Lal Imili and CSA sites due to higher blown of dust from road dust, heavy duty vehicle, construction activities etc. At Lal Imili site, the average dustfall fluxes were recorded as 266± 51mg/m2/d and 64±12 mg/m2/d for Alstonia and Morus foliar, respectively. At CSA site, the average dustfall fluxes were recorded as 271±53 mg/m2/d and 73±14 mg/m2/d for Alstonia and Morus foliar respectively whereas, at Cant area site, the average dustfall fluxes were recorded as 381±78 mg/m2/d and 93±18 mg/m2/d for Alstonia and Morus foliar respectively. Apart from local and transported pollution, winter season had the highest fluxes which were probably due to favorable meteorological conditions such as low temperature, high humidity, lower mixing height etc. while, the lowest fluxes as observed during monsoon season were probably due to the wash out effect of rain. The dustfall fluxes were noticed higher on Alstonia foliar as compared to the Morus foliar. This is probably due to suitable foliar arrangements of Alstonia plant. The Scanning electron microscope (SEM) images of the foliar particulates matter were subjected to foliar surface deposition studies and particle size distribution using ImageJ software. Image data were analysed for different size range of diameter from < 2.5µm to >10µm. The data showed that it may be due to anthropogenic activities.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 205

CLIMATE CHANGES ON EARTH AND SOLAR SYSTEM

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ABSTRACT

Climatic conditions on the earth determined by the complex interactions among the, Oceans, Sun, Atmosphere, Land surface, Biosphere and human activities. These all interactions are totally based on the conservation of mass, conservation of ener gy and Newton's second law of motion. On the earth sun is main source of the energy which directly and indirectly interact among the climatic conditions. Rotation of the earth around its axis and sun results in equatorial areas receiving more solar energy than those near the poles. As a result, the tropical oceans and land masses absorb a great deal more heat than the other regions of earth. The atmosphere and oceans act together to redistribute this heat. Therefore as a result the equatorial waters warm air near the ocean surface, it expands rises and carrying heat and moisture and drifts towards the poles; cooler denser air from the subtropics and the poles moves toward the equator to take its place. This regular redistribution of heat on earth surface is modified by the planet's west to east rotation. Different winds, in turn, along with earth's rotation, drive large ocean currents such as the Gulf Stream in the North Atlantic, the Humboldt Current in the South Pacific, and the North and South Equatorial Currents. All these activities cause impact on the ocean currents redistribute warmers waters away from the tropics towards the polar region. Due to evaporation and precipitation the ocean and atmosphere exchange heat, water, carbon dioxide and other gases. These entire complexes, changing atmospheric and oceanic patterns help and determine weather and climatic conditions on the earth.

Abstract No. 206

LAWS RELATED WITH THE ENVIRONMENT

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ABSTRACT

According to the Planning Commission as stated in its sixth five year plan (1980-85) "The environment must not be considered as just another sector of national development. It should form a crucial guiding dimension for plans and programmes in each sector. As per section 1(2) of the Environment Protection Act 1990 of the U.K.

"Environment consists of all or any of the following media namely air, water and land and the medium or air includes the air with in the building and the air with in other natural or man made structures above or below ground." According to section 2(a) of the Indian Environment Protection Act 1986, the term 'environment' includes 'water, air and land, and the inter-relationship which exists among and between water, air and land and human beings other living creatures, plants, micro organism and property. Undoubtedly the Environment (Protection) Act 1986 has important constitutional implications with an international flavour. The concept behind this Act is borrowed from the proclamation adopted by the United Nations conference on the Human Environment held at stockholm from 5th to 16th June 1972.While according to Article 48-A of the constitution of India, the state shall endeavour to protect and unprove the environment and to safeguard the forests and wildlife of the country. Article 51-A of the constitution imposes as one of the fundamental duties on every citizen, the duty to protect and improve the natural environment including forests, lakes rivers and wildlife and to have compassion forliving creatures.

The main acts which are needed for protection of environment was enacted during the decades of 70's and 80's. The series of acts those were enacted one after another are: Wild life protection Act, 1972. • Forest (Conservation) Act, 1980 • Water (Prevention and control of pollution) Act, 1974. • Air (Prevention and control of Pollution) Act, 1981. • Environment (Protection) Act, 1986.

These acts are under control of or implemented by central pollution control board and state pollution control boards. Thus it becomes imperative that the part of all industries installed after the acts are passed to take clearance from the pollution control boards.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 207

AEROMYCOLOGICAL SURVEY COUNTERPRETIN ADVERSE TESTING IN FUNGAL ALLERGY AND IGE ESTIMATION

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ABSTRACT

Today, most of the people suffering from the seasonal rhinitis, bronchial asthma, respiratory allergy and related symptoms. Airborne Fungal spores play a significant role in developing symptoms and mild to severe. Fungal spores are most common in air and due to their presence in air almost throughout the year, they cause allergy in susceptible human being. The presence of fungal spores in atmosphere differs in different seasons. In present study, fungal spectrum in intramural (indoor) and extramural (outdoor) of Dairy Farms at Jabalpur has been evaluated using Anderson Two Stage Air Sampler. A total CFU for indoor and outdoor were calculated as 7977.8/m3 and 5069.1/m3. In term of fungal composition Aspergillus niger, A. fumigatus, Alternariaalternata in indoor while *Curvularialunata*, *Cladosporium* sp. in outdoor of dairy were dominant. Incidence of more number of fungi had found as a tendency of attraction towards the moisture availability in the dairy environment. In this research paper allergenic effect of fungal spores on dairy workers were also investigated, 40 workers interviewed, 17 workers complained about fungal allergy, 12 workers were selected for Skin prick test involving 18 fungal antigens to ascertain fungal allergy. Higher responses were recorded with Mucormucedo, Aspergillus niger and *Cladosporiumherbarum* shown by SPT on dairy workers. The IgE level was determined only in those workers who consistently showed fungal allergies in Spt.

Abstract No. 208

ASSESSMENT OF VARIABILITY FOR NUMBER OF BUDS PER SPIKE IN GLADIOLUS PLANT MATERIAL

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ABSTRACT

Gladiolus is an important flowering plant which has a great importance in floriculture industry. Its market value is quite high in the world. Gladiolus has its great importance in production of large scale exhibition quality blooms. It is limited. High density planting of bulbs increases yield of spikes in gladiolus. In more recent times floriculture is becoming increasingly popular not only as an essential part of good living and also commercial enterprises with considerable potential for export.

Studies on the genetic variability for number of buds presented on spike carried out with different varieties of gladiolus experiments done with different period of two years. The results so contained revealed that number of buds presented on spike was showed range of variation from 20 in variety V37 Tropic seas to 24 in variety V33 sapna with general mean 22 during previous year of investigation. In second year, the maximum number of buds was followed by 25, 25 and 25 in varieties V42 wild rose, V43 Tambari and V13 Emperor respectively.

Abstract No. 209

BIODIVERSITY PERSPECTIVES OF FOOD, HEALTH AND SOCIETY

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ABSTRACT

The relevance of biodiversity to human health is becoming a major international political issue as scientific evidence builds on the global health implications of biodiversity loss. This issue closely linked with the issue of climate change, as many of the anticipated health risks of climate changes are associated with changes in biodiversity. Some of health issues influenced by biodiversity include dietary health and nutrition security, infectious diseases, medical science and medicinal resources, social and psychological health.One of key health issues associatedwith biodiversity is that of drug discovery and availability of medicinal resources. Biodiversity is the foundation for human health by securing the life sustaining goods and services which biodiversity provide to us the conservation and sustainable use of biodiversity can significant benefits to our health. In contrast the continuing loss of biodiversity and global scale represent a direct threat to our healthy and well being without a global environment that is healthy and capable of supporting a diversity of life.

Genetic diversity in food system provides the foundation of Crop development and food security and promotes resistance and resilience to environmental stresses including pests and diseases of crop and live stock. Diets problem of micronutrient and vitamin deficiencies. Loss of agricultural biodiversity can threaten health livelihood sustainability and our future security of food and nutrition.

Alteration in any system could bring varied effects. A change in biodiversity could have erratic effects not only in wildlife or marine life but also in human beings. We can clearly infer that when our ecosystem in not well taken care of, biodiversity encounters changes that may impact human health.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 210

EFFECT OF FUNGITOXICANTS ON SEED GERMINATION AND SEEDLING INFECTION AGAINST ALTERNARIAALTERNATAIN POT EXPERIMENT OF GOSSYPIUM

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ABSTRACT

Cotton (*Gossypium* L.) is one of the commercial fibre yielding crop of India. It plays a key role in the national economy of our country due to its high grade fibre rich in vitamins, enzymes and oil used as medicine and oil yielding cash crop. Alternariaalternata is amongst the main pathogen which causes great loss to the cotton crop. So the efficacy of selected fungitoxicants like Agrosan G.N., Thiram, Captan, Vitavax and Ceresan was checked in order to detect their ability in improving seed germination and reducing the incidence of seedling infection. After treatment with respective fungitoxicants, it was observed that maximum germination 95.42% took place in ceresan followed by 92.05% in captan, 91.87% in Thiram, 90.25% in Agrosan G.N. while poor germination 78.40% was recorded in vitavax. Seedling infection was significantly reduced in all the fungitoxicants tested for control but was 100% reduced in the seeds treated with ceresan, Thiram and vitavax followed by captan 93.71% and Agrosan G.N 78.94% respectively. Thus in general, the fungitoxicants belonging to heterocyclic nitrogen compound (captan), organomercury (Ceresan and Agrosan G.N) compound groups were more effective in comparison to the fungitoxicants of Dithiocarbamates, Benzene, Copper, Sulphur and Quinone.

Abstract No. 211

INDIAN TRADITION AND FOLK CULTURE ABOUT NATURE: A SOCIAL PSYCHOLOGICAL PERSPECTIVE

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ABSTRACT

Social Science as a subject of human inquiry is a scientific discipline. Indian tradition, culture, folks and literature had a rich history in reference to Nature and surrounding. People have a great relation with nature and their environment. People treated nature as their extended family members like Earth as Mother, Moon as a maternal uncle etc. Our traditions show a strong bond with trees, Forest, River and mountains. In Indian folk culture, we find some everyday concepts employed by people who served nature. The present study agenda is find out a collection of beliefs, jatakkathaye , folk stories regarding how people think when they interact and interpret Nature as their life events. Our indigenous knowledge which known as people's cognitive, emotional andbehavioral wisdom as a result of their interaction with nature in a common territory . These thoughts and knowledge used as societal context which leads to diversity of viewpoint on reality, knowing causes, competence, self, self esteem , moral values and behavior.

Abstract No. 212

BIODIVERSITY IN AGRICULTURE AND ANIMAL HUSBANDRY

Rachana Singh

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ABSTRACT

Biodiversity is the source of the plants and animals that form the basis of agriculture and the immense variety within each crop and livestock species. Countless other species contribute to the essential ecological functions upon which agriculture depends, including soil services and water cycling. Agriculture biodiversity is a broad term that includes all component of biological diversity of relevance to food and agriculture and all components of biological diversity that constitute the agricultural ecosystem, the variety and variability of animals, plants and microorganisms. Animal husbandry is the branch of agriculture, which includes day to day care selection breeding and raising of livestock.

Abstract No. 213

DRINKING WATER, SANITATION AND HYGIENE (WASH) CONDITIONS AND RELATED HEALTH RISKS: A CASE STUDY OF LUCKNOW CITY

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ABSTRACT

The health of the people is directly related to the availability of safe drinking water, sanitation and hygienic conditions. It is one of the leading risks responsible for disease burden in developing countries. This study makes an attempt to present the current status of access to drinking water and sanitation and analyze the disease burden due to WASH conditions in Uttar Pradesh and Lucknow based on primary and secondary data.Using the multistage random sampling technique, 30 households are selected from each zone of Lucknow with a total of 240 households across all eight zones from slum and non-slum areas.

The study reveals poor condition of drinking water, sanitation and hygiene facility in slum areas and its negative impact on health. 37 percent slum households still practice open defecation and only 45 percent have access to drinking water within premises. On the other hand, 98 percent non-slum households have access to drinking water within premises. The main source of drinking water is piped water and bore-well for non-slum house holds while community tank and public tap for slum households. The analysis further reveals that besides WASH conditions, health risk is also linked to a number of inter-related socio-economic factors including: age, family size, education and living conditions. Therefore, the study suggests that there should be higher focus on improving WASH conditions for avoiding disease burden especially in slum areas.

Abstract No. 214

AGRICULTURE POLLUTION AND HEALTH HAZARD

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ABSTRACT

Agriculture pollution is the main source of pollution in water and lakes. Health related problem may occur as it contributes to blue baby syndrome which causes death infants. The earlier source of pollutionhas been pesticides and fertilizers. When large quantities of pollutants are released there may be an immediate impact as measured by large scale sudden mortalities of aquatic organism. Fish kills resulting from contamination of waterways with agriculture pesticides harmful substances, heavy metals and hydrocarbon are often released in to the aquatic environment. Research indicated that some of the diseases caused by aeromonas,flavobacterium and pseudomonas resulted from generally adverse water quality i.e. higher than usual quantities of organic material changes in PH value and enhanced microbial population.

Abstract No. 215

RESPONSE OF GASTRIC TISSUE COMPONENT OF CHANNAPUNCTATUS TO EXPOSURE TO UREA CONTAINING ENVIRONMENT

Rekha Shukla, Rashmi Srivastava and NoopurMathur

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ABSTRACT

The Gastric Histopathology of sections of Channapunctatus, prepared by Paraffin wax method was studied. The fish exposed to 100,200& 500 PPM of Urea (a nitrogenous fertilizer). There were definite signs of necrosis that appeared with the passage of time as the exposure was continued for 15 days .The higher concentration of urea caused an earlier appearance of necrosis of superficial epithelial lining of stomach. There was an infiltration of leucocytes having polymorphicnuclei. The number of blood cells including the lymphocytes was greatly increased It is expected that the actual degree of damage in wild would be much greater than those observed here under experimental condition, since there the time of exposure may be much longer and the available food to would contain the toxicant in question . The deeper part of the gastric tissue appeared at time with granulations. The overall conclusion is that the inflammatory effect induces secondary effect to as deep levels as gastric musculature.

Abstract No. 216

BIO-EFFICACY OF CASSIA OCCIDENTALIS ANDMESUAFERREA ON VARIOUS GRAM VARIETIES AGAINST SPILOSOMA OBLIQUE WALKER DURING FIELD EXPERIMENT

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ABSTRACT

Grain legumes, commonly known as pulses, are important for food and feed, and for sustainable cropping system in many countries of Asia. Seeds of various pulse species are used as staple human food and their straw is a valued source of animal feed. More than a dozen of pulse crops are grown in various cropping systems throughout the year and their consumption provide nutritional requirements to the consumers, most particularly in the developing world. Pulses provide a substantial amount of protein, carbohydrates, fibers, vitamins, unsaturated fatty acids, macro and micro-nutrients in the daily diet of the people. Some of the essential nutrients like vitamins, metals, such as Calcium (Ca), Magnesium (Mg), Phosphorus (F), Potassium (K), Iron (Fe), Zinc (Zn), Selenium (Se) and Iodine (I) although require in a trace amount but are important to maintain optimum health. Among them Fe, Zn, Se, I and Vitamin –A deficiencies are widespread Sarkar et al. (2009). The effect of Cassia occidentalis (Kasaundi) on variety PUSA-256, KGD-1168, PANT G-186 and KW-168 having 8.32, 14.69, 24.12 and 39.86 percent. Mesuaferrea (Nagkesara) on variety Pusa-256, KGD-1168, PANT G-186 and KW-168 being 10.82, 19.73, 31.07 and 44.01 percent. The treatment were significantly superior over the control 94.61 per cent.

Abstract No. 217

ENVIRONMENTAL LAW: IMPLIMENTATIONIN INDIA

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ABSTRACT

The environmental protection act 1986, Forest Conservation Act, 1980, Water Prevention and control of Pollution Act,1974, Biological Diversity Act, 2002, and National Green Tribunal Act, 2010 and many other implementation of rule and regulations by Parliament of Indian Constitution under 252 article the whole India is facing irreparable damage of mankind and environment due to the adverse impact of various hazardous wastes. These wastes are produced by many chemical and explosive industries.

No. of act and policies are made for different fields i.e. air, water, noise, soil, forest, transport, industries etc., but all are exactly not working well. According to the Environmental Performance Index India currently ranks 177 out of 180 countries. Truly there is implementation crisis of environmental law in India. Second largest peopled in world, India, with high lack of knowledge about the environment and pollution the natural resources are decreasing and no reform is taking place, hence despite having a specialized court which deals with environmental cases we are unable to improve it.

The thrust of this paper is to evaluate the lacking, unawareness, loop holes of policy makers and a channelize work from higher level to bottom is necessary.

Abstract No. 218

ALGAE AS A SOURCE OF POLYUNSATURATED FATTY ACIDS

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ABSTRACT

Polyunsaturated fatty acids (PUFAs) have two or more double bonds in their carbon chain. n-3 and n-6 PUFAs are the most biologically significant classes, and have their first double bond on either third or sixth carbon from the chain terminus, respectively. The final carbon in the fatty acid chain is also known as the omega carbon, hence these are also known as omega-3 and omega-6 PUFAs. Oils rich in polyunsaturated fats help reduce bad cholesterol levels in our blood and can lower the risk of heart diseases and strokes. In the present study, different microalgal species were isolated and cultivated on WC media(Guillard & Lorenzen, 1972) in the lab at 27°C and 12:12 light/ dark cycle on an incubator shaker. Algal oils were extracted though solvent extraction of dried algal biomass using hexane. Mass spectroscopic analysis of algal oil was done at IIT, Kanpur. Lipid analysis of various algal species have shown the presence of n-3 PUF As-Eicosapentaenoic acid (EPA, C 20:5, n-3) and Docosahexaenoic acid (DHA, C 22:6, n-3). Study revealed that algae are also a rich source of alpha Linolenic acid(ALA, C 18:3, n-3), Linoleic acid (LA, C 18:2, n-6), gamma- Linolenic acid (GLA, C:18:3, n-6) and Arachidonic acid(AA, C20:4, n-6) which are the basic essential fatty acids. LA, GLA and ALA can be obtained from plant sources, AA from meat and poultry , DHA and EPA are found only in fish oil and algal oils. Essential fatty acids play a part in many metabolic processes. Algal lipids showed the presence of all these essential poly unsaturated fatty acids and therefore algae can be a rich and alternate natural source of human dietary lipids. Further studies are needed to optimize the algal growth conditions for poly unsaturated fatty acid accumulation in algae.

Abstract No. 219

ECOFRIENDLY JUTE REINFORCED SHEETS BASED ON SHELLAC FILLED SMC

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ABSTRACT

Fiber-glass reinforced sheets are found to be increasingly used nowadays for structural fabrications. These are light resistant to water and different chemicals as well as rigid, convenience in the process of manufacture within limited space facilitating increasing utilization for various purposes. To reduce the cost of manufacturing of the reinforced sheets and to enhance the biodegradability of the sheets, an attempt was made to prepare jute (cloth) reinforced sheets (JRS) using shellac as a filler for the polyester resin based sheet moulding compound (SMC) by hand lay-up technique. Jute was chosen keeping in view of its non-hazardous nature compared to fiber glass mats.

Natural resin shellac is known to absorb U.V. rays. Incorporation of shellac as a filler in sheets moulding compound has been found to adversely affect the characteristics of the fiber glass reinforced (FRP) sheets. In the present work two natural products have been utilized to reduce hazard due to fiber glass and synthetic resin. From a study of the different characterstics of the jute reinforced sheets, it has been found that such sheets can be conveniently utilized for structural purposes.

Abstract No. 220

CLIMATE CHANGE AND HAZARDS

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ABSTRACT

Climate change is one of the most important global environmental challenges, with implications for food production, water supply, health, energy etc. Addressing climate change requires a good scientific understanding as well as coordinated action at national and global level. Historically, the responsibility for green-house gas emissions increase lies largely with the industrialized world. Though the developing countries are likely to be the source of an increasing proportion of future emissions. The projected climate change under various scenarios is likely to have implications on food production, water supply, coastal settlements, forest ecosystems, health, energy etc.

The most effective way to address climate is to adopt a sustainable development pathway by shifting to environmentally sustainable technologies and promotion of energy efficiency, renewable energy, forest conservation, reforestation, water conservation etc.

Communities which are already suffering from bad health conditions and malnutritionare suggested be more vulnerable to climate change impacts and a have a lower adaptive capacity compared to healthy communities. Many indigenous people live within their natural ecosystems and are therefore exposed to numerous health hazards mostly as a consequence of their difficult environment.
In many cases, indigenous and traditional communities still maintain their isolation and their traditional indigenous health systems which largely depend on the health of the environment. If the environmental destruction takes place e.g. as a consequences of climate change inducedhazards, the communities ability to obtain medicinal plants and food may collapse which consequently increases their vulnerability.

WHO further suggests that of the vector borne diseases, malaria is the one which is most sensitive to long term climate change. Assuming a global temperature increase of 2-30 C, the number of people at risk of malaria in climatic terms would rise by about 3-5%, or several hundred million.
Climate change is real, serious and inescapable, and its looming ef fects, certain and uncertain, may prove to be destabilizing on a massive scale.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

1st International Conference on Environment and Society (ICES 2019)
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Abstract No. 221

MEDICINAL USES OF WEEDS GROWN IN ORCHARDS OF WESTERN U.P.

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ABSTRACT

Any plant growing out of its proper place or where it is not wanted/desired is a weed. Weeds reduce the economic yield of marketable fruits by competing with fruit plants for water, nutrition, light, space and air, which are meant for the fruit plants. They also create difficulty while carrying out orchard operation like hoeing, irrigation and harvesting of fruits. . Some weeds due to their rhizomes in soil like baru grass (Sorghum halepense) and knots of motha (Cyprus rotundus) resist their eradication. Weeds like Itsit (Trianthema portulacastrum) and Chaulai (Amaranthusviridis) have very high rate of seed production. Weeds play as alternate hosts to many serious pests/diseases. e.g., Cynodondactylon (Doob grass) and Cyprus rotundus (Motha) are alternate hosts of grass hopper; likewise the 'wild senji' and 'maina' are hosts of aphids. Partheniumhysterophorus (congress grass) act as alternate host for mealy bugs, which attack mango, guava, pear and many other fruit trees. They may mar otherwise perfect mats of green grass, but many weeds are chock full of vitamins, minerals and surprising healing abilities. Some weeds have medicinal value for example homeopathic medicine for parthenium allergy is prepared from parthenium itself. Datura is used for animal diseases. Dried plants of Fumariaparviflora (Pitpapra) are used for the purification of blood to cure skin disease. Whole plant extract of Phyllanthusniruri (Bhoomiaonla) is beneficial in curing Jaundice. Purslane (Portulacaoleracea) is rich in vitamin C, omega 3 and 6, and omega 9 (fatty acids). This plant also contains dopa and noradrenaline making it quite useful for growth hormone production, allergies, the entire endocrine system (all glands), and is great for heart health. The oil of ground Ivy (Glechoma Hederacea) relieves congestion and sinus inflammation associated with colds, flu, and sinusitis. Argemonemexicana (Satyanashi) is used to treat many diseases in traditional Indian ayurvedic medicine. Prickly poppy heals constipation, chronic fever and also a source for bio diesel. Balloon vine (Cardiospermumhalicacabum) is one of the best herbal plants for treatment of Cancer. Punarnava (Boerhaviadiffusa) is best known to have medicinal properties, pain relief and other uses. Root and leaves are often used as vegetable in many parts of India. Eclipta prostrate (Bhringraj) belonging to sunflower family is widely distributed throughout India. The plant has many traditional uses in Ayurveda and good for skin infections and toothaches. Apamarga (Achyranthesaspera) seeds are useful in jaundice; its roots' juice is best for scorpion sting and snake biting.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 222

MULTIDIMENSIONAL USES OF INDIAN SHOT (*CANNA INDICA*)

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ABSTRACT

Canna indica (Indian shot), belonging to Cannaceae family, is a perennial plant producing clumps of stems 1.5– 3.0m tall, with large leaves up to 50cm long and 25cm wide. The stems arise from a large, thick rhizome. With its large leaves sheathing a central stem, the plant has the appearance somewhat like a small banana plant. The plant provides food (especially the root), medicines and a range of commodities. It is often cultivated on a home scale for these uses, whilst it is grown on a small scale in Australia as a commercial source of arrowroot. The plant is widely grown through the tropics and subtropics as an ornamental, being valued especially for its flowers and attractive-colorfull-variegated leaves. The rhizomes of cannas are rich in starch, and it has many uses in agriculture. All of the plant has commercial value, rhizomes for starch (consumption by humans and livestock), stems and foliage for animal fodder, young shoots as a vegetable, and young seeds as an addition to tortillas. Root - cooked. The source of "canna starch", used as arrowroot. The arrowroot is obtained by rasping the root to a pulp, then washing and straining to get rid of the fibres. The very young tuberous rhizomes are eaten cooked, they are sweet but fibrousy. Roots contain about 25% starch. There is one report that this plant has an edible fruit but this is somewhat dubious, the fruit is a dry capsule containing the very hard seeds. A fibre obtained from the leaves is used for making paper. The leaves are harvested in late summer after the plant has flowered; they are scraped to remove the outer skin and are then soaked in water for 2 hours prior to cooking. The fibres are cooked for 24 hours with lye and then beaten in a blender. They make a light tan brown paper. A purple dye is obtained from the seed. Smoke from the burning leaves is said to be insecticidal. The plant is also considered to be demulcent, diaphoretic and diuretic. The plant is used in the treatment of women's complaints. The root is diaphoretic and diuretic. A decoction of the root with fermented rice is used in the treatment of gonorrhoea and amenorrhoea. An infusion of the rhizome is said to be febrifuge and stimulant, whilst a decoction is said to be diaphoretic and diuretic. The rhizome is also made into an emollient cataplasm.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

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Abstract No. 223

CLIMATE CHANGE AND ENVIRONMENT: A GLOBAL PERSPECTIVE

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ABSTRACT

Man cannot naturally be detached from his environment. From time to time, changes in climate and environmental conditions occur as a result of natural and human factors. Obviously , the natural factors are almost beyond human control. But, the human factors are to a very large extent under human control. Thus, it is tried to discover natural and human factors that cause climate and environmental changes which have negative effects on the existence of man on earth. Such human factors include, air, water and land pollutions, production of greenhouse gases, deforestation, desertification, emission of carbon dioxide, carbon monoxide and other harmful gases. Natural factors include, volcanic eruption, ocean variations, solar variations, Plate Tectonics, Thermo-haline circulations, etc. There are suggested policy statements made that will enhance climate and environmental education which will enlighten people about the dangers of causing harm to the environment. When this done, there will be a drastic reduction in the negative effects of climate and environmental changes. Human lives are directly linked to the climate. Therefore, there is no gainsaying that human activities are changing the climate. Climate change of course has great impact on the ecosystems. There has been a continuous rise in global temperature in the last 130 years, which has huge consequences on a wide-range of climate related factors. It is evident that carbon dioxide (CO2) and Methane are being dumped in the atmosphere at an alarming rate as a result of the advent of industrial revolution. There are oil spillage and gas flaring all over the environment. Fossil fuels burning and deforestation which produce greenhouse gases are on the increase. This phenomenon is called greenhouse ef fect. Greenhouse gases act like blanket around the earth, wrapping energy into the atmosphere. This rise in temperature of the planet can bring about ice caps melting, sea levels rising and other environmental challenges. The buildup of greenhouse gases can change Earth's climate and result in dangerous effects to human health, safety, welfare and to the ecosystems. There are distortions and pollutions in our water supplies, agriculture, weather, seasons, power, transportation system, and so on. However, it is important to state that, some changes in the climate are unavoidable; carbon dioxide can stay in the atmosphere for nearly a century. As such, the earth will continue warming, and the warmer it becomes, the greater the risk for more adverse changes to the climate and the Earth's system. Even though it is difficult to predict or forecast the impact of climate change, yet, what is certain is that the climate we are used to is no longer a reliable guide for what to expect in future. In view of the adverse effects of certain human activities, that cause earth warming and climate change, it is important that we begin to make choices that will reduce greenhouse gas pollution. In the light of this, it is to discuss the causes of climate and environmental changes and the need for environmental-friendly surroundings.

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Abstract No. 224

DETACHED LEAF TECHNIQUE: A NEW SCREENING METHOD FOR WHEAT THROUGH TOXINS

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ABSTRACT

Pathogenic microorganisms release toxic substance which are related to post specifically toxin seems to play an important role in host recognition at the site of initial contact of germinating spore on host surface thus, enabling pathogen in establishing the disease symptoms. In the present study toxin, crude toxin and spore suspension were taken and see how they produce the symptoms in lab. condition which is very easy and quick method for screening a number of variety at a time. virulent strain of Helminthosporium sativum isolates (H1,H2,H3,H4, and H5) isolated from susceptible wheat cultivars HD2329 UP 2338 on PDA were used. Fungal metabolites were isolated. Application of TLC purified toxin of different isolates, spore suspension, crude toxin were used on leaves of wheat in vitro to find out the role in symptom production. Both type of toxins of all the five isolates produce symptoms on detached leaves similar to one produced by spore suspension but there was variation among symptom of all isolates.

Abstract No. 225

THE UNIQUE BIO-PESTICIDE HAVING TWIN OBJECTIVES I.E. TO IMPROVE THE BIO PEST EFFICACY WHILE FURTHER STRENGTHENING THE SOIL FERTILITY IN DIFFERENT FIELD

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ABSTRACT

This paper deals with a new outlook towards pest control, wherein a unique blend of Bio-pesticide has been tested for its efficacy as well as improved soil fertility as a result studied alongwith pest control & subsequent soil fertility level. The tests of this formulation were conducted both under Laboratory & field condition with promising & encouraging results.
The bio pesticide used for the purpose is for in comprised of certain percentages of plant extract i.e. Azadirachta indica, Ipomoea carnea, Hotoptelea integrifolia, Nerium oleander and cow urine etc. Other Indian herbal antifungal & Insecticidal agents were also mixed in certain ratios to improve the potency of the recipe. This pest control formulation has resulted in hitterto unknown improvement in soil fertility as well besides higher bio ef ficiency and an environment friendly substitute for existing chemical based pest control methods available for use.

Abstract No. 226

STABILISATIONOF RICE BRAN AND EXTRACTION OF RICE BRAN OIL BY ULTRASONICATION AND MICROWAVE HEATING

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ABSTRACT

Rice bran is the most valuable by-product of the rice milling industry. Stabilisationoccurs the following advantages as it imparts the hardening effect for the better extractability, it increases the particle size and reduces the problem of fines and filtration, and it increases the bulk density and reduces the handling problem.

The oil yield increased from 19.8% to 49.8% with increasing the temperature from 5 to 500C.Temperature affects the performance of ultrasonic pre treatment by influencing the amount of vapor in ultrasonically generated bubbles. As a result, thecavitational effect would be weakened, and thus the oil yield remains unchanged with continuously increasing the temperature further. Therefore, ultrasonic temperature of 400C was seen to be suitable for ultrasonic pretreatment. The oil yield was found to increase with the increase of time from 15 to 45 min. It is evident from the results that the iodine value of ultrasonication treated rice bran oils was 88.74-82.52 mg/100g.The p-anisidinevalue, which measure hydroperoxidesandaldehydic secondary oxidation products of the oils were quiet low i.e. 0.443 to 0.523 respectively. The acid value of refined Ricela rice bran oil samples was 2.91 mg/g and oil extracted from ultrasonication of bran samples showed maximum acid value i.e., 2.10 to 3.42 mg/g respectively which might be due to high moisture, temperatureand lipase activity.The oil extracted by ultrasonication treatment have pleasant odor than that of microwave assisted extraction due to lesser amount of free fatty acids and the oil extracted at 500C was deep yellow in color, whereas the Ricela oil possess bland flavor due to deodorization and refining of these oils. 50% increase in oil extraction was observed when the pH was increased from 0.5 to 10.This may be due to increased separation efficiency of oil bodies from their original location at high pH and low surface tension. By increasing the temperature from 40 to 1200C the total vitamin E varied between 95.41 and 152.31g/g fresh rice bran when isopropanol used as a solvent. When isopropanol was used as a solvent, the free radical quenching capability was increased by increasing the temperature of microwave –assisted extraction.The rice bran oil extracted with isopropanol presented a higher DPPH scavenging activity.
As a concluding remark, the ultrasonicator and microwave extractions is considering as a promising technique for oil extraction because of its different physical and chemical phenomenon compared to those of other extraction methods.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

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Abstract No. 227

SOCIAL, ECONOMIC AND LEGAL ISSUES OF E-WASTE MANAGEMENT

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ABSTRACT

Electronic waste(E-waste) is one of the rapidly growing problems of the world today. It consists of the waste from electrical and electronic equipments which have reached their end- of- life period or are not in useful condition.It is estimated that 50 million tonnes of e-waste was generated globally in 2018. India is ranked fifth in the world amongst top e-waste producing countries after the USA, China, Japan, and Germany. E-waste contains many toxic substances that are released into the environment. Along with valuable materials (like gold, silver, platinum etc.), e-waste contains over 50 toxic elements like mercury, arsenic, lead, chromium, PCBs etc. These toxic elements can cause long-term health problems like neurological and endocrinal disorders and in some cases even cancer. Numerous issues (e.g. social, economic, legal etc.) are associated with e-waste problem and its management. E-waste collection, transportation, processing, and recycling is dominated by the informal sector. This sector is unregulated and untrained and due to this toxic substances are likely to contaminate the environment and harm the health of humans as well as other animals.E-waste management requires special treatment and recycling practices to avoid adverse environmental and harmful impact on human health. Despite widespread and extensive use of electrical and electronic equipment in India, the awareness regarding e-waste is very limited. Government or NGOs concerns about the issue of e-waste have limited success in creating awareness. Looking to growing problems of e-waste, the Central Government has made legal provisions of e-waste management. E-waste management requires the development of eco-friendly devices, properly collect e-waste, recover and recycle material by safe methods, dispose of e-waste by suitable techniques, restriction on the transfer of used electronic devices to developing countries, and raise awareness of the impact of e-waste. Integrated approach is needed for the management of e-waste which deals administrative, technical, environmental, regulatory, legislative, educative, stakeholders' participation and global cooperation.In our presentation we shall discusses the problems and various issues related with the e-waste management.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 228

ETHOLOGICAL EFFECTS OBSERVED POST ACUTE STARVATION STRESS INCOTURNIX COROMANDELICA (RAIN QUAIL)

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ABSTRACT

The present study was conducted on *Coturnix coromandelicato* observe the changes in behavior due to starvation which is a common resultant for our Avian species following urbanization and deleterious anthropogenic activities. These birds are available during rainy season and it was observed that they seemed to be fascinated by rains. A heavy downpour caused these birds to align behind one another silently to observe the falling rain.

The birds were observed for acute starvation stress and compared with the control. The birds in the control group were provided normal conditions of temperature, humidity, photo cycle, and were given feed and water *ad. libitum*. They showed maximum activity during the early hours of the day and late hours of the afternoons. This was the time when they consumed the maximum feed and water. During the rest of the day the showed normal movements in the cage and moved about effortlessly. They showed play behavior and were observed to crouch over one another during the evening hours and spread out during the day. The excretory matter produced was normal.

The experimental groups were given acute starvation stress for 72 hours. During the initialization of the experiment the birds showed normal behavior with water uptake similar to control. The birds sat in the center of the cage with their activity decreased in the evening. After first twenty four hours they were observed to take up almost all the water provided to them. The amount of excreta produced increased significantly. They moved about in the cage vigorously. Their water intake increased significantly. The birds were also observed to peck at the newspaper laid at the base of the cage. By forty eight hours of exposure the birds became quite active. They were running along in the cage, jumped a lot and there was marked restlessness. By the evening birds showed signs of weariness and settled down in the cage. The excretory matter decreased. When nearing the exposure to seventy two hours it was observed that the water consumption by the birds had decreased significantly. They all ran in the cage, all around the cage and had their heads stretched to the maximum limit. The birds were also observed to be quite puffed up and swollen by the end of the experiment.

Abstract No. 229

IMPACT OF EARTHWORM ACTIVITY ON SOIL NUTRIENT CYCLING THROUGH SOIL BIOTURBATION UNDER DIFFERENT LAND USE TYPES IN RAEBARELI DISTRICT

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ABSTRACT

The study was carried out under five different land use type i. e Natural forest(undisturbed reserved field), Agriculture field(Wheat and rice), Fallowland (abandoned agricultural plot to regain soil fertility), Degradedland (highly sodic)and Reclaimed field(After reclaimation of degraded sodic soils) in the Raebareli district to compare the effect of Bioturbation by earthworms under these land use types. Bioturbation of soil nutrient in different land use typewas influencedby various land management practices .Earthworms build and maintain the soil structure and take an active part in energy and nutrient cycling through the selective activation of both. Studies have shown that nutrient cycling was affected by the agriculture intensification and soil sodicity. Thus the nutrient cycling was found to be higher in Natural forest and reclaimed field, absent in degraded and lower in agriculture and fallow land. The nutrient cycling in the soil was measured by the casting activity of earthworm. There by highlighting that different management practices differently alter the soil nutrient cycling pattern. This study provides proof that agriculture intensification and soil sodicity can severely influence by earthworm diversity. The changes in the input rates and chemical characteristic of organic matter associated with varied land management practices also affect the role of nutrient cycling by earthworm.

Abstract No. 230

WASTE DISPOSAL: ITS MANAGEMENTS CURRENT SCENARIO RESPECT TO MUNICIPAL OF LUCKNOW CITY

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ABSTRACT

Waste is defined as any material that is not useful and does not represent any economic value to its owner, the owner being the waste generator. Depending on the physical state of waste, wastes are categorized into solid, liquid and gaseous. Waste management deals with all types of waste, including industrial, biological and household. In some cases, waste can pose a threat to human health. Waste is produced by human activity, for example, the extraction and processing of raw materials. Solid Wastes are categorized into municipal wastes, hazardous wastes, medical wastes and radioactive wastes. Managing solid waste generally involves planning, financing, construction and operation of facilities for the collection, transportation, recycling and final disposition of the waste. Waste management (or waste disposal) is the activities and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process. The composition of urban MSW in India is 51% organics, 17.5% recyclables (paper, plastic, metal, and glass) and 31 % of inert. The moisture content of urban MSW is 47% and the average calorific value is 7.3 MJ/kg (1745 kcal/kg). Lucknow Municipal Corporation's own estimates, Lucknow produces nearly 1,500 tones of solid waste daily that leads to about 45,000 tons of waste every month. Garbage is growing by heaps and bounds every day, be it Hazratganj, Chowk, Lalkuan, Hewett Road, Alambagh or Chander Nagar.

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Abstract No. 231

APPLICATION OF REMOTE SENSING AND GIS IN THE STUDY OF ENVIRONMENTAL HAZARDS IN THEREGION OF GARHWAL AND EASTERN ARUNACHAL PRADESH

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ABSTRACT

The area under investigation incorporates the Bhagirathi and Alaknandariver basin (Garhwal)and the Dibang and Lohit river basin (Arunachal Pradesh),experiences a frequent incidence of landslides as major mass wasting due to variedlithologies, slopes, tectonics, changing climatic conditions, erosion processes and landscape evolution posing significant environmental hazards.This paper attempt to discover a probable linkage of past extreme events like landslides, flash floods, cloud burst, earthquake disaster etc., with lithology, climate and tectono-geomorphic parameters. Such correlation panachewas nottestified by earlier workers. In the Garhwal region analysis of geomorphic parameters and rainfall patterns suggest orographic precipitation plays a major role in landsliding/flashfloods in the south of Main Central Thrust (MCT). The sediment yield and river discharge of post 1991 and 1999 earthquakes (>6.0 M) shows very high rates of erosion and land sliding. In Arunachal Pradesh, high precipitationcoincides with zone of high landslide proneness theMCTact as orographic barrier as in other parts of Himalaya suggesting west toeast along strike tectonic-climatic relationship in Himalayas. These landslide prone regions should be avoided for new settlements and future disaster management plans should develop tactically considering the geological, tectono-geomorphic and climatic parameters.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 232

TREATMENT OF WASTEWATER OF ORGANIC NATURE BY FENTON PROCESS: A REVIEW

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ABSTRACT

Pollution of water due to wastewater having organic impurities has become a major serious worry around the world.The Fenton oxidation process is a very effective method for the elimination of impurities of organic nature. However, there are three major drawbacks to the process: narrow working pH range, high cost and risk management in handling process, transportation and reagents storage (H2O2 and catalysts), and more importantly sludgeof iron related problems.Extensive studies have been performed on the optimization of Fenton processes for overcoming the various shortcomings.For developing a novel and effective method for the wastewater treatment with very high efficiency, the original status of the standard Fenton optimization processes is needed.The errors of all type of Fenton optimization processes, such as photo-Fenton,pre-Fentonor electro-Fenton, are reviewed and the reaction diagrams related to each of them are presented based upon the optimization techniques for the treatment of the wastewater having pollutants of organic nature.Along with that, in depth study have been performed for the suitability and applicability of combined Fenton optimization techniques like, heterogeneous electro-Fenton, photo-electro-Fenton and three-dimensional electronic-Fenton techniques for the treatment of organic pollutants of wastewater and the effect of some operational parameters like pH, concentration of H2O2 and the catalyst used are studied for the provision of the guidelines for optimization of parametric operations.Finally, directions for potential future studies for Optimized Fenton Processes are suggested.The purpose of the review is to assist researchers and engineers in gaining critical understanding and critical perspective of the Fenton process and its optimization process processes, and, hopefully, with the knowledge it can adapt to the Fenton process and its potential for development.

Abstract No. 233

SIGNIFICANCE OF FUNGI IN HUMAN BEING IN GLOBAL SCENARIO

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ABSTRACT

The kingdom fungi includes a diverse group of organisms that are neither plants or animals. They absorb nutrition from other organisms while playing the important role of ecological decomposers. What do mushrooms, bread, wine, beer and rotting organisms all have in common? It is obvious that same are edible while others are not. Mushroom are found in nature, while wine and beer are clearly beverages processed by humans. As for rotting organisms those typically are not of much interest to most people. They secures a major portion in Biotechnology and Pharmaceutical Industries. It have a great economic importance to the mankind. They also play an important role in medicine yielding antibiotics. In agriculture, by maintaining the fertility of the soil and causing crop and fruit disease, forming basis of many industries and as important means of food, some of the fungi are important research tools in the study fundamental biological problem.

Abstract No. 234

HEAVY METAL POLLUTION INDEX OF GANGA RIVER AT KANPUR (U.P.)

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ABSTRACT

Ganga river is a lifeline of northern part of India which fulfils the basic need of water to depending peoples. Kanpur is situated on the bank of river Ganga having lots of industries specially tanneries. A huge amount of treated or partially treated waste water is disposed directly or indirectly into the river and results in degradation of river water quality. This waste water contains several hazardous chemical specially heavy metals. These pollutants affect the whole aquatic ecosystem, animal, human and crops. Religious importance and increased pollution in Ganga river water attract the author to study on it. Therefore an intensive investigation has been carried out for one year to determine the heavy metal pollution in Ganga river at Kanpur (Uttar Pradesh). Five sampling stations were selected for study. This study was conducted for one year on monthly interval from January 2016 to December 2016. The heavy metal like Iron (Fe-), hexavalent Chromium (Cr6+), Cadmium (Cd), copper (Cu) and Lead (Pb) were analyzed and average values of these parameters were compared with WHO, ICMR, and BIS standards . Heavy metal pollution index (HPI) also calculated to determine the aggregate influence of individual heavy metals on overall quality of water. Obtained results are briefly discussed in this paper.

Abstract No. 235

ASSESSMENT OF GROUND WATER POLLUTION: A CHALLENGING PROBLEM IN INDIA

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ABSTRACT

Ground water is the water which is present beneath the surface of the ground. The rainwater which reaches the Earth surface percolates inside the ground and is stored there. In rural India Ground water dependency is about 90% for drinking purpose whereas for agricultural purposes the dependency is 75%. As the access to surface water resources are already being used, pressure on groundwater is growing day by day. Since ancient times Ground Water has been considered as the most reliable and purest form of water. These days it is being used for various activities so the pollution level is increasing. It contains several pollutants like pesticides, fertilizers, detergents, hazardous chemicals, sewage, industrial waste, municipal waste. These pollutants may change the water parameters like BOD, COD, DO, pH of the ground water and make it unfit for drinking. This not only affects the human health but it also affects the flora and fauna.

In India, around 19 states have reported fluoride contamination of ground water and approximately 10 states is contaminated with arsenic. The main reason for this contamination is the increasing urban population which ultimately leads to over-development, over-extraction, high living standards, industrialization and lack of proper management to match the demands and use patterns with the natural resource base. This study aims to define such problems, assess highly contaminated areas and provide remedial measures.

Abstract No. 236

STUDIES ON GENETIC DIVERGENCE IN RICE (*ORYZA SATIVA* L.)

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ABSTRACT

The present experiment, thirty rice high yielding genotypes were grown at research farm of Post Graduate College, Ghazipur (UP) during Kharif in 2018 and 2019 year to study the genetic diversity among these lines. These lines were evaluated for yield and quality contributing traits D2 analysis was performed to study the diversity pattern among genotypes. Based on performance of nineteen yields, yield contributing and quality traits, these genotypes were grouped into six clusters. Out of 30 genotypes, 13 genotypes were grouped in cluster II; and cluster I comprised only two genotypes. Maximum inter cluster D2 value was observed between cluster I and V (915) followed by cluster III and V (862). The greater the distance between the two clusters indicates wider the genetic diversity between genotypes and it may be used in rice hybridization programme for improving grain yield. Genotypes from more than one state were grouped in one cluster while genotypes from one state were grouped in more than one cluster. However, geographical origin was not found to be a good parameter of genetic divergence. Maximum intra-cluster distance was observed in cluster VI indicating greater genetic divergence between the genotypes belonging to this cluster indicated that genotypes within the same clusters having more genetic diversity. However, days to 50% flowering, 1000-grain weight, decorticated grain length, decorticated grain length-breadth ratio, elongation ratio, alkali spreading value contributed 92.05 per cent of total divergence.

Abstract No. 237

OPTIMIZATION OF GROWTH PARAMETERS FOR XYLANASE PRODUCTION IN LIQUID STATE FERMENTATION BY ASPERGILLUS FLAVUS USING CORN COBS AS SUBSTRATE

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ABSTRACT

A fungal strain Aspergillus flavuswas studied for the production of xylanase enzyme using corn cobs under liquid state fermentation process.Aspergillus flavus was isolated by serial dilution technique from degrading litter samples collected from Orchhaforest, Madhya Pradesh. It was maintained at 4°C on Potato Dextrose Agar medium in pure form. Then, the fungus was grown on Malt Extract Agar medium enriched with 1% oat spelt xylan to confirm xylanolytic activity on the basis of clear zone formation. Optimization of different growth parameters such as incubation period, temperature, pH, corn cobs concentration, nitrogen sources i.e. yeast extract and peptone concentration were studied for maximum xylanase production. High xylanase production was observed at 30°C temperature and 6.0pH after 6th day of incubation period. The maximum xylanase production of 1.22 IU/ ml was found at 18 mg/ml of corn cobs concentration. The nitrogen sources i.e. yeast extract and peptone was optimized at concentration 0.5 and 0.75 mg/ml. For maximum xylanase activity, certain parameters were also optimized such as incubation period (15 min), temperature (60°C), pH (5.5) and xylan concentration (20mg/ml).

Abstract No. 238

EXPLORING THE POTENTIAL OF BIOFUEL PRODUCTIVITY OF PHORMIDIUM, CYANOPROCARYOTE

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ABSTRACT

Biodiesel has gained much attention in recent years due to its eco-friendly nature, non-toxic characteristics, biodegradability and lower net carbon cycle compared to conventional diesel fuels. So Algae serve as a rich source for biofuel production owing to its many advantages and ability to grow in a high range of environment. Microalgae including cyanobacteria have been considered as the excellent feedstock of biomass for the production of biofuels. Microalgae are very fast growing as compare to terrestrial crops and plants. Some microalgae have shown good capacity to accumulate lipids to make them an interesting alternative for biofuel production. The present study deals with the lipid profiling and production of environment friendly biodiesel using Phormidium spp. (Phormidiaceae, Phormidioideae, Cyanophyta) under the influence of different concentrations of nitrogen and phosphorus containing nutrient medium. The present study revealed that Phormidium spp. grown under the combination of sodium nitrate 1.5g/l along with potassium nitrate 1.79g/l showed maximum synthesis of cyanobacterial lipid under 14:10 (light: dark) hours under saturated condition.

Abstract No. 239

EFFECT OF MYCORRHIZA AND RHIZOBIUM INOCULATION ON THE GROWTH AND YIELD OF MUNG (*VIGNA RADIATA*) PLANT

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ABSTRACT

In this study, the effect of Rhizobium and mycorrhizal fungal spores were examined on Vigna radiata (Mung bean). Seeds of Mung bean var. PDM-139-SAMRAT were sown in plastic pots, in the mixture of half soil and half sand. Rhizobium and mycorrhizal fungal spores inoculated individually and in combination with mung seeds. After germination data have been reported for plant height, leaf area, number of root nodules and pods, chlorophyll amount and yield measured after 30,45,60,75,90 and 120 days of sowing. Results of these experiments showed that Rhizobium and mycorrhiza positively affected the growth and yield of mung plant. Combined inoculation of Rhizobium and mycorrhiza shows better results in comparison to their individual inoculation. Mixture of Rhizobium and mycorrhizal spores improve the growth, yield, number of root nodules and pods, leaf area and chlorophyll amountof mung plant.

Abstract No. 240

ENVIRONMENTAL POLLUTION: SOLUTION IN A SUSTAINABLE MANNER

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ABSTRACT

In today's world environmental pollution is a great problem and it is influencing health of human population to a great extent. In India the main environmental problem relates to air and water pollution particularly in metropolitan cities and industrial zones. The poor are adversely affected as they are dependent on the common property resources for their livelihood.

The rapid growth of population, urbanisation, industrialization and many such factors are responsible for degradation of the environment. Environmental issues have become serious in many parts of the country. Although efforts are being made for environmental management and its conservation, still there is a need for coordination between public and government agencies in a fair manner to achieve the goal i.e. proper management of the environment in a sustainable manner, so that the future generations may survive in a healthy atmosphere.

Abstract No. 241

PREVALENCE OF NON COMMUNICABLE DISEASES IN PRE AND POST MENOPAUSAL WOMEN IN REWA DISTRICT

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ABSTRACT

Non Communicable Diseases is a global public health problem currently affections more than 200 million people worldwide. It is considered to be one of the most prevalent and costly health problems at Rewa district in India posing an economic burden on our country. The National Non Communicable Diseases foundation has revealed that one out of two women and one out of eight males in India over the age of 50 years suffer from Non Communicable Diseases, making India one of the largest affected countries in the world. Associated with very high mortality and morbidity impacting human capital and economy. Though, the pharmaceutical industries have several curative and palliative measures to quench the rising epidemic, the health outcomes are not very significant. It is obvious therefore that these diseases of public health concerns need better preventive strategies supported by policies and programs. These diseases affect populations in developing countries a decade earlier. According to the Director General of WHO, "The world has reached a decisive point in the history of Non Communicable Diseases and has an unprecedented opportunity to alter its course"(WHO, 2013). Demographic, socioeconomic aspects, technological innovations, migration, rapid urbanization, globalization, dietary/nutrition transition, motorized transport, physical inactivity, stress and personal habits/alcohol consumption and use of tobacco are the major drivers of epidemiological transition leading to obesity and Non Communicable Diseases. Developing countries such as India primarily concentrate on under-nutrition and rightly so, but can no longer neglect diseases due to over-nutrition.

Abstract No. 242

NOISE QUALITY MONITORING IN GORAKHPUR CITY

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ABSTRACT

In Past few decades traffic noise has become one of the major sources of noise pollution. The main aim of the present study is to monitor and map the noise level which was carried out at different locations ofIndustrial zone, commercial zone, residential zone and silent zone of the city. As compared to the standard prescribed by central pollution control board (CPCB) Gorakhpur city is suffering from high level noise pollution. It was observed that the value of Leq is far beyond the standards very high above the permissible limits. The main reasons of Gorakhpur city to be in grip of noise are population, high traffic, fast livelihood, intolerance among public, disobeying noise act and rules made for different zones. The pace of the development in the city is very high and is the major source of increase in noise level. The regulation of traffic volume and speed can be implemented to control noise pollution.The Leq, noise levels are calculated with the help of noise level meter to assess the day and night sound level variations. Gorakhpur city is rapidly developing city of Uttar Pradesh. The outcome of the study may be of immense helpin traffic planning and environment assessment with respect to noise pollution.

Abstract No. 243

NUTRITIONAL PROMINENCE AND DIET MANAGEMENT FOR SENIOR CITIZENS OF PRAYAGRAJ DISTRICT

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ABSTRACT

The present study is an attempt to investigate the pattern of nutritional and health status of the elderly male and female. 300 elderly respondents (150 males and 150 females) were randomly selected from the various areas of Prayagraj district of U.P. state. Out of these elderly respondents, maximum belonged to 60-70 years age. It was found that elderly had primary to middle class education status, with a large family structure and middle to poor socio-economic group. The education status was not upto the mark especially among female elderly because 48% belonged to illiterate class, whereas 38 per cent of males were having education upto high school but 26 % of males were also illiterate. Anthropometrically the nutritional status of respondents on the basis of calculated BMI and WHR, in which 44 percent of total respondents were classified as normal as they had BMI values between the range 18.50-24.99. Waist-hip ratio is 0.7 for women and 0.9 for men has been studied to correlate strongly with general health. Anaemia was more prevalent among women, whereas vitamin A deficiency was common in both the groups. Nutrient intake was found to be less in males in terms of energy, protein, fat carbohydrates, iron, and vitamin A and dietary fibre in comparison to the females. The elderly groups were hypertensive as they had the high systolic blood pressure i.e. >140 mm of Hg. Blood glucose level >200 mg/dl included in diabetics, gout or arthritis were observed among the group. The selected recipes in diet were formulated according to the food habits of elderly which have a potential of control and recover diseases. All the recipes maintained were having the good acceptability. Assessment of nutritional status is done to combat prevention and control the malnutrition and morbidity, with this regard nutritional status of elderly was assessed and formulated a suitable dietary package for healthy aging as second phase of study. Therefore, a suitable therapeutic dietary is an approach to improve the nutritional status of elderly and recover their diseased state.

Abstract No. 244

VARIATION IN MINERAL NUTRIENTS CONTENT IN GUAVA ACROSS THE GROWTH STAGES OF FRUIT

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ABSTRACT

Guava (Psidium guajava L.) is known as poor man's apple or Apple of Tropics, which is belongs to family Myrtaceae. Nutrients like nitrogen, phosphorus and potassium play a vital role for enhancing plant vigour and productivity of guava. Therefore, precise nutrients management is indispensible for various growth stages of fruit crop like guava to harvest optimum yield and quality. Therefore, fruits of eight ruling guava varieties (Allahabad Safeda, L-49, Lalit, Shweta, Arka Kiran, Salithong, Kimchu) in Bihar were collected at three different growth stages of fruit (Marble, stone hardening and at harvest) for estimation of primary (N, P, K) and (Ca and Mg) secondary nutrients to assess the nutrient profiling of NPK Ca and Mg for developing the better fertilization plan to harvest quality guava fruits. Results showed that the nutrient content particularly N, and K were recorded highest at marble stage, while the highest Ca and Mg accumulation was observed at stone hardening stage. However, the highest P and Mg in fruits were noticed at harvesting stage. This type of variations in mineral nutrient content in fruits can be explained by genotypic variability. Hence, it can be concluded that for the improvement of yields and quality requirement of specific mineral and nutrients is required at dif ferent growth stages. Therefore, guava growers are advised to apply adequate quantity of NPK, Ca and Mg fertilizers as per the need and stage of the crop.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 245

MICRO-NUTRIENT PROFILING OF AGRICULTURAL LAND SOILS OF TRIPURA

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ABSTRACT

Soil is a dynamic and critical resource not only for agricultural production and food security but also towards maintenance of most life process. On the basis of nutrients requirement of plant, the essential mineral nutrients have been classified into two groups macro-nutrient and micro-nutrients. Present communication deals with the micronutrient profiles of agricultural land soils of Tripura, India. The result of soil analysis of soil samples collected from randomly selected agricultural lands of Tripura revealed presence of high level of essential micronutrients like Cu, Fe and Mn in the soil samples, while the presence of other micronutrients like S, B and Zn are low level. Although, the soils of agricultural lands of Tripura are rich in micronutrients, but S, B and Zn are in minimum or in limiting concentration in the soil and hence need more emphasis which would be beneficial for increasing the crop yield.

Abstract No. 246

IMPACT OF AGRICULTURAL POLLUTION ON HUMAN HEALTH: PESTICIDES

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ABSTRACT

In recent years, people have been exposed to several types of substances with broad spectrum due to the rapidly evolving technology. One of these chemical substance groups is pesticides. Pesticides have been an essential part of agriculture to protect crops and live stock from pest infestation and yield decades. Despite their usefulness, pesticides could pose potential risk to food safety, theenvironment, all living things .concern about the environmental fate of these agents, which can emigrate from treated field to air, other land and water bodies. The importance of agricultural pesticides for developing countries undeniable. However, the issues of human health and environmental risks have emerged as key problem for these countries in accordance to a number of studies. In the last few decades,pesticides' usage increased the quantity and improved the quality of food. However, with the increasing amounts of their usage, about their adverse effect on non target organisms, including human beings has also grown. The purpose of this application is to explain the nature of pesticides and their history , classification, risks, and effects on health and the environment.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 247

CURRENT STATUS OF PRODUCTION, MARKETING AND DISTRIBUTION OF MUSHROOM IN INDIA

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[4]Department of Horticulture, Janta College, Bakewar, Etawah

ABSTRACT

The global mushroom industry has expanded very rapidly in the last two decades by the addition of newer types of mushrooms for commercial cultivation. However , mushroom as a vegetable is yet to find regular place among the Indian consumers. Despite of favorable agro-climate, abundance of agro wastes, relatively low-cost labour and a rich fungal biodiversity, India has witnessed a unexcited response in its growth. At present, the total mushroom production in India is approximately 0.13 million tons. From 2010-2017, the mushroom industry in India has registered an average growth rate of 4.3% per annum. Out of the total mushroom produced, white button mushroom share is 73% followed by oyster mushroom (16%), paddy straw mushroom (7%) and milky mushroom (3%). Compared to other vegetables; per capita consumption of mushrooms in India is meager and data indicates it is less than 100 grams per year. In this article we made an attempt to analyze the current scenario of the mushroom industry with the assistance of AICRP network centers located across the country and discussed the opportunities and challenges for development of mushroom entrepreneurship in India. The market for mushrooms continues to grow due to interest in their culinary, nutritional, and health benefits. They also show potential for use in waste management. However, as fungi, mushrooms have life cycles very different from those of green plants. The choice of species to rise depends both on the growth media available and on market considerations. Oyster mushrooms, which grow on many substrates, are easiest for a beginner. Shiitake mushrooms already have earned considerable consumer demand. Only two mycorrhizal mushrooms, morels and truffles, have been commercially cultivated. Mushroom cultivation offers benefits to market gardens when it is integrated into the existing production system. A careful analysis of potential markets must be the first step in deciding whether to raise mushrooms to sell. Many information resources are available for further research.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 248

BIODIVERSITY AND HUMAN HEALTH: ROLE FOR NATURE IN HEALTHY URBAN PLANNING

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ABSTRACT

It is well known that nature is good for human health and well-being. There is little understanding or articulation of this link among built environment professionals. The purpose of the paper is to explore the literature for evidence of the health benefits of urban nature and biodiversity. The question is whether there is an added health value to urban biodiversity policies. If there is, what can planners and other built environment professionals learn about the role of nature in healthy urban planning? The paper has three parts: the first discusses health and its determinants before examining policy on health and biodiversity in the urban setting. The second looks at the literature on nature and health. Attention is given here to the ecological services provided by nature as well as the benefits that derive from human interaction with nature. The final section sets out some initial thoughts about the implications of the paper's findings for urban planners and built environment professionals. The paper demonstrates that there are clear, documented, links between human health and nature, particularly in the urban setting. Together the results suggest that planners and built environment professionals could have a profound impact on community well-being by promoting urban nature and urban biodiversity in all new development.

Abstract No. 249

CORN SHEATH OF BLIGHT-MEANCING DISEASE IN MAIZE(ZEA MAIZE) AND ITS MANAGEMENT

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ABSTRACT

Zea maize crop is attacked by the number of fungal, bacterial and viral disease, out of which Corn sheath Blight (CSB) caused by *Rhizoctonia solani*.f.sp. sasakii (Kuhn). It is one of the most wide spread and destructive disease of maize in south east Asia countries. The occurrence of this disease has also been reported from other parts of the world, which causes significant yield up to 100 % *rhizoctonia solanii* can survive in the soil for several years and able to infect plants belonging to more than 32 families including many economically important monocots and dicots plant. The severity of the disease is favoured by humid weather with temp. around 28 degree Celsius, Poses challenge to maize grows due to its soil borne nature, and lots of resistance cultivars. It is indicated that none of the disease management approaches are effective against Corn sheath Blight (CSB), CSB is dif ficult to control through either fungicide or crop rotation alone. A number of quantitative trait loci QT Is control CBS have been identified that would help positive development of maize hybrids resistance to this disease management of CSB have been identified that would help positive development of maize hybrids resistance to this disease and molecular aspects of maize defence responses against *R. solanii* mution conclusion and statement and novelty of the work. The present review summarizes consolidated information in distribution yield, loss symptoms, pathogenic life cycle, epidemiology, and genetic structure of pathogen, population, molecular aspects of pathogenicity and its integrated management through cultural biological, chemical and genetic means. The consolidated knowledge presented in this review should help disease management and reduce crop yield, loss due to Corn sheath Blight pathogen.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 250

IN VITRO CULTURE OF A MEDICINAL HERB: AN APPROACH FOR BIODIVERSITY CONSERVATION AND SECONDARY METABOLITE PRODUCTION

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ABSTRACT

Higher plants are major source of natural products which are being used as pharmaceuticals, agrochemicals and food additives. Among these pharmaceuticals products are given more importance because medicinal plants are the most exclusive source of life saving drugsfor the majority of world's population.Over exploitation and habitat destruction caused by human population have created serious threat to the plant diversity. Thus, conservation and sustainable use of plant diversity is essential to protect earth and meet the future demand of world population.In vitro culture and plant regeneration ensure the production and rapid multiplication of disease-free plant.The biomass regenerated by in vitro culture of plant cell, tissue and organ can accumulate the same chemical compounds as the parent plant in nature and is being used for production of bioactive metabolites. Among various plants known for their medicinal values Ecliptaalba () is one of the most important plant. This plant is known for its medicinal value since time immemorial. Thus, in this study an efficient low cost shoot regeneration method from nodal explants has been standardized. The regenerated shoots were harvested when the multiplication stopped (after 5-6 weeks of subculture) and dried at 25 - 30ºC for phytochemical extraction. The extract obtained wasdriedand weighed and stored at room temperature for bioactive metabolite analysis. Of the 4.3022 gm dry weight of shoots grown in modified medium 0.5931 gm total metabolite was extracted. The dried extract showed presence of phenolics, flavonoids and antioxidant activity. Thus, this study showed that the in vitro culture of E. alba is the source for various bioactive compounds and could be exploited for commercialization of various bioactive compounds.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 251

ANALYSIS OF WATER QUALITY OF BABA POND AT ALLAHABAD FOR POTABLE PURPOSE

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ABSTRACT

Water plays an important and essential role in the life of an individual. Water for consumptive use is divided into surface and ground water resources. The present paper deals with physico-chemical characteristics of Baba Pond to evaluate it's suitability for domestic use. The water samples were collected randomly and seasonally from different localities and were taken to laboratory for further physico-chemical and bacteriological studies , in order to assess the potability of drinking water and it's lethal effects an human beings.

Abstract No. 252

ADVERSE EFFECTSOF NOISE POLLUTION AND ITS CONTROL MEASURES

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ABSTRACT

Swift urbanization leads to growth of vehicles and contributing severe environmental complications related to noise. According to Robert Koch a Nobel Prize Winner German bacteriologist "A day will come man will have to fight merciless noise as the worst enemy of health.

The noise levels recorded in residential areas ranged 40.7 to 90.8 dB (A) at Aliganj, 42.5 to 87.5 dB(A) at Gomti Nagar and 41.5 to 82.5 dB(A) at South city to 56.4 dB(A) during day time respectively. All the values recorded during day time were observed higher than the prescribed standard of day time noise 55 dB(A). Commercial cum traffic areas, the recorded day time noise between 67.8 to 89.9 dB(A) at Alambagh to 48.4 to 89.9 dB(A) at Aminabad and 51.3 to 87.9 at Hazaratganj whereas at industrial areas the recorded day time noise varied in between 52.8 to 87.8 dB(A) at Talkatora, 50.8 to 88.8 at Amausi and 51.2 to 87.8 dB(A) at Mohanlalganj respectively.

The study also highlighted the average levels of noise at all the selected areas showed high level of noise than the prescribed limit of CPCB. Government of India implements and local people adopt control measures definitely we can rid of from Annoyance.

Motor vehicle control, Land use control , Highway planning and design, Buffer zones, Noise barriers, Using dead end streets for residential complexes, Depressing freeways and arterial roads below the ground level, creating more gap between road and buildings.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 253

EFFECT OF NUVAN ON TESTIS HISTOPATHOLOGY OF HETEROPNEUSTES FOSSILIS (BLOCH)

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ABSTRACT

Organophosphates are used in agriculture as insecticides & pesticides due to their rapid biodegradibility nature to control pest but their broad spectrum of harmful effects extends far beyond the pest. Main objective of this paper is to carryout an empirical study to investigate the effect of sub lethal Nuvan on testis of the Heteropneustesfossilis. LC50 value of Nuvan was calculated & LC50 for 96 hours is found to be 0.98 ppm. For this study, the experimental group was treated with sub lethal Nuvanconcentraction of 1.43 ppm. Histopathological tissues were collected from both control group & experimental group following 30 days exposure of nuvan.

Abstract No. 254

REGUCALCIN, A MULTIFUNCTIONAL PROTEIN

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ABSTRACT

Regucalcin (or SMP30) is a calcium binding protein ubiquitously expressed in vertebrates and invertebrates. In humans, it is encoded by the RGN gene localized on X-chromosomes (Xp11.3-Xp11.23). The regulcalcin protein lacks EF-hand motif of Ca2+binding domain. The protein is also known to manage intracellular calcium homeostasis and shows cytoprotective effect. Deficiency in regulcalcin levels results in imbalance in glucose tolerance and lipid accumulation in liver of mice in vivo. Literature reveals that altered levels of Regucalcin are linked with various degenerative diseases and cancer. Hence, the protein regulcalcin has been rigorously explored as a biomarker in various disorders.However, the levels of regucalcin have not been correlated in many of the liver disorders so far. The present study will present and discuss plausible role of regucalcin during liver diseases, specifically liver fibrosis.

Abstract No. 255

ASSESSMENT OF WATER QUALITY INDEX IN UPPER GANGA RIVER BASIN AT URBAN STRETCHES

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ABSTRACT

The study includes analysis of various water quality parameters and calculates Water Quality Index (WQI) to have more simpler and rational understanding of water quality. WQI is a unique tool to understand water quality status in a single term so that appropriate treatment technique can be adopted accordingly. Monthly data set of physio-chemical parameters, such as pH, temperature, total hardness, chlorides, alkalinity, DO(Dissolved Oxygen), BOD(Biochemical Oxygen Demand), COD(Chemical Oxygen Demand), TDS (Total Dissolved Solids), phosphate and sulphate of water samples was collected at various urban stretches in upper Ganga basin for a decade. Urban locations chosen in this study are Rishikesh, Kanpur, Prayagraj and Varanasi. The data was collected for 10 years (2009-2019) to have better understanding of trend followed by WQI. The method used for the calculation of WQI is weighted arithmetic water quality index (WAWQI) method in which different water quality were given different weight according to their relative importance.

It was found that WQI was best for Rishikesh and worst for Kanpur each and every year (2009 to 2019). The WQI for Prayagraj and Varanasi was approximately same with some sort of variation in trend. Best WQI observed was 21.8 for Rishikesh in year 2011-2012 and worst WQI was 91.4 for the year 2015-2016.

Abstract No. 256

BIO-BASED NANO-COMPOSITES USED IN FOOD PACKAGING AND THEIR EFFECT ON THE QUALITY OF FOOD

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ABSTRACT

The technical breakthroughs and rapid developments in nanotechnologies enabling goods and products based on nanomaterials (NMs) has come to media and public attention as potentially one of the most significant technological advances of our time. Among these technical applications, nano-composite food packaging, which combines the NMs and conventional packaging, is at the forefront of applications in nanotechnologies, leading the whole industrial chain based on nanotechnologies with high speed development. Taking into account the status of the nano-composites applied in food packaging and present development trends, this study is focused on summarizing the basic applications of the nano-composites in food packaging as well as its risk assessment. Majority of materials employed for food packaging are non-biodegradable materials which do not meet increasing demands in society for sustainability and environmental safety. Thus, numerous biopolymers have been exploited to develop biodegradable food packaging materials. Nonetheless, the usage of biopolymers has been limited due to the poor mechanical and barrier properties. These properties can be enhanced by adding reinforcing nano-sized compounds or fillers to form composites. This article study variety types of biopolymer and nano-sized filler used to form bio-nanocomposite materials. The status summaries and the conclusions derived from this study are of benefit to manufacturers which produce the nano-composites used in food packaging, to general consumers and to governmental administration entities

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 257

TO STUDY THE COPPER TOXICITY ON HAEMATOLOGICAL AND HISTOPATHOLOGICAL CHANGES AND PROPHYLACTIC ROLE OF VITAMIN C IN THE FRESH WATER FISH CLARIASBATRACHUS (LINN)

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ABSTRACT

Industrial effluent containing heavy metals, on entering aquatic environment causes histopathological and haematological disturbances in the fish. The present study deals with the sub-lethal effects of copper on the humoral, enzymological and histopathological parameters in the teleost fish, Clariasbatrachus and the curative capacity of vitamin C were investigated. The 96 hour LC50 value of copper was determined using Probit method and was found to be 1.74 mg/L. Fish blood from two sub-lethal concentrations, vitamin supplemented media and toxicant and vitamin free control were analysed on 7th, 14th, 21st and 28th day of exposure. The haemoglobin (Hb), haematocrit (Hct), erythrocyte count (RBC) and oxygen carrying capacity were reduced compared to the control values up to the day 21 followed by a significant increase ($p<0.0001$) in all test concentrations on the day 28. The microscopic observation of RBCs in higher concentrations and long exposure showed crenation, immature RBCs with enlarged nuclei, hypochromia and cytoplasmic vacuolation. The plasma lactate dehydrogenase (LDH) activity increased ($p<0.0001$) progressively up to 21st day of exposure and then decreased significantly towards the control value on the 28th day. Copper exposure caused a dose and duration based increase in hepatotoxic biomarkers like glutamate oxalo transaminase (GOT) and glutamate pyruvate transaminase (GPT) in all the samples studied. The liver of exposed fish showed drastic architectural disruption such as hepatocyte degeneration, cell necrosis, inflammation with sinusoid dilation and thrombus formation. The present investigation clearly reveals toxicity of copper even at sub-lethal concentrations on the physiology and histology of the fish. The betterment of humoral, enzymological and histological aspects in vitamin treated fish illustrates the curative and prophylactic role of the vitamin against copper intoxication.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 258

QUALITY ASSESSMENT OF *RASTRELLIGER KANAGURTA* AND HYGIENE CONDITION OF DIAMOND HARBOUR LANDING CENTER, WEST BENGAL

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ABSTRACT

Sensory, nutritional, biochemical and microbial qualities of selected edible marine fish (Rastrelligerkanagurta) collected from Diamond Harbour fish landing center, West Bengal, during the period from July, 2017 to March, 2018 were assessed. Lower sensory score in winter season and higher score in summer and rainy season were seen. Lower scores indicated better quality of fish and correlated with hardness values. There were moisture content was found to be in the range of 72.56±0.11% and 79.09±0.08%. The protein content was found to be ranging between 16.59±0.28% to 19.27±0.15%. Higher fat content was recorded during breeding season and lower during spent phase or post breeding season. The PV recorded higher values mostly in the last quarter of the year and lower values in the first quarter.TVB-N and TMA-N values of fresh landed fish were found ranging between 19.52±0.04 to 23.02±0.04 mg/100g flesh and 9.64±0.06 to 12.37±0.07 mgN/100g flesh, respectively. Highest TPC was observed in the month of February (4.35±0.01 log cfu/g). In case of ice sample, high count was observed (>5 log cfu/ml). In water and swab samples TPC count was higher in month of September. The study revealed that the samples were contaminated by eight bacterial species, which includes Vibrio cholera, Escherichia coli, Staphylococcus aureus, Salmonella sp., Listeria sp., Clostridium sp., Faecal streptococcus and Faecal coliform. Except for ice, the microbial load in the fish, water and swab samples were below the acceptable limit as recommended by EIC (2012).

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 259

THE SAFETY AND QUALITY OF SOUS VIDE FISH FOOD

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ABSTRACT

"Sous vide" cooking of vacuumized plastic pouches fishfoods immersed in water provides constant and controllable time and temperature measurements throughout the process. Precise temperature control gives more choice over doneness and texture than traditional cooking methods. Cooking in heat-stable, vacuumized pouches improves shelf-life and can enhance taste and nutrition. This presents a recognizable fish food safety concern including the survival of harmful bacteria as well as conditions that do not achieve pathogen reduction during either the sous vide cooking or finishing (searing) process. Due to the low temperatures of sous vide processing; most research on this processing method is associated with biological hazards such as *Listeria monocytogenes*, Bacillus cereus and *Clostridium botulinum*. Not only has sous vide long been accepted by the fish food industry, in recent years, it has also been applied in households and in restaurants which are searching for innovative ways to attract more health conscious consumers. In this review, the authors present basic techniques, fish food safety, benefits and science of sous vide cooking and consider the great efforts the modern fish food industry is undertaking to extend shelf-life, ensure microbiological safety and maintain nutritional and organoleptic quality of sous vide fish products.

Abstract No. 260

EFFECT OFVACUUMPACKAGING ON EXTENSION OF SHELF LIFE OF TENUALOSAILISHA FILLET AT 5±1OC

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ABSTRACT

The study was conducted to assess the changes in microbial, biochemical, textural and sensory properties of vacuum packaged Tenualosailisha fillets under 5±1OC storage temperature, as a completely randomized design with two types of packaging, normal (P1) and vacuum packaging (P2), stored at 5±1OC. The fillets were subjected in triplicate for microbial (Total Plate Count), biochemical (TVB-N andpH), textural and sensory analysesat 3 days' interval starting from day 0.The Total Plate Count of P1 and P2 decreased initially with a subsequent increase in values reaching 5.79± 0.18 log cfu/g and 4.18±0.14 log cfu/g respectively after 15 days of storage which inferred that vacuum has a significant ($p<0.05$) effect in reduction of TPC. The samples (P1 and P2) crossed the acceptable limit (35 mg%)of TVB-N within 3 days and 9 days (39.7±0.12 and 35.4±0.12 mg%) respectively suggesting that application of vacuum was very effective over aerobic preservation ($p<0.05$) at 5±1OC. Texture profile parameters like hardness, springiness, cohesiveness, gumminess, chewiness and resilience showed a positive impact of vaccum package in retaining their original properties.

Abstract No. 261

SEASONAL VARIATION IN O:N RATIO IN FRESHWATER BIVALVE MOLLUSCS: LAMELLIDENS CORRIANUS (LEA)

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ABSTRACT

The distribution and biology of freshwater bivalve Lamellidens corrianus is influenced by local ecological factors (like temperature, pH, inorganic salts, type of soil etc.), water flow system and presence of micro-organisms, teleost fishes and seasonal variations in these parameters. Along the coast of Jayakwadi backwaters at Paithan, near Aurangabad, the habitat of Lamellidens corrianus has been noticed that the input of organic matter into water concern the fate of post-winter to summer shed leaves. This period, having comparatively high temperature for different time intervals along the coast of backwaters, enrich either with the nitrogen source only or with both nitrogen and phosphorus sources. The studies carried out on Lamellidens carrianus revealed that the data of respiration is considerably affected through different seasons at the time animal experiences different environmental parameters. The study carried out for 12 days at intervals of 5 days are under laboratory conditions and since no food was given to the animals it is expected that the starvation effect might have also occurred. Ammonia in general is a major nitrogenous excretory product of bivalves and there occurs a profound difference in loss of nitrogen in bivalves. This indicate shifts in physiological capacity with change in temperature, season and reproductive cycle that affect the nitrogen economy and the metabolic rate in somewhat disparate fashions. The O:N ratio is an index of protein utilization in energy metabolism, the seasonal variation of these ratio in Lamellidens might severely affect the physiology of these molluscs.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 262

EFFECT OF MICRONUTRIENTS AND RHIZOBIUM ON YIELD INCHICKPEA (*CICER ARIETINUM* L.) IN SEMI ARIDZONE OFCENTRAL UTTAR PRADESH CONDITIONS

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ABSTRACT

A field experiment was conducted on Student's instructional farm, at Chandra Shekhar AzadUniversity of Agriculture and Technology, Kanpur in to study the effect of Effect of micronutrients and Rhizobium on yield in chickpea (Cicer arietinum L.).In the present experiment 12 treatments T1 (Control), T2 (125 per cent RDN), T3 (100 per cent RDN),T4 (100 per cent RDN + 25 per cent N FYM), T5 (100 per cent RDN + 25 per cent N FYM + S40), T6(100 per cent RDN + 25 per cent N FYM + S40 + ZnO), T7 (100 per cent RDN + 25 per cent N FYM + S40 + ZnO + Rhizobium), T8 (75 per cent RDN), T9 (75 per cent RDN + 25 per cent N FYM), T10 (75 per cent RDN + 25 per cent N FYM + S40) , T11 (75 per cent RDN + 25 per cent N FYM + S40 + ZnO) , T12 (75 per cent RDN + 25 per cent N FYM + S40 + ZnO + Rhizobium) were laid out in Randomized Block Design(RBD) with three replication. Chickpea variety Uday was taken for study. The results revealed that the grain and straw yield of rice respond significantly with the different treatment combination. The highest mean grain (2354.25 kg ha-1) and straw yield (4760.88 kg ha-1) was obtained in T7(100 per cent RDN + 25 per cent N FYM + S40 + ZnO + Rhizobium). The current research analyzing the effects of N, P, K, S, Zn and Rhizobium level on yield characteristics showed that the treatment T7cause 52.36 % increase in chickpea grain yield and 45.54 % increase in straw yield over control.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 263

ON A NEW TREMATODE PARASITE OF THE GENUS DIPLOSTOMUMNORDMANN, 1832 (FAMILY :POIRIER, 1832) FROM THE INTESTINE OF THE AVIAN HOST ARDEACINEREA FROM EASTERN UTTAR PRADESH

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ABSTRACT

While working on the parasites of economically important vertebrates of eastern U.P., author examined 6 specimens of the avian host Ardeacinerea. Out of which, only two were found infected with the nine specimens of the trematode parasite of the genus *Diplostomum Nordmann*, 1832 of the family *Diplostomidae Poirier*, 1886. Its known species are *D. butei* and *D. ketupaenis* Vidyarthi, 1938; *D. duboisi* Anantraman & Balasubramanium, 1953; *D. heronei* Srivastava, 1954 and D. sterni Gupta, 1958. The new form differs from all the known species in different extent like size and shape of body, shape of adhesive organs, shape and size of testes, distribution of vitellaria and shape of ventral sucker. Accordingly, it is regarded as a new species of the genus Diplostomum Nordmann, 1832.

Abstract No. 264

NEED TO TAKE AN ACTION TO REDUCE GREEN HOUSE EFFECT

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ABSTRACT

The environmental problems like global warming, acid rain, air pollution, urban sprawl, waste disposal, ozone layer depletion, water pollution, climate change and many more affect every human, animal and nation on this planet. Our environment is constantly changing. current environmental problems make us vulnerable to disasters and tragedies, now and in the future. Climate disasters are on the rise. Around 70 percent of disasters are now climate related – up from around 50 percent from two decades ago. global climate change, the depletion of the ozone layer, desertification, deforestation, the loss of the planet's biological diversity and the transboundary movements of hazardous wastes and chemicals are all environmental problems that touch every nation and adversely affect the lives and health of their populations. The global carbon dioxide equivalent of greenhouse gases (GHG) in the atmosphere has exceeded 400 parts per million (NOAA). (Intergovernmental Panel on Climate Change Report) This level is considered a tipping point. The increased rates of fire counts in 2019 led to international concern about the fate of the Amazon rainforest, which is the world's largest carbon dioxide sink and plays a significant role in mitigating Global Warming. Other Amazonian countries have been affected by the wildfires in higher or lesser degree. Environmental protection is a practice of protecting the natural environment on individual, organizational or governmental levels, for the benefit of both the environment and humans. With rising global temperatures, the Arctic is warming twice as fast as the global average and scientists are becoming increasingly alarmed at the accelerating rate of permafrost thaw. Recently New Zealand lawmakers passed a "Zero Carbon" bill that it hopes will reduce its greenhouse gas emissions to a near-neutral level by 2050.

Abstract No. 265

ROLE OF BIODIVERSITY IN AGRICULTURE

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ABSTRACT

Agriculture Biodiversity refers to the variety and variability of animals, plants and microorganism on earth that are important to food and agriculture which result from the intraction between the environment, genetic resources and the management systems and practices used by people. It comprises the diversity of genetic resources and species and directly or indirectly for food and agriculture for the production of food, fibre, fuel and pharmaceuticals. Agriculture destroys diversity by converting natural habitat to intensively managed systems and by releasing pollutant, including green house gases. Biodiversity for food and agriculture indispensable to food security and sustainable development. it supply many vital ecosystem services such as creating and maintaining healthy soil, pollinating plants, controlling pests and providing habitat for wildlife for fish and other species that are vital to food production and agricultural lively hoods. Agriculture biodiversity is the outcome of the interactions among genetic possessions the environment and the management systems and practices used by farmers

Abstract No. 266

ELECTRICAL CONDUCTVITY MEASUREMENT OF SUGAR SYRUP

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ABSTRACT

For each region of sugar growing, a definite relation exists between syrup purity and max electrical conductivity xm, i.e. specific conductivity after dilution to 28-30oBx; an automatic scheme developed and tested for continuous measurement of xm is discribed with a diag. Syrup is diluted to~ 29o Bx with condensate and cooled to a definite temp. In a heat exchanger; the condensate flow is controlled by a pneumatic valve according to signals from a differential manometer connected to a pressure tube in the vessel where the conductivity is measured; the cold water value is controlled by signals from a resistance thermometer . Typical pH variations and the presence of much larger than typical Na, and K did not affect the measured purity value.

Abstract No. 267

IMPORTANCE OF CONSERVATION OF BIODIVERSITY FOR SUSTAINABLE RURAL LIVELIHOODS

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ABSTRACT

Biodiversity encompasses the variety of all life on earth. India has rich Biological diversity and one of the 12 diverse countries of the world. With only 2.5% of land area, India accounts for 7.8% of the recorded species at global level. India is also rich in traditional and indigenous knowledge both coded as well as informal. The wide spread loss of the global biological wealth is one of the most serious crises today at International level. As many of the World's diverse life forms from microbes to higher animals and plants have a direct or indirect influence on agricultural conservation of these organisms is essential for sustainable agriculture. To feed growing population, agriculture must be intensified to provide more food. It will also be essential to increase the resilience of agriculture by maintaining a wide array of life forms with unique traits, such as trees that survive drought conditions and cattle that reproduce in harsh conditions. Sustainable agricultural practices can both feed people and protect oceans, forests and other ecosystems. The purpose of this study is to review the literature on Conservation of Biodiversity for Sustainable Agriculture and to identify the main strands of thought and the assumptions that lie behind them.

Abstract No. 268

SOLVENT BASED PAINTS AND ITS IMPACT ON ENVIRONMENT AND HUMAN BEINGS

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ABSTRACT

Paints generally include pigment (the colour), carried by a resin and/or binder, a solvent to help the paint application, and a dryer. Some will include formaldehyde, arsenic, thinners, and foamers. Every year we like to paint our home, furniture, etc. for decoration, protection, identification, sanitation, but we forget the impact of paint on our environment. Volatile organic compounds (VOCs) in paints are very harmful for the environment and especially for the painters and paint industry workers who work with them regularly. The most important environmental impact from paints is the release of volatile organic compounds (VOCs) during the drying process after the coating is applied. Virtually everything but the solids in a typical paint formulation is released to the air. Once in the atmosphere, VOCs participate in the formation of ozone. This can cause some serious hazardous effect on our body like headaches, trigger allergies, asthmatic reactions, irritate skin, eyes, and put increased stress on vital organs such as the heart and not only paint but also its byproducts and hence paints has a dangerous impact on human beings and our environment too. In the presence of nitrogen oxides (NOx) and sunlight, VOCs react with oxygen in the air to produce ozone, the most toxic component of the form of pollution commonly known as smog. Ozone attacks lung tissue, and is very injurious, even in very low concentrations. Hence the present study aims to explore the effect of solvent based paints and analyse the impact of them on the environment and painters.

Abstract No. 269

SUSTAINABLE LIVELIHOODFRAMEWORKIN UTTAR PRADESH : A DISTRICT- LEVEL STUDYING, ISSUES AGRICULTURE, EDUCATION, HEALTH AND ENVIRONMENT

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ABSTRACT

The paper reviews the existing indicators of development and positions them within the environmental, economic, education, health and social dimensions sustainable livelihood. The paper finds that the sustainable livelihood, education system, agricultural activities andenvironmental issues. He is based on its simplicity and flexibility. He is one of the most comprehensive yet simple indices for measuring long-term livelihood security in rural areas, as it can function as an, agricultural, health,educational and social dimensions as well as a policy tool for promoting a holistic perspective among planners, administrators, and development workers. It presents empirical evidence of sustainable livelihood, agriculture, health educational and environmental at the district level in Ballia, Uttar Pradesh. In order to select suitable parameters of the component indices of sustainable livelihood, environmental responsibility, agricultural activities, education system and health issues, the paper presents a broad-ranging account of the ecological and socio-economic profile of Uttar Pradesh state. District-level Sustainable Livelihood, agricultural activities, education, health, social network in Uttar Pradesh not only identifies the general priorities but also the nature and types of policies to be pursued in each district to enhance its sustainable livelihood security status.Keywords: Communities; Households; Livelihoods; Resources; Rural Areas; Agriculture; Education; Health; Sustainable Livelihoods Framework.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 270

BIOLOGICAL CONTROL OF GRAM POD BORER, HELICOVERPAARMIGERA(HUBNER), USING ECTO-LARVAL PARASITOID, BRACON (HABROBRACON) HEBETOR (SAY)

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ABSTRACT

India is the largest producer of Chickpea (*Cicer arietinum* L.), accounting for about 67% of global production. It occupies nearly 31% of total area under pulses in the country and contributes over 37% of production. However, the average yield of chickpea is low because of the reason that insect pests are the main yield limiting factors. Among the insect pests, *Helicoverpa armigera* (Hubner) is a major pest of chickpea. It causing heavy losses every year. In India, crop loss due to *H. armigera* is more than 30-50 percent of the harvestable yield. The larva of *H. armigera* makes round holes in the pods, which may sometimes be as high as 30-40 pods. In recent years, management of this pest has become increasingly difficult because of its development of resistance to most chemical insecticides commonly used in India. The use of bio control agents can provide effective pest management and sustainable production of chickpea. During field survey, during post winter months (March-April-2019) in chickpea field, Braconhebetor (Say) (Hymenoptera: Braconidae), a gregarious, ecto-parasitoid was recorded of *H. armigera. B. hebetorfemales* first paralyze their host larvae by stinging and then laying variable numbers of eggs singly on the surface of paralyzed hosts. The paralyzed host larvae are then used as food sources for developing wasp. In this study, we explore the efficacy of B. hebetor against *H. armigera* under laboratory conditions, standardization of mass multiplication of B. hebetor on laboratory host rice moth (Corcyra cephalonica), comparison of Corcyra diets on the production potential of *B. hebetor* for the cost effective mass multiplication and utilization in biological control and to study the storage of the *B. hebetor* late-age pupae on various temperatures for different periods for their use in field release against *H. armigera* in chickpea.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 271

SCREENING OF SOME ESSENTIAL OILS AGAINSTBOTRYODIPLODIATHEOBROMAE CAUSING STEM END ROT OF MANGO

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ABSTRACT

The essential oils of 22 angiospermic plants of Kanpur were isolated and were screened against *Botryodiplodia theobromae* (causing stem end rot of mango) at 500ppm.Out of these essential oils ten essential oils (viz *Azadirachta Indica*, Cymbopogon citrates, Eucalyptus citriodora, *Lavendula angustifolia*. *Lawsonia Inermis*, *Melaleuca leucodendra*, *Ocimumcanum*, *Ocimum sanctum*, *Ocimum gratissimum* and *Zingiber officinale*) have shown 100 percent activity (absolute activity) against the test pathogen. While ten essential oils (viz. Ageratum conyzoides, *Aegle mormelos, Caesulia axillaris, Curcuma longa, Elettaria Cardamomum, Hyptissuaveolens, Murrayakoenigii, Murryapaniculata, Nepetahindostana* and *Tageteserecta*) has shown moderate antifungal activity i.e more than 50 percent activity and less than 100 percent activity. On the other hand the essential oil of *Callistemon lanceolatus* and peel essential oil of *Citrus reticulata* have shown poor activity (50 percent and less than 50 percent activity respectively).

The essential oil of *Ocimum gratissimum* was selected as most potent antifungal oil as it has shown activity at 50 ppm showing lowest MIC. The oil has shown activity up to one year. The oil was found to be thermo stable up to 120˚C.The oil has shown a broad range of fungitoxicity when tested against ten other fruit rotting fungi. On the basis of all these observations the essential oil of *O. gratissimum* can be exploited in the management of post harvest fungal diseases of fruits.

Abstract No. 272

PERFORMANCE EVALUATION OF CONCRETE BY PARTIALLY REPLACING CEMENT WITH INDUSTRIAL WASTE

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ABSTRACT

Concrete is the second largest consumed substance in the world after water, the per capita consumption of concrete is around 3 tonnes per year. Escalating industrialization and urbanisation requires large amount of natural resources for the production of cement. This, in turn, means that large quantities of natural resources and raw materials are being used for the concrete production around the world. To eradicate or curtail negative environmental impact of the concrete industry and promote environmental sustainability of the industry, the use of waste as material for concrete making is considered as an unconventional solution for preventing the exhaustion of raw natural resources. The wide availability of industrial waste makes it a suitable and dependable alternative in concrete production wherever available. Industrial waste is already used in concrete as replacement of cement, fine aggregate coarse aggregate and reinforcing materials.

In India, Hypo-Sludge (waste from paper industries) and Fly-Ash (waste from thermal power plants) are available in large quantity. Recycle of such type of wastes can be used as an admixture to make the green concrete structures. This will reduce the quantity of cement used and CO2emission and reduce global warming. These industrial waste materials can also be used as a partial replacement for cement in concrete. Different properties of fresh and hardened concrete, their durability and strength have been evaluated in concrete specimens and compared with the conventional concrete, where the cement has been replaced by hypo sludge and fly ash in varying proportions of 0%(without hypo sludge and fly ash), 10% + 5%, 15%+10% and 20%+15% by weight respectively . The aim of this study is to conduct a systematic research of the use of Hypo-Sludge and Fly-Ash as a supplementary cementitious material as well as a partial replacement of cement in concrete. It is envisaged that the studies, taken up in thesis, will provide useful experimental results which will be of value in improving the quality of construction.

Abstract No. 273

ALTERATION IN SERUM PROTEIN PROFILE INCLARIUSBATRACHUS (LINN.) DUE TO LEAD NITRATE [(PB (NO3)2]IN YAMUNA RIVER BRIJREGION, UTTAR PRADESH

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ABSTRACT

Present research deals with the effect of Lead nitrate, a highly toxic compound has been observed on various serum proteins of fish Clarias batrachus inhabitant in Yamuna River of Brij Region. This pollutant is abundantly found in Yamuna River of Brij region. Four different sites viz. KeshiGhat, VishramGhat, Gokul Barrage Ghat and Farah Ghat of Yamuna River in Brij Region (Mathura) were selected as sampling site. The lead Nitrate concentration in water samples was measured in two different seasons (pre-monsoon and monsoon) during study period. Fish were brought (Control) and captured (experimental) from different sampling site and transferred to departmental laboratory for serum Biochemical estimation. For experimentation fishes were caught from different sites and blood serum was collected for the biochemical studies than it carried to departmental laboratory and biochemical estimations were done. Serum parameters such as Total protein, Albumin, and Globulin were preferred under present study. Observation and results showed that all the serum parameters viz. Total serum Proteins, Serum Albumin, Serum Globulin were declined continuously from different sampling sites of downstream to KeshiGhat. The probable conclusion for the decline of serum proteins values due to extensive proteolysis, inhibition of RNA synthesis and disturbing the protein metabolism.

Abstract No. 274

SUSTAINABLE DEVELOPMENT OF ENVIRONMENT AND IMPORTANCE OF BIODIVERSITY

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ABSTRACT

Sustainable development is the need of the present time not only for the survival of mankind but also for its future protection. Unlike the other great revolutions in human history the Green Revolution and the Industrial Revolution the 'sustainable revolution' will have to take place rapidly, consciously and on many different levels and in many different spheres, simultaneously. On the technical level, for example, it will involve the sustainable technologies based upon the use of non-renewable, fossil fuels for technologies that take advantage of renewable energies like the sun, wind and biomass, the adoption of conservation and recycling practices on a wider scale, and the transfer of f cleaner and more energy efficient technologies to countries in the developing world.

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 improvement of indigenous peoples, a fairer distribution of wealth and resources within and between nations, the charging of true cost for products which exploit or pollute the environment, and the encouragement of sustainable practices through fiscal and legal controls and incentives. On the social plane, it will involve a renewed thrust towards universal primary education and health care, with particular emphasis on the education and social liberation of women. On the environmental level, we are talking about massive afforestation projects, renewed research into and assistance for organic farming practices and biopest control, and the vigorous protection of biodiversity. On the informational level, the need is for data that will allow the development of accurate social and environmental accountancy systems.

Abstract No. 275

DEVELOPMENT OF ANTIFUNGAL TOLERANCE AND GROWTH PROMOTION IN CHICKPEA BY TRICHODERMA VIRIDE DERIVED SILVER NANOPARTICLES

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ABSTRACT

Nowadays the challenges are facing by agriculture in the 21st century include climate change; resistant plant pathogens which cause diseases that damage crop production. This problem overcomes by the use of some microorganisms in agriculture fields. Species of Trichoderma viride is a fungal microbial community, which is well recognized as an agent of plant disease inhibitory microorganism and its promontory effect on plant growth. The different species of Trichoderma secretes many types of secondary metabolites which act as antibiotic and thus kill the plant pathogen. In recent times, Trichoderma is frequently used in nanotechnology. Recently nanotechnology has proven applications in agricultural sciences. These include the potential release of antimicrobials and biofertilizers. The silver nanoparticles (AgNPs) are the most important breakthrough in nanobiotechnology, due to their antimicrobial properties. There are many techniques are used to synthesize AgNPs, however, the biogenic technique which synthesized AgNPs is widely used and offers a way of reducing the use of chemicals, since it employs reducing agents and stabilizers extracted from organisms including bacteria, fungi, and plants. In the current scenario, biotic stress is a major problem in chickpea growing areas due to phytopathogenic fungi such as fusarium oxysporum, Sclerotiniasclerotiorum, etc. The aim of the present work is to synthesize biogenic AgNPs, using a filtrate of the biological control fungus Trichoderma viride as a biocontrol agent and biofertilizer, for potential use against the phytopathogenic fungus Fusarium oxysporum, which is responsible for wilt disease in chickpea. Furthermore, this work will be a step forward to achieve sustainable disease management in an economic and ecologically favoured pathway.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 276

SEXUAL AND REPRODUCTIVE HEALTH RIGHTS AS A KEY TO OBTAINING SUSTAINABLE DEVELOPMENT

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ABSTRACT

Worldwide priorities in women's health havethemselves been changing from a narrow focus on maternal and child health to the broader framework of sexual and reproductive health.In most developing countries, the poorest girls and women have the least power to decide whether or when to become pregnant. They also have the least access to quality care during pregnancy and childbirth, and this often results in maternal death. Reproductive rights are human rights, and gender equality, which depends on women's ability to fully exercise them, is key to sustainable development.

Abstract No. 277

WASTEWATER GENERATION AND TREATMENT STATUS FOR THE CITY OF KANPUR, ITS PAST, PRESENT AND FUTURE SCENARIO

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ABSTRACT

Kanpur is one of the biggest and most important industrial cities of Uttar Pradesh. It is situated on the right bank of river Ganga and relatively flat alluvial plain. In Kanpur, steep growth (35 percent) in population from 1991-2001 has put tremendous pressure on urban infrastructure such as water supply, sewerage, solid waste etc. The primary responsibility of providing water supply and sanitation rests with state government and more specifically with municipal government. This research paper deals with present status, gaps and future requirement for basic civic services and focuses on strategies and investment required by different scenario to meet the gap. In this research paper statistical analysis was done and it was projected that population of Kanpur will be as high 5,599,999 in 2025 followed by 8,632,000 in 2040. Since the water demand is proportional to the population.

The main concern of Kanpur city is the poor efficiency of wastewater treatment system which is degrading the quality of ground water and surface sources. The major concern lies in Ganga River. The wastewater generation in 2025 would be as high as 673 MLD while for the year 2040 it would be 1035 MLD. To meet the given figures as effective wastewater and well-planned treatment plant has to be designed and implemented which may include centralized and decentralized treatment facilities in accordance with the requirement of the particular water supply and sewerage system. Proper treatment should be given while discharging the effluent in to river Ganga as it should follow the given standards by central water pollution control boards, also there should be the least harm of aquatic life. The degradation of the water quality should be reduced to a large extent.

Abstract No. 278

GREEN LIBRARIES AND IT'SEFFECTIVENESS

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ABSTRACT

Green libraries are a new concept in the area of development of libraries, along with modernization of libraries, they are also being made environment friendly. Where their natural internal environment attracts the user of the library and also creates a conducive environment for reading. Green libraries emphasize on the use of natural resources and motivate the collection of natural resources like (water, paper & energy conservation). The paper discusses about how libraries can be modified in to green libraries. The paper focus on importance of green library in present time and the role of modern librarian to create a healthy green environment. In this paper also discuss the role of LEED (Leadership in Energy and Environmental Design) and IGBC(Indian Green Building Council) in sustainable development.

Abstract No. 279

BIGGEST NATIONAL DEWORMING DAY (NDD) CHALLENGE: SOIL TRANSMITTED HELMINTHS (STH)

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ABSTRACT

The National Deworming Day is a biannual fixed day approach to treat intestinal worm infections in children between 1-19 years of age. It is held on 10th February and 10th August every year. On this day, Albendazole tablets are given to all the targeted children. Parasitic worms or Soil-Transmitted Helminths (STH) are among the most common infections that live in human intestines and consume essential nutrients meant for the human body.Lack of which causes complications among the children that include, anemia, malnutrition, improper mental and physical development, etc. The parasitic worms produce thousands of eggs everyday that are, passed in human faeces and spread to others by contaminating soil in the areas where open defecation is predominant and sanitation is poor. According to the WHO, India has the highest burden of STH in the world, with estimates 220 million children (aged 1-14) at risk of worm infections. The Union Ministry of Health and Family Welfare (MoHFW) launched the National Deworming initiative on the occasion of National Deworming Day. The aim is to reach more than 320 million aged between 1 to 19 years to combat the parasitic worm infections. This year is the fifth edition of the National Deworming Day since it was launched in 2015.

Abstract No. 280

ENDANGERED SPECIES OF BIRDS IN INDIA

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ABSTRACT

India is a part of global biodiversity hotspot and the country which are endemic to many birds. Out of 10,000 species of birds reported from world, 1200 found in India, unluckilyseventy five species of Indian birds are globally threatened or edge of locally extinction. According to International Union for Conservation of Nature (IUCN) red list of birds 2018 marked 16 species of birds from India as critically endangered are Indian Vulture,Red-headed Vulture,White-rumped Vulture, Slender-billed Vulture, BugunLiocichla, Yellow-breasted Bunting, Baer's Pochard, White-bellied Heron, Sociable Lapwing, Spoon-billed Sandpiper, Jerdon's Courser, Pink-headed Duck, Siberian Crane, Great Indian Bustard, Bengal Florican and Himalayan Quail. Many species have become endangered because of habitat loss and fragmentation, poaching, small original range, habitat alteration, environmental pollution (both industrial and due to increased pesticide usage), disturbance in specialised habitat and disease. Some preservative majors should be taken into consideration and the establishment of conservation breeding centres are suggested to prevent the species that are on the verge of extinction.

Abstract No. 281

DECADAL TEMPORAL CHANGE ASSESSMENT OF DEPTH DUE TO STONE QUARRYING AND CRUSHING ACTIVITIES USING GEOSPATIAL TECHNIQUES

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ABSTRACT

The geospatial techniquealong with multi-datesatellite images allows to monitor, control and manage the active/abundant features of the earth's surface and provides a means to detect notable changes during time. The temporal changes in depth and volume of stone quarries in north-eastern part of tehsil Jhansi, Uttar Pradesh have been assessed in the present study.15 GCP (Ground Control Point) were randomly selected in x, y and z format i.e., latitude, longitude and altitude respectively, on high-resolution google earthimagesfor past 10 year (2008-2018)to find the changes in altitude. The result of this study establishes highest fluctuation in GCP point no.11 with an altitude from 235m to 212m and lowest in point no. 5 and 14 with variation of 1m which were mainly due to stone quarry and crushing activities. Generated depth profile from TIN surface model confirmsthat the maximum variation in high elevation values are the areas where quarrying activities were intensely occurred. Rundown ponds formation appearance as a result of rigorous quarrying and are resulting to environmental degradation which are dangerous to both human and environment.

Abstract No. 282

WASTE MANAGEMENT AND SOCIOECONOMICS IMPACTS

R.K. Vishwakarma

ABSTRACT

Waste management is the process of treating solid wastes and offers variety of solutions for recycling items that don't belong to trash. It is about how garbage can be used as valuable resource and gets a handsome amount from them to improve the economy also. There are eight major groups of waste management methods, each of them divided into various categories. These major groups are reuse, source reduction, recycling, compositing, fermentation, landfills, incineration and land application. Now a day's landfills give enhancement in air and water pollution which severely affects that environment and become fatal to the lives of human beings and animals. Incineration or combustion can reduce the volume of solid waste up to 20 to 30 percent original volume and it decreases the space occupied. Resource recovery is the process of taking useful discarded items for a specific next use. These discarded items are then processed to extract or recover materials and resources or convert them to energy in the form of useful heat, electricity or fuel. The idea behind recycling is to reduce energy usage, volume of landfills, air and water pollution, green house gases and preserve natural resources for future use.

Plasma gasification is another form of waste management. Plasma is a primarily an electrically charged or a highly ionized gas. Lighting is one type of plasma produces temperature that exceeds 12,6000F. This form of waste disposal provides renewable energy and an assortment of other fantastic benefits. Composting is one of the best method of waste disposal as it can turn unsafe organic products in to safe compost. There are so many waste that are hazardous and can not be disposed of without special handling which will prevent contamination from occurring.

Abstract No. 283

ASSESSMENT OF GROUNDWATER QUALITY AT PANTNAGAR

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ABSTRACT

Water is essential form of life. India is rich in terms of natural water resources but due to growing urbanization, industrialization and indiscriminate use of chemical fertilizers, pesticides in agriculture are causing heavy and sundry pollution in the aquatic environment leading to the deterioration of water quality. The groundwater is also affected badly by many illegal and unethical activities. Therefore, it is necessary to assess the water quality at a regular interval of time.PantnagarUniversity is located in the Tarai region which is rich in water resources. The university campus lies at 29°N latitude and 79°E longitude at an elevation of 243.8m above the mean sea level. The study was conducted to analyze the water quality of flowing artesian wells located in the University campus in pre-monsoon and post-monsoon seasons. The results revealed the maximum values of the groundwater quality parameters such as pH at6.9, Electrical Conductivity was 420 µs/cm, and total dissolved solids at 240 mg/l, total hardness was 350 mg/l, chloride was 21.3 mg/l, fluoride was 0.8 mg/l, and nitrate was 1.5 mg/l and acidity 80.3 of the artesian well water samples. All the results observed were compared with the standard guidelines recommended by the Bureau of Indian Standard (BIS) for drinking water. All the parameters were within permissible limits as specified by BIS (IS 10500:2012). However, in general, the water quality parameters of flowing artesian water of the study area is found suitable for drinking purposes.

Abstract No. 284

SOCIAL SCIENCES IN THE SERVICE OF NATURE AND HUMANITY

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ABSTRACT

In order to develop social sciences, nature and humanity , animals, rivers, mountains and flora, etc. present in the natural environment together create the environment. Before the development of human civilization in the lap of nature, nature is full of its full development and beauty. But as the human developed, so did the work of pushing the human towards the destruction. Man was doing his development contrary to nature which ensures its destruction. Thousands of years ago civilization evolved from nature. Chalks Darwin's evolutionary theory also says that civilization has developed from nature and not from nature. Social Science Political Science The politics of science has contrasted the link between nature and humanity in the name of development. In Indian politics, serious issues before political parties are also negligible. Because parties have to form government and govern. The hegemonic thinking of this regime has made humanist thinking exploitative of nature. Political parties or governments social policy.Which is based on inequality. This exploitation of nature is being done by the lesser class in the name of maximum people. As a result, most of the world's wealth, including India, has been accumulated under the monopoly of a few people and the United Nations has not yet responded to it. Social science has been made the biggest monster of nature by this class. It has been made the assumption that human development depends on the exploitation of nature. Whereas in reality it is destruction.For the sake of social science and humanistic views.

Abstract No. 285

AGRICULTURE AND DEVELOPMENT

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ABSTRACT

After 20 years of neglect by international donors, agriculture is now again in the headlines because higher food prices are increasing food insecurity and poverty. In the coming years it will be essential to increase food productivity and production in developing countries, especially in Sub-Saharan Africa and with smallholders. This however requires finding viable solutions to a number of complex technical, institutional and policy issues including land markets, research on seeds and inputs; agricultural extension; credit; rural infrastructure; storage; connection to markets; rural nonfarm employment and food price stabilization. This paper reviews what the economic literature has to say on these topics. It discusses in turn the role played by agriculture in the development process and the interactions between agriculture and other economic sectors; the determinants of the Green Revolution and discuss the foundations of agricultural growth; issues of income diversification by farmers; approaches to rural development; and finally issues of international trade policy and food security which are at the root of the crisis in agricultural commodity volatility in the past few years.

Abstract No. 286

AGRICULTURE POLLUTION AND HEALTH HAZARDS

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ABSTRACT

Agriculture Pollution is the main source of pollution in water and lakes. Chemicals from fertilizers and pesticides make their wayinto the groundwater that ends up in drinking water. Health related problems may occur as it contributes to Blue Baby Syndrome which causes death in infants. Blue Baby Syndrome also known as infant *methemoglobinemia*, is a condition where a baby's skin turns blue. This occurs due to a decreased amount of haemoglobin in the baby's blood. Haemoglobin is a blood protein that is responsible for carryingoxygen around the body and delivering it to the different cells and tissues. Pesticides have been an essential part of agriculture to protect crops. Agriculture pollution refers to biotic and abiotic byproducts of farming practices that result in contamination ordegradation of the environment and surrounding ecosystems, and/orcause injury to humans and their economic interests. The pollution may come from a variety of sources, ranging from point source water pollution (from a single discharge point) to more diffuse, landscape leve lcauses, also known as non-point source pollution. Management practices play a crucial role in the amount and impact of these pollutants. Management techniques range from animal management and housing to the spread of pesticides and fertilizers in global agriculture practices. Farmers have an increased prevalence of many acute and chronic health conditions including cardiovascular and respiratory disease, arthritis, skin cancer, hearing loss and amputations. Other health outcomes have been little studies in the agriculture workplace, such as stress and adverse reproductive outcomes. Some agriculture technologies adopted contain harmful elements such as nitrogen and phosphates, both of which negatively effect air and water quality. Its use causes the release of ammonia, nitrogen runoff and eutrophication, all of which have negative effects on the environment. High levels of air pollution can cause anincreased risk of heart attack, wheezing, coughing, and breathingproblems, and irritation of the eyes, nose and throat. Air pollutioncan also cause worsening of existing heart-problems, asthma andother lungs complications.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 287

STUDY ONJAGGERY: INCREASE NUTRITIVE VALUE THROUGH VALUE ADDITION

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ABSTRACT

Value-added jaggery may fetch better market prices and will have great export potential. Addition of aonla (*Emblica officinalis*) in jaggery has been done to improve its taste, nutritional value and ultimately to make value added product. The process for making jaggery with aonla as a natural source of vitamin C includes processing of aonla in suitable form, quantity to be added and the suitable stage for addition in jaggery. Value addition to solid jaggery by inclusion of nutritive substances through puffed rice, gram, sesame and various kinds of nuts (cashew, almond), vitamins, iron, and taste enhancers like chocolate powder will increase demand for this kind of jaggery. The nutritive value and palatability can be enhanced by preparing different kinds of jaggery with the addition of puffed rice, gram and groundnut in different proportions of 1:0.75, 1:1, 1:1.25, 1:1.5, 1:1.75 (Jaggerypatti), mixing with wheat flour in proportions 90:10, 80:20, 70:30, 60:40, 50:50 and 40:60 (Jaggery-wheat flour extruded snacks) and mixing with gram flour (Jaggery-besan snacks). The jaggery with 10% cocoa powder yielded a product (chocolate) which was very much acceptable as a substitute for chocolate. Value added jaggery will be a cheap source of nutrition to the poor and malnourished. Jaggery is rich in iron and folate which help prevent anaemia by ensuring that a normal level of red blood cells is maintained. This is especially beneficial for pregnant women. It ensures that a normal level of red blood cells is maintained. Moreover, it provides instant energy to the body. Regular intake of jaggery in any form with any food will help combat anemia. A person can obtain 3% of iron of daily value from 10grams of jaggery. Regular intake of jaggery with ginger juice helps in better absorption of iron and good for health.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 288

BRICK KILN POLLUTION

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ABSTRACT

Basic needs for the sustenance of life on earth are food, shelter and clothing. As shelter requires construction, for which bricks are in great demand as one of the raw materials. India is the second largest brick producer in the world. At least, 100,000 functional brick kilns are set up in Haryana, Punjab and Uttar Pradesh employing about 23 million workers. They contribute to approximately 65% of total brick production. On the contrary , brick kilns are identified as key contributor to air pollution, particularly fourth largest in PM10 emissions in N.C.R. region. In India almost all brick kilns run on coal. The emissions mainly comprise of fine particles of coal, dust, organic matter and small amount of gases, mainly GHG's, thus posing serious threat to the environmental air quality. Deleterious effects relate to health and safety issues of the employees as well as the nearby community including humans, plants and animals. Soil erosion is even encountered as top soil is removed ; thereby reducing soil fertility, enhancing the cost of replacing lost nutrients in soil and ultimately decline in agricultural produce. Authorities have even ordered the shutting down of many brick kilns which are not abiding by the rules and regulations. However, brick kiln pollution can be curtailed to some extent by the use of efficient chimneys, zig-zag technology, fly-ash brickswhich are light in weight, less expensive and above all, less polluting. Recently, eco-friendly approach has launched eco- bricks for a clean and green technology to combat pollution thus,safeguarding our environment.

Abstract No. 289

BIODETERIORATION OF TEMPLE STRUCTURE IN VRINDAVAN, MATHURA INDIA: PRE- AND POST-INTERVENTION STUDIES

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ABSTRACT

Steeped in the childhood memories of Lord Krishna stands Vrindavan, one of the most important pilgrim centers for the Vaishnavite Hindus in India. Flanked by the Yamuna River, this small hamlets' claim to fame is in fact its intimate association with Lord Krishna and its numerous temples which number more than four thousand. Brij region of Uttar Pradesh have rich in cultural heritage. The area of Vrindavan covered with beautiful temple structures which are more than 500 years old. Stone materials exposed to weathering are subject to biological colonization and consequently to biofilm formation, causing biodeterioration. The color changes on the stone substrates caused by biogenic pigments, mechanical stress on the mineral structure due to extracellular polymeric substances (EPS) and the accumulation of atmospheric pollutants by the biofilm are some of the deteriogenic effects, which modify esthetic and functional aspects of the work. The aim of this study was to determine biodeterioration and biofilm formation on marble and sandstone. The effect of the biocide benzalkonium chloride on biofilm formation was studied, and a chart produced of the treated stone collected from the temples of Vrindavan. Pre- and post-intervention microbiological studies, scanning electron microscopy and X-ray dispersion analysis showed a significant decrease of the biofilm flora after treatment. However, algae of the one genus were difficult to eradicate. These studies are a valuable contribution to determine restoration criteria against biofilm formation, to characterize chromatic variations of biological origin on the stone and to formulate conservation and restoration policies.

Abstract No. 290

CATHARANTHUS ROSEUS A HYPERACCUMULATOR IN POLLUTED RIVER SITE

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ABSTRACT

Phytoremediation refers to the technologies that use living plants to clean up soil, air and water contaminated with hazardous contaminants. An earthen pot experiment was performed. The effluent was collected from Gomati river site receiving sewage sludge. Soil was treated with it in various ratioviz; control, 1:10, 1:2, 1:1. The physiological aspects and anti-oxidative activities were also affected by the tratment. The growth and height of plant was negligibly reduced as compared to the control plants. Polluted soil increased the chlorophyll content and carotene concentration. The lipid peroxidation, hydrogen peroxide, and proline content also increased as compared to the control. The activity of anti-oxidative enzymes (SOD, CAT, POD), ASc and NPT varied with increasing concentration. The phenol and flavonoid contents also decreased with increasing pollutant concentration.

Abstract No. 291

IN – VITRO EVALUATION OF BOTANICALS AGAINST ALTERNARIA BRASSICAE (BERK) SACC., CAUSING ALTERNARIA BLIGHT OF RAPESEED – MUSTARD

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ABSTRACT

Rapeseed - mustard (Brassica campestris) is an important oilseed crop grown in Rabi season. Many biotic and abiotic stresses reduce the productivity of the crop. Alternaria blight of rapessed – mustard caused by Alternaria Brassicae (Berk) sacc. is one of the most important, widespread and destructive disease in India. Management of this disease through Chemical fungicides is not practicable, as causes bad effects to human health. Thus, disease management through use of botanicals will be of great significance. The effectively of some plant extracts were evaluated against Alternaria brassicae at 10.0, 15.0 and 20.0 concentrations in vitro. The result showed that all the plant extract or bulb extract used were more or less inhibitory to mycelial growth of fungus. The effectiveness of extracts increased with the increase of their concentrations and time of incubation. Among different botanicals tested, maximum inhibition in mycelial growth was obtained Eucalyptus (73.50%) followed by Datura (71.80%), Garlic (70.00%), Neem (68.70%), Ginger (65.50%), Turmeric (62.30%) and Tulsi (55.40%) at 20% concentration after 15 days of inhibition. All the treatments were significantly superior to control for disease severity and enhance the seed yield.

Abstract No. 292

IMPACT OF SECONDARY METABOLITES OF TRICHODERMAHARZIANUM AGAINST WILT PATHOGEN (FUSARIUM OXYSPORIUMF.SPCICERI) ISOLATED FROM BUNDELKHAND SOIL

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ABSTRACT

Biocontrol agents are widely used for the management of various disease in Agriculture. Trichoderma sp. is well known biocontrol agent and showed good potential having various mechanisms to inhibit number of plant pathogens as well soil borne diseases. It releases various secondary metabolites (volatile and non-volatile) which play an important role in crop defence. In present study, native Trichoderma isolates were isolated from chickpea infected plant of Bundelkhand region and used as biocontrol agent to study the impact of its secondary metabolites against chickpea wilt pathogen (Fusarium oxysporiumf.spciceri). JH1T8, showing fast growth was selected as representative Trichoderma isolate to test in vitro against chickpea wilt pathogen which was also isolated from chickpea infected plant of Bundelkhand region. To study the impact of volatile substances, inverted plate technique was used, in which highest % inhibition (77.8) was observed against isolate LT3FOC4 and lowest with LT3FOC23 (31.1). For the ability to produce non-volatile substances liquid culture filtrate v/v method was used. Wilt pathogen isolate JH1FOC5 shows highest 82.96 percent inhibition in colony growth, Followed by isolate LPV1FOC8 where 82.22 percent inhibition, which indicate highest mycelium growth inhibition at 20% culture filtrate v/v. Whereas at 15 % culture filtrate v/v mycelium growth inhibition was medium 76.30 to 67.41 in colony growth and minimal 74.07 to 18.52 percent inhibition in colony growth at 10 % culture filtrate.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 293

IMPACT OF DUST EMISSION ON PLANTS GROWING IN THE VICINITY OF CEMENT PLANT

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ABSTRACT

Present research work was undertaken to focus on thedust deposition efficiency of two plant speciesviz; Ficusbenjamina and Thevetia peruviana growing in the vicinity of cement plant and the response of dust deposition on the photosynthetic pigments of leavessuch as Chlorophyll 'a'. Chlorophyll 'b' and Total chlorophyll content.Cement industry is the major source of particulate matters, SOx, NOx and CO2, emissions along with heavy metals like nickel, cobalt, lead, chromium etc. The result showed maximum dust deposition in winter (0.695 and 0.964 mg/cm2) followed by summer (0.314 and 0.538 mg/cm2) and rainy (0.203 and 0.264 mg/cm2) for Ficusbenjamina and Thevetia peruvianarespectively. Reduction in chlorophyll 'a', chlorophyll 'b' and total chlorophyll were recorded by the method described by Arnon (1949) for chlorophyll estimation in the leaf samples of all selected cement dusted plant species and compared with non-dusted plant species. The result shows significant correlation (negative) between dust load and pigment content in all the seasons.The results revealed that the presence of toxic pollutants in cement dust might be responsible for the reduction in photosynthetic pigments. Cement dust pollution imparts more environmental stress on the plant species.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 294

AEROBIOLOGY IN THE MANAGEMENT OF SMUT DISEASES

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ABSTRACT

Majority of plant pathogen cause diseases in plants are airborn including bacteria, virus, fungi, mycoplasma in which fungi and bacteria dominate. From phytopathological view point the fungal spores are mainly airborne and may have an active or passive mechanism of liberation, release the spore in turbulent air layer. In plant pathology the short distance transport of spore is much more important and effective in causing diseases than long distance transport.

The smut disease is generally caused by Ustilago (Smut spore) which is airborne. In the present study the load of smut spores in air was analyzed by using Tilak air sampler for the period of one year from January to December. The smut spores trapped on cello tape from the air were counted and identified under microscope. The monthly record of smut spores was 1526 spores/m3 in January, 770 spores/m3 in February, 3010 spores/m3 in March, 1848 spores/m3 in April, 574 spores/m3 in May, 112 spores/m3 in June, 1036 spores/m3 in July, 392 spores/m3 in August, 980 spores/m3 in September, 241 spores/m3 in October, 1456 spores/m3 in November and 1050 spores/m3 in December.

During the period of investigation minimum, maximum temperature, relative humidity and rainfall was recorded. During investigation the field survey of some crop plants like wheat, sugarcane, maize, barley & grasses was done and it was found that there is a great correlation in spore load of atmosphere with disease development. In the month of January to April smut disease was prevalent in the study area. On the basis of spore load of the atmosphere we can spray broad spectrum fungicide like propiconazole etc and other preventive measures to save our crops.

Abstract No. 295

IMMOBILIZATION OFMETALLOALKALINE PROTEASE ENZYME FOR STAIN REMOVAL FROM FABRIC USING MAGNETIC NANOPARTICLES

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ABSTRACT

Protease enzymes playsan important role invarious type of industries such as food, pharmaceutical, cosmetic,detergent, leather, meat and textile industry etc. According to recent studies protease immobilization onto magnetic nanoparticle is effective in fabric cleaning. Magnetic nanoparticle increases the effectiveness of enzyme immobilization and its stability. Further, there is an increment in enzyme reusability as well as improvement in enzyme recovery because of their low toxicity factor. Although, implementation of these nanomaterials arerestricted due to the efficacyof their recovery processes.With the help of an external magnet these magnetic nanoparticles can be easily removed from the reaction mixture, therefore it is recommended to use solution of these nanoparticles. Immobilized enzyme compare to free enzyme in solution are more vigorous and more resistant toenvironmental changes. Diversity of an immobilized system allows an easy recovery of both enzyme and product. Nanomaterials for enzyme immobilization consist of novel and interesting matrices as they have an advantage of having high surface to volume ratio. The behavior of enzymes immobilized on these matrices is due to their Brownian motion effect.

Abstract No. 296

DIVERSITY OF INDIAN LYCOPODS IN THE HILLS OF NORTHERN WESTERN GHATS, REGION OF INDIA

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ABSTRACT

With their diverse ecological and topological condition hills in western ghats support diversified floral components . The present attempt was undertaken to Enumerate the non-flower primitive vascular cryptogams, especially Lycopods in the hills of northern western ghats to fill the knowledge gap of valid documentation of the lycopods from the areas. During this survey, the author collected the number of species of Lycopods .where as maximum number of species was collected at western ghats hills. The vascular cryptogams are mainly present in a humid condition containing the environment, High temp also destroyed the lycopods in the environment and very low temperatures is also harm ful to the growth and development of vascular cryptogams

Abstract No. 297

EFFECT OF GYPSUM AND PRESS MUD ON DRY MATTER YIELD AND CONCENTRATION OF LEAD (PB) IN MAIZE (*ZEA MAYS*)

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ABSTRACT

A field experiment was conducted to study the effect of gypsum and press mud and Pb on the yield and concentration of Pb in maize plants and D.T.P.A.- extractable Pb in partially amended alkali soil. The result indicated application of gypsum and press mud along with Pb@20kg ha–1 improved the yield of maize in treated soil. As regard response to varying level of Pb application in soil, results showed that maize yields increased significantly when Pb was applied @20kg ha–1. Further supply of Pb reduced the yield and dry matter of the crop. The concentration of Pb in plant increased significantly with increasing level of Pb in soil. However, application of gypsum and press mud reduced the Pb concentration in maize tissue. The content of extractable Pb in post harvest soil decreased when soil was treated with gypsum and press mud.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 298

HEALTH ISSUES OF WOMEN WASTE PICKERS WORKING IN INFORMAL SECTOR

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ABSTRACT

Waste is an unavoidable by product of human activities. Economic development, urbanization and improved living standards in cities contribute to increase in the quantity and complexity of generated waste. On a global level approximately 5.7 kilogram of waste per person per day generated. Waste management is necessary activity around the world, but involves a variety of health problems, especially for women. Waste pickers are informal workers who collect recyclable materials to earn a small wages on daily basis. They are most of the time migrants who had fled their state or country because of hard living conditions. Their life and working conditions are extremely difficult and unhygienic. They are at the base of the hierarchy of collection and disposal of waste. The Female waste pickers are more vulnerable. They search waste without using any safety instrument like hand gloves, shoes, mask etc. They suffer many types of dangerous diseases such as respiratory disease, infectious disease, eye infection, anemia, chronic cough and fever etc. Carrying heavy loads of material over long distances leads to musculoskeletal problems also. Some female waste pickers are often harassed by general public, police and scrap merchants. It is not only their working environment that is very unhygienic and disease prone; their living environment is equally bad. So it is the role of government, civil society and organization to emancipate the livelihood of the women waste picker.The protection, prevention and rehabilitation of the female waste pickers are vested in the hands of social workers and general public.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 299

SEASONAL WATER QUALITY ESTIMATION OF A PERMANENT WASTE WATER SYSTEM AND ITS IMPACT ON THE POPULATION OF CHLAMYDOMANASSPECIESE : KANPUR(UP)

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ABSTRACT

In shallow waste water systems, planktons play an important role as primary producers. A lot of work have been done in the field of physico-chemical analysis of lentic water systems. Limnological study is valuable for water quality monitoring. The present work involves the use of abiotic components of permanent waste water system to assess the density fluctuation in the different species of Chlamydomonasregarding with seasonal variations throughout the year.

With the seasonal variations, the values of pH, magnesium & calcium (Mg, Ca), dissolve oxygen & dissolved oxygen matter (DO, DOM) indicate variation in water quality which directly influenced the population of *Chlamydomonaselliptica*, *Chlamydomonasglobosa*, *Chlamydomonas* intermedia and *Chlamydomonas orbicularis*. On the basis of chemical analysis in terms of DO & DOM the shallow water system is moderately polluted. The fluctuation in the population densities of *Chlamydomonas elliptica*, Chlamydomonasglobosa, and *Chlamydomonas orbicularis* were greatly negative correlated with all mentioned physico-chemical parameters.

Chlamydomonas intermedia showed positive co-relation with DO and negative co-relationwith DOM. Whenever Mg, Ca& pH showed negligible values.

Abstract No. 300

BIORATIONALS AS ANTI FEEDANT: AN ECOFRIENDLY NATURALLY OCCURRING MANAGEMENT OF SPILOSOMA OBLIQUA WALK. (LEPIDOPTERA: NOCTUIDAE)

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ABSTRACT

Experiment was conducted to test the petroleum either seeds extract of Aconitum ferox Nees. *Azadirachta indicia A. Juss*. Croton tiglium Linn. leaves extracts of Adhatoda vasica Nees., Ocimum sanctum Linn. and flower extracts of Butea frordosa Koen whereas acetone unripe fruits extracts of *Argimone maxicana* Linn. and Datura alba Nees. Aerial parts of Calotropis procera Linn., flowers of *Spilanthus acmella* Linn., extracts of *Thevatia nerifolia Juss*., and rhizomes extracts of Zingiber officinalis Linn. prepared under the laboratory conditions. The seeds extractives of Neem, Azadirachta indicia (family:meliaceae) gave the highest antifeedancy to the larvae of Bhar hairy caterpillar, Spilosoma (Dicrisia) obliqua Walk. (*Arctiidae: Lepidoptera)*, when compared to remaining plant extracts. The sequence of protection power can be arranged based on their respective EC50 values in the following ascending order as: *D. alba, C. procera, T. nerifolia, A. vasica, A. ferox, S. acmella, Z. officinalis, B. frordosa, C. tiglium, O. sanctum, A. maxicana and A. indicia.* The EC50 values are as 0.4571.> 0.4467 > 0.3754 > 0.3454 > 0.3235 > 0.2399 > 0.2188 > 0.1894 > 0.1622 > 0.03861 > 0.02188 > 0.0180, respectively.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 301

AN OVERVIEW OF ARSENIC AND FLOURIDE TWO MAJOR GROUND WATER CONTAMINANTS AND THEIR DELETERIOUS EFFECT IN INDIA

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ABSTRACT

Arsenic and fluoride are the two main groundwater pollutants present naturally in India, China and Bangladesh in South Asia. The disease caused by the regular intake of arsenic and fluoride commonly known as Arsenicosis and Fluorosis respectively. It is now recognized as a major public health concern and world's biggest natural groundwater calamities affecting a large number of people around the world especially people belonging to the rural areas. Over the entire distress population progressively, both fluoride and arsenic contamination have a prominent high cost on society and addressing the problem would need additional consideration from government agencies and society.

Abstract No. 302

HABITAT SUITABILITY MODELINGOF WILD PIG USING MAXENT IN THE BUFFER ZONE OF BANDHAVGARH TIGER RESERVE, MADHYA PRADESH, INDIA

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ABSTRACT

Ascribed to the nocturnal behavior, estimating the spatial distribution of Wild Pig (Sus scrofa) is exigent. However, the massive crop damage caused by them necessitates estimating their distribution pattern. We used maximum entropy modeling (Maxent) on the basis of presence-only data along with environmental variables such as vegetation, aspect, elevation, river density, ruggedness, slope and road density to model the occurrence probability of Wild Pig in Bandhavgarh Tiger Reserve. The environmental variables were defined under major vegetation type, topographical features and human-induced disturbance. Data on species occurrence was collected from the line transects and indirect evidences on 10m radius circular plots during the years 2017 and 2018. The model selection was done on the basis of minimum Akaike's Information Criterion (AIC), calculated with the help of ENMTools. Environmental variables that contributed <9 percent were jettisoned. Percent contribution of the variables determining the distribution of Wild Pig was vegetation (53.7%), slope (9.8%), elevation (16.4%) and road density (20.1%). Among the vegetation types, grassland exhibited maximum influence over the distribution of the species. However, agriculture displayed negative correlation with the distribution pattern. The map, based on the predicted probabilities of occurrence, exhibited potentially highly suitable habitats accounting for 192.69 sq. km., i.e., 12.54%of the tiger reserve. Although Wild Boar is a major threat to the crops of local people, it is also one of the preferred preys of large cats in the reserve. Thus, this study is an attempt to illustrate the significance of modeling spatial distribution of the species in the preparation of efficient and practical management plan that promotes a conflict-free co-existence of wild animals and local people.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 303

EFFECT OF DIFFERENT SONICATION PERIOD AND AMPLITUDE ON ALGAL LIPID EXTRACTION

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ABSTRACT

Biofuels and biochemical production from algae biomass is a multistep process which includes algal cultivation, harvesting, drying, cell disruption, extraction of biomolecules followed by their application in production of desired final products. Biomolecules extraction from algal biomass majorly depends upon the extraction efficiency of the process applied. Current methods of extraction of biomolecules intensively employ cell disruption and solvent extraction. Ultrasonication has been proved as a potential cell disruption technique considering the lesser thermal degradation of heat-sensitive biomolecules, lesser disruption and extraction time. Ultrasonic disruption is an exothermic process. It produces considerable heat during processing the algal biomass. Many of intracellular compounds are heat-sensitive, so the treatment temperature must be monitored and regulated in order to maintain their native structure, bioavailability and functionality for the intended commercial application and production. Apart from thermal degradation, hydroxyl radicals generated during sonication react with most of biomolecules and cause damage to them. These free radicals produced as result of prolong exposure of algal biomass to sonicator. Hence, the quality lipid or other biomolecules recovery depends upon the optimization of various parameters e.g. ultrasonication period, ultrasonication power, amplitude, the solvent used during ultrasonication and the moisture content of the biomass. Here in this study, we have used four different solvents (two polar and two non-polar), six different sonication time period (0-30 minutes), under varying ultrasonication amplitude for lipid estimation to optimize the sonication parameters for Chlorella minutissima.

Abstract No. 304

ANTIMICROBIAL ACTIVITY OF ESSENTIAL OIL : A SAFE PRESERVATION APPROACH

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ABSTRACT

New approaches for food conservation and preservation are now emerging, as many studies have shown that the use of synthetic preservatives and chemical additives is leading to intoxication, cancer and other degenerative diseases. This generates the need to look for conservation alternatives that cover the same antimicrobial properties and compatibility with food. In this aspects, new antimicrobial agents of natural origin, as is the case of essential oils (EOs) obtained from aromatic and medicinal plants, have been found. EOs have antimicrobial activity against a wide range of microorganisms and antioxidant activity, this is generally attributed to phenolic compounds owned by Eos. These compounds have an important role in food preservation contributing to safety and shelf-life extension of food products. The improvement in food safety is due to the inhibition of pathogenic microbial growth and reduction of biogenic amines, mainly in meat and dairy products, as a consequence of the inhibited growth of spoilage microorganisms. The extension of food products shelf-life results from enzymatic reduction, mainly due to their antioxidant activity. Most EOs are composed of terpenes, and other aromatic and aliphatic constituents with low molecular weights. However , it must be taken into account that EOs have an intense taste and smell, which can modify the taste and aroma of food products. The present study focus on the use of EOs as food preservatives and actas alternative to synthetic preservatives which still maintains antimicrobial activity without changing the organoleptic characteristics of food products.

Abstract No. 305

STUDIES ON FUNGAL DIVERSITY IN SOME TRADITIONALLY PREPARED *AMYLOLYTIC STARTERS* OF NORTH EAST INDIA USING CULTURE-DEPENDENT AND CULTURE-INDEPENDENT TECHNIQUES

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ABSTRACT

In this study we tried to investigate the diversity of fungal communities in traditionally prepared amylolytic starters of India by using culture-dependent and culture-independent techniques. Wickerhamomy cesanomalus (47.4%), *Pichianomala* (13.4%), *Saccharomycopsis fibuligera* (5.0%), *Pichia terricola* (3.8%), *Pichia kudriavzevii* (7.9%) and *Candida glabrata* (18.8%) were identified by amplifying the ITS1-5.8-ITS2 gene of 26SrRNA. The diversity of yeasts and molds in forty samples of amylolytic starters of North East India viz. *marcha, thiat, hamei, phut, chowan, dowdim, humao and khekhrii* was investigated by PCR-DGGE analysis of the D1/D2 domain of the 26SrRNA gene. The DGGE results showed the average distributions of yeasts showed Saccharomyces cerevisiae (16.5%), *Saccharomycopsis fibuligera* (15.3%), *Wickerhamomyces* anomalus (11.3%), *S. malanga* (11.7%), *Kluyveromyces marxianus* (5.3%), *Meyerozyma* sp. (2.7%), *Candida glabrata* (2.7%), *Saccharomyces* sp. (1.3%), *Hyphopichia burtonii* (1.2%), *Schwanniomyces occidentalis* (1.1%), *Pichia kudriavzevi* (1.0%), *Torulaspora delbrueckii* (1.0%), *Zygosaccharomyces bailii* (1.0%), *P. guilliermondii* (1.0%), *C. parapsilosis* (0.4%), *Komagataella pastoris* (0.3%), *S. Capsularis* (0.6%), *S. Paradoxus* (0.6%), and *C. tropicalis* (0.1%). Average distributions of molds was *Aspergillus penicillioides* (5.0%), *Rhizopus oryzae* (3.3%), sub-phyllum: *Mucoromycotina* (2.1%), *Mucor circinelloides* (0.5%), *Aureobasidium pullulans* (0.4%) and *Xeromyces bisporus* (0.3%). The NGS results using high throughput sequencing tool revealed Ascomycota as the dominantfungal phylum. Presence of Zygomycota in marcha distinguishes it from that ofthiat. The results of NGS analysis revealed dominance of yeasts in marcha whereas molds out numbers in case of thiat. This is the first report on fungal communities of traditionally prepared alcoholic starters of India using culture dependent ITS-PCR and culture-Independent tools such as PCR-DGGE and high throughput sequencing.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 306

SCOPE OF BIOTECHNOLOGY IN ENVIRONMENTAL PROTECTION

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ABSTRACT

Biotechnology is proving its worth as a Technology that can contribute to sustainable industrial development. It has play important role toward environmental pollution abatment by using environment friendly technique and products.It is used for development and regulation for remediation of contaminated environment and are increasingly learning how to apply the knowledge about biological metabolic processes in the field of environmental protection, including waste management and environmental rehabilitation. Environmental biotechnology is a field with great potential. In future, bacteria and other microorganisms will most likely also contribute to sustainability and cost efficiency in other areas, including the cosmetics and detergent industry as well as in the production of fine and bulk chemicals. There are many examples of areas where environmental biotechnology can be applied. By focusing on selected examples, the current dossier shows Baden-Württemberg at the forefront of exploitation and investigation of the potential of environmental biotechnology.

Abstract No. 307

EPOXY/FLY ASH FROM THERMAL POWER PLANT /NANOFILLER NANOCOMPOSITE: STUDIES ON MECHANICAL AND THERMAL PROPERTIES: A REVIEW

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ABSTRACT

Nowadays, the development of eco-friendly, low cost, lightweight and high-performance polymer nanocomposites is swiftly developing as a multidisciplinary research field with results that could widen the versatile applications of polymers to many different industries. The imperative harmful effect of global processes has been the production of huge quantities of industrial waste like fly ash. During the last notable decades, there has been a gradual increment in the production of fly ash generated by Thermal Power Plants in India due to the increasing demand for energy since more than 80% of the country's demand for electricity is faced by coal-based Thermal Power Plants.At present scenario in India, there are 167 coals based thermal power plants where 400-550 MT coal is being used every year which discharges 190 MT ashes and out of this 70-80 % is fine to fly ash. So long the requirement for energy expands more; the generation of fly ash is unavoidable. Accruing, the unused stock of coal ash is increasing tremendously every year, and the management of coal ash from thermal power plants has been a matter of major interest in the country, mainly for two reasons: the requirement of large land area for disposal, and the hazard of causing air and water pollution. Apart from total production, a small quantity of fly ash is primarily utilized by the cement industry while an abundant proportion goes to ash ponds and landfills which cause huge environmental problems. Hence, the problems related to the diminishment of environmental concern, greenhouse emissions, and disposal has become a major dispute to environmentalists and scientists. So the utilization of fly ash becomes necessary. The article presents the utilization of industrial waste, fly ash as reinforcement for matrix in making lightweight, high strength composites. Studies have revealed that fly ash associated with some unique properties such as low density in range 1.8-2.5g/cm3, wide availability, ease of dispersion, during molding show uniform stress distribution, good filler factor, good thermal resistance and high adsorption activities, which help in developing high-performance green low cost compared to conventional materials and eco-friendly composite For the matrix mechanical strength compatibility with that of the incorporating material is necessary. A structural resin-like thermosetting matrix such as epoxy-based on DGEBA [diglycidyl ether Bisphenol A], needs to be used. Epoxy resin can be widely used to develop composite material due to its superior properties like excellent adhesion to filler, higher thermal stability, easy processing ability, good chemical resistance and low density. The filler/epoxy nanocomposites are extensively used in engineering, anti-corrosive coatings, electronic materials, and aerospace industries.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 308

ECONOMIC GROWTH AND ENVIRONMENTAL TRASH: A COMPARATIVE ANALYSIS OF BRICS ECONOMIES

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ABSTRACT

BRICS in many ways has engrossed attention of the world today. The resource utilization in most of the developed countries have reached its saturation level thereby , lowering any possibilities for further surge in the economic growth rates inmost of the advanced countries. Therefore, many BRICS economies are emerging as an effective proxy to the developed world in the international market. The likelihood of developed countries international market being captured by BRICS economies is to a large extent valid due to the growing penetration of BRICS economies in the international markets. BRIC's (prior to 2010)potentialwas easily noticeable in their competence of subsiding the adverse consequences of global economic meltdown of 2007-08 on their respective economies. However, the study asserts that this admirable level of economic advancement in BRICS economies has been realized on the cost of mounting environmental trash. In this light, the current study tries to investigate the contribution of BRICS economies towards environmental dilapidation while embarking on this journey of economic progression. The period of study is 1971 to 2014. Since, Brazil, India and South Africa initiated international trade in 1995, Russia in 2012 and China in 2001, therefore, to get an exhaustive analysis, the study tries to investigate the impact of international trade on selected environmental indicators of BRICS economies by dividing the period in pre-trade and post-trade period. The study hence, examines the connection between Gross Domestic Product (GDP), trade openness and selected environmental variables: CO2emissions per capita, CO2emissions andCO2 intensity {Carbon dioxide (CO2) from use of coal as an energy source}.The study is significant in a sense that there are few researches available on the comparative analysis of the impact of economic growth on the environmental quality of BRICS economies. Also, since South Africa was added to BRIC group in 2010 therefore, there are insufficient researches available on the comparative analysis of BRICS economies from the environmental perspective.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 309

NEURAL NETWORK MODELLING OF RIVER GANGA ALONG RISHIKESH AND KANPUR

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ABSTRACT

India's surface water flows through 14 major river basins. In addition to major rivers, there are 44 medium and 55 minor river basins. Due to the spatial and temporal variations in precipitations as well as the rapid growth of population and improved living standards, the demand for supply of water resources in general and fresh water in practical is increasing. As a result of this, per capita availability of water is reducing day by day. . However, surface water resources in the country are in much greater volume when compared to the groundwater resources. The increasing loads from point and non-point sources are deteriorating the quality of surface as well as ground water resources. There is a tremendous variation both in the quantity and quality of discharge from region to region in these river basins. In general, the extent of organic pollution in rivers is usually expressed in terms of Biological Oxygen Demand and Dissolved Oxygen. Both BOD and DO are interrelated to each other, increase in one parameter results in decrease in the value of another parameter.

The paper describes the training, validation and application of artificial neural network (ANN) models for computing the dissolved oxygen (DO), chemical oxygen demand (COD) and biochemical oxygen demand (BOD) levels in the Ganga river (India). Two ANN models were identified, validated and tested for the computation of DO and BOD concentrations in the Ganga river water. Both the models employed Thirteen input water quality variables measured in river water over a period of 10 years each month at two different sites. The performance of the ANN models was assessed through the coefficient of correlation (R) , root mean square error (RMSE). The model computed values of DO and BOD by both the ANN models were in close agreement with their respective measured values in the riverwater. The identified ANN models can be used as tools for the computation of water quality parameter

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 310

INDUSTRIAL WASTE MANAGEMENT AND RELATED LAWS IN INDIA

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ABSTRACT

Industrial Waste management laws basically includes the transport, treatment, and disposal of all types of waste, including hazardous waste and non hazardous waste. Waste laws are designed to minimize or eliminate the uncontrolled waste materials into the environment in a manner that may cause different types of harmful effects, and include laws designed to reduce the generation of waste and increase recycling of waste. Industrial waste include dirt, small stones, mortar, and concrete, scrap material, oil, chemicals, scrap, agricultural waste from restaurants. Industrial waste may be solid, liquid or gaseous. Regulatory efforts include identifying and classify types of waste and mandating transport, treatment, storage, and disposal policies. Waste management in India performed by the Union Ministry of Environment, Forests and Climate Change. India launched the Swachh Bharat mission in 2014 which is a five-year nationwide cleanup effort. Before this scheme for systematic and total waste management , many cities in India had already launched individual efforts directed at municipal waste collection of segregated waste, either based on citizen activism and/or municipal efforts to set up sustainable systems i.e. Swach based in Pune , Clean Cities Championship in Warangal, NirmalBhavanam, NirmalNagaram or Clean Homes, Clean City in Alappuzha, Engage 14 campaign in Gangtok, Zero Waste in Andhra Pradesh, Waste Management in Mysore and Solid Waste Management Round Table, Bangalore .India has many regulatory laws for solid waste management under Environmental Protection Act i.e. Solid Waste Management Rules, Plastic Waste Management Rules, E-waste (Management) Rules, Bio-Medical Waste Management Rules, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, Construction and Demolition Waste Management Rules are formed in 2016.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 311

EFFECT OF UREA ON DEGRADATION OF CELLULOSE, HEMICELLULOSE AND LIGNIN ON LEAF LITTER OF SACCHARUM OFFICINARUM

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ABSTRACT

Organic matter degradation is an important process for existence of any ecosystem since it ensures mineral recycling and soil fertility. Present study involves the study of urea in the degradation of leaf litter of Saccharum officinarum L. For this purpose collected leaf litter was treated with different concentration of urea such as 5%,10%, 15%, 20% and 25% and incubated in 2×2×2 feet diameter pits for 60 days. After 60 days of incubation loss in dry weight has been analysed in terms of cellulose, hemicellulose and lignin with respect to contents untreated and unincubated litter. At 60 of incubation reduction of 16.7%, 34.6%, 61.4%, 81.9% and 98.7% in cellulose content and 24.9%, 55.7%, 75.1%, 92.1% and 96.7% in hemicellulose and 7.8%, 21.1%, 48.0% and 84.9% in lignin content after treatment with 5%, 10%, 15%, 20% and 25% urea respectively. During this phase 11 fungal strains have also been identified. Out of which 2 species belongs to Aspergillus genera and single species of each genera of Bipolaris, Chaetomium, Circinella, Colletotrichum, Curvularia, Gilmaniella, Fusarium, Scopulariopsis, Neosartorya.

Abstract No. 312

SOCIAL SUSTAINABILITY AND BUDDHIST PRAGMATISM

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ABSTRACT

The Buddhist traditions hold that Siddhartha Gautama was born to a royal family in Northern India. A prophesier predicted that he would become either a great king or a great religious leader. His father tried to infuse the former and ensured all forms of unsatisfactoriness away from his son's life. However, Siddhartha's curiosity compelled him to climb beyond the palace and discover the condition of average human beings. In his adulthood he encountered four human conditions; a dead person, a dying person, a decrepit person, and an impoverished person which challenged his understanding of his world. Having been ignorant to such human conditions, the question of human unsatisfactoriness and a solution for its alleviation preoccupied his adult life. Thus he renounced his grandeur and wealth, and set out on a course that would lead to answers.

Lord Buddha says that life is permeated with suffering caused by desire, the suffering ceases when desire ceases, and enlightenment obtained through right conduct, wisdom and meditation releases one from desire, suffering and rebirth. The Buddhist vision for society evolved as the religion expanded; it was not part of the Buddha's original philosophy under the Bodhi tree. Buddha established rules of appropriate behavior. He also urged his lay followers to respect and have compassion for all beings. The Buddha did not attempt to gain political control, but he did have ideas about how rulers should govern. He taught that they had an obligation to the people they ruled. He taught that in the ideal society rulers would be fair and obey their own laws, and would freely provide grants to their subjects so that they could set up businesses. Thus the ideal of Buddhism is an amalgam of essence (theory) and existence (practice) which teaches the path of renunciation on one hand and the social business on the other.

Abstract No. 313

E-WASTE RECYCLING: AN APPROACH TOWARDS GREEN INFORMATION TECHNOLOGY

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ABSTRACT

Green information technology deals with the study and practice of using computer resources efficiently and eco-friendly manner. The goals are to reduce the use of hazardous materials and equipments to increase energy efficiency during the lifetime of product and improve recyclability or biodegradability of defunctional products and factory wastes. In recent years, companies in the computer industry have come to realize that going green is in their best interest, both in terms of public relations and reduced costs. This present research deals with various green actions currently undertaken by the several computer industries, as well as issues that have been raised regarding these initiatives and presents a study about the maximizing green information technology by e waste recycling processes. Ultimately green information technology focuses onvaroius ways in minimising the environmental impact, its main aim is to find and encourage new ways to bring down pollution, to figure out alternative technologies, and designing more recyclable products.Green IT is an environmental approach towards generatingless e-waste and power consumption that helps in use of computer resources and its peripheral devices efficiently. With the growing use of computer and other various electronic devices the energy consumption and carbon footprint are also increasing day by day. Recycling of e-waste is one of the major approaches towards green IT. This present reasearch focuses on the approaches of green computing and how it minimizes the environmental impacts of computer devices and other electronic devices effectively by e-waste recycling.The result will help the stakeholders in implementing green computing approach as the approach leads to improve the informal sector and creating job opportunities in e-waste recycling practice.

Abstract No. 314

RESOURCE USE AND MANAGEMENT OF LIVELIHOOD AND EDUCATION CONTEXT IN RURAL HOUSEHOLDS IN ALIGARH, UTTAR PRADESH

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ABSTRACT

The concept of livelihood and education system use of resources have become increasingly important and vital in the issues of poverty reduction, environmental management and human development. Livelihoods are defined as the means by which the households obtain and maintain access to the resources, necessary to ensure their immediate and long term survival. Livelihoods comprise of the capabilities, resources, assets and activities that are required to enhance one's living conditions. There is an interconnection between the use of resources and management of livelihood framework. The main purpose of this research paper is to understand the resource use and management of education and livelihood context in rural households in Aligarh, Uttar Pradesh. The main areas that have been taken into account include, the sustainable livelihoods framework, significance of resource use and management of livelihoods, natural resources and livelihoods of individuals in rural areas, utilization of resources, characteristics of rural livelihoods, assets of individuals in rural areas, rural health and rural education.

Abstract No. 315

DIVERSITY OF MICROBIAL COMMUNITY DURING DIFFERENT PHASES OF OYSTER MUSHROOM CULTIVATION

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ABSTRACT

Oyster mushrooms are used all over the world due to excellent nutritive and medicinal value. Oyster mushroom cultivation has different phases containing complete mycelia run, primordia initiation, first flush, second flush, and third flush. This study was examined bacterial diversity during different cultivation phases. Complete mycelia run contain only 2 types of bacteria whereas, primordial stage contain 16 types different bacterial colony. First flush also contain same type of bacterial diversity. Similarly second and third flush contain 21 and 13 type of types of bacteria respectively. All isolated bacterial colony differ morphologically were either Gram negative rods, cocci or Gram positive rods. Functional diversity of all bacterial isolates were tested such as phosphate solubilization, siderophore production, ACC- deaminase production and antagonistic property. Out of all bacterial isolates eleven bacterial isolates shows phosphate solubilization activity and fourteen has siderophore production activity. Most of the bacterial isolates inhibits growth of molds during mushroom cultivation. In this study it was concluded that microbial diversity during oyster mushroom cultivation phases showed positive effect towards healthy fruit body formation.

Abstract No. 316

EFFECT OF CLIMATE CHANGE ON BIODIVERSITY

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ABSTRACT

Climate change impacts on biodiversity are already visible- shifting migration ranges of insects and animals, modified flowering and fruiting cycles and species extinction.

As a developing country, India can little afford the risks and economic backlashes that industrialized nations can. With 27.5% of the population still below the poverty line, reducing vulnerability to the impacts of climate change is essential. Scientist predicts that on the Sunder bans Delta (shared between India and Bangladesh) more than 2 million people will be losing the land they live on. As a sea level rise will make it inhabitable and render them homeless. Further the increase in average temperature due to Global Warming, on the high altitude Himalayan Mountains is already found responsible for heavy melting in the glaciers. This is creating a potential future threat to the continued freshwater supply in the rivers in the entire South Asian region which supports over 1/6the of Humanity.

The climate of the earth is changing. The climate has always been variable, but Climate change refers to a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period. Projected future changes are likely to result in changes in the distribution of species and ecosystems, and overall biodiversity loss. Climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use.

This paper deals with some important issues related with biodiversity and climate change suggesting some remedial measures like carbon sequestration through afforestation, green belt development along industrial developmental projects, urban forestry in metro cities and in-situ as well as ex-situ biodiversity conservation and equitable sharing of biological resources in sustainable development.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 317

A CURRENT TREND-IMPACTS OF CLIMATE CHANGE

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ABSTRACT

The challenges of global climate change is tremendous and complex. Current trends of climate change impact includes increasingly frequent heat waves, intense storms, sea level rise to biodiversity loss, climate change is already impacting societies across the world, providing an uncomfortable preview of an unstable climate future. Climate change is an existential threat as it risks disrupting the stable temperatures that have allowed human civilization to flourish over the past 16,000 years.

To combat the ill effects of climate change we must put emphasis on the Paris Agreement which emphasizes on the "negative emission technologies" to remove carbon from atmosphere beyond complete decarbonisation to actively reduce carbon from atmosphere by becoming net positive. To achieve this goal one needs to use and shift on the renewal technologies and on the methods like afforestation, carbon capture, regenerative agriculture.

Government is taking initiatives and is progressing to lead the way in zero carbon and net positive approaches.Business persons, Industries, Communities and citizen collaboration is required to mitigate and adapt to the effect of climate change.

Climate is marked by instability and so nothing can be predicted it is uncertain. Disruption comes in variety of way, may pose risk to food, energy, transport, human settlement, infrastructure and supply of resources.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 318

DEHYDRATION OF PRE-TREATED WHITE BITTER GOURD: ENHANCING FOOD QUALITY

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ABSTRACT

Bitter gourd (*Momordica Charantia* L.) gourd is a highly nutrient rich vegetable but due to lack of adequate post harvest storage and processing facilities during peak harvesting season, farmers are bound to sell their produce at very low prices. Value addition in white bitter gourd not only enhance the food quality but also produces product which is more palatable & healthier than the raw fruit, thus increasing consumption of this bitter fruit by both diabetic & general population. Further, dehydration of white bitter gourd can generate a source of income among farmers and womenfolks for enhancing their socio-economic status. Therefore, the present study was undertaken to standardize the best dehydration process for drying of white bitter gourd rings. Thereby, adding value to the product along with addressing the upcoming challenges of food quality as well as food security. White bitter gourd slices blanched in water for 3 minutes, followed by pre-treatment with 1% guargum gave better results for retention of food quality attributes and nutritional properties.

Abstract No. 319

CARBON SEQUESTRATION POTENTIAL OF DIFFERENT TREE SPECIES IN THE ENVIRONMENT OF INDIA

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ABSTRACT

Tree plantations in university campus play a major role in carbon sink. We estimated the potential of carbon stock sequestered by two different tree plantation types. This study was carried out to investigate total carbon sequestration in ten dominant tree species of India having an area of 2760 acres. To estimate biomass from selective tree species, it is not advisable to cut them for this reason, non-destructive method is employed. The essential parameters required for the measurement of biomass and carbon stock is height, girth and wood density. Height measurement is based on shadow method and girth taken as Diameter at Breast Height (dbh) as 1.36 meter high above the ground. The study revealed that the height (0.70* *) and girth (0.93* *) showed positive correlation with carbon stock of selective tree species and has advantage over destructive method used for biomass and carbon stock estimation. Carbon storage in individual tree species varies from 0.04 tonnes to 25.65 tonnes .The calculated total organic carbon has been compared with allometric model. *Moringa olifera* species was found to be dominant sequestrated 15.775 tons of carbon and having 14 trees followed by *Azadirachta indica* 12.272tones. The species Eucalyptus citriodora has the lowest carbon sequestration potential. Hence, we recommend government to include Eucalyptus trees in planting programmes for effective trapping of atmospheric carbon to mitigate global warming and thereby climate change
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Abstract No. 320

EDUCATION: AN IMPORTANT TOOL OF ENVIRONMENT CONSERVATION

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ABSTRACT

It is said that education is a behaviour changing process, Here behaviour is very important because it has broad meaning reflecting morality, sensation, discipline, relationship with others, controled language, and other activities of people, There is a strong connection between education and human behaviour. Education plays an important role to improve all human activities and develop insight for facing challenges of life. Today there are different types of environmental challenges on this globe. Our modern life style and unnecessory requirement create serious problems for environment. There is lackness of pure air and water to breath and drink, due to this situation we are suffering with dangerous diseases. Every day we know a new type of disease which creates difficulties to sustain our life on this globe. Now there is a big question how we can solve this environmental problem, if we deeply think to the answer for this question we shall find that awareness for the cleanness of environment and knowledge about our duties for the society, locality surrounding as well as nation is very important to solve this problem which can be developed by quality education means by containning environmental issues in curricullum from elementary education and creating good teaching learning process in classroom situation. In other words there is a requirement for taking responsibility to teach students seriously about environmental issues and challenges. On the other hand social activist or responsible person should make awareness in the society for environment conservation activly. On the basis of this conception I am going to describe the responsibility and accountability of the policy makers, teachers, students and civil society for environment conservation through this paper.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 321

FACTORS DETERMINING THE HABITAT USE OF SLOTH BEAR USING CAMERA TRAPS IN THE HUMAN-DOMINATED BUFFER ZONE OF BANDHAVGARH TIGER RESERVE, MADHYA PRADESH, INDIA

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ABSTRACT

Multiple logistic regressions was used to predict the occurrence of the sloth bear Melursus ursinus as a function of 12 habitat variables in the human-dominated buffer zone of Bandhavgarh Tiger Reserve, Madhya Pradesh, India. We described habitat in terms of land cover, topography, human disturbance, tree density, and food resources. Food resources were quantified as the density of fruiting species found in the sloth bear scats and the presence of termite mounds. We modeled the presence-absence data of sloth bear collected under systematic camera trap sampling carried in an area of 680 km2 incorporating 12 habitat variables believed to likely influence the occurrence of the sloth bear in human-dominated areas. We use the area under (AUC) receiver operating characteristic (ROC) curves as a measure of the performance of the predictive regression models. The model results predict the sloth bear occurrences as a function of food resource and dense sal vegetation. The model also predicted the inverse relationship of sloth bear occurrences with the human presence. Our predictive modeling of sloth bear occurrences in human-dominated areas may be helpful for the better management of sloth bear populations in central India, which is home to one of the largest populations of sloth bears in India.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 322

CAPITAL IN CRISIS: ITS MAGNITUDE AND EFFECTS ON HEALTH

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ABSTRACT

Emerging Issues of Environmental Concern,' focusing on the most novel environmental challenges. Air pollution is responsible for many health problems in the urban areas. Of late, the air pollution status in Delhi has undergone many changes in terms of the levels of pollutants and the control measures taken to reduce them. The air quality in Delhi, the capital territory of India, according to a WHO survey of 1650 world cities, is the worst of any major city in the world. It also affects the districts around Delhi. Air pollution in India is estimated to kill about 2.5 million people every year; it is the fifth largest killer in India. India has the world's highest death rate from chronic respiratory diseases and asthma, according to the WHO. In Delhi, poor quality air irreversibly damages the lungs of 2.2 million or 50 percent of all children. On 25 November 2019, the Supreme Court of India made statements on the pollution in Delhi saying "Delhi has become worse than narak (hell)". Supreme Court Justice Arun Mishra said that it is better to get explosives and kill everyone. Environmental exposure is increasing and affecting children's environmental health all over the world and emerging risks are being identified every day. Broadly speaking, evolution depends on successful adaptation, and maladaptation results in failure. Air pollution is becoming an increasingly dangerous problem, particularly in heavily-populated cities like Delhi. The World Health Organization (WHO) has found that 80% of people living in urban areas are exposed to air quality levels deemed unfit by the organization.To monitor and control of various air pollutants, Central Pollution Control Board (CPCB) has been provided with various powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 323

DETERMINATION OF ACRYLAMIDE LEVEL IN SOME COMMERCIAL BISCUITS, BAKERY BISCUITS AND FRENCH FRIES

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ABSTRACT

Potato shares a significant portion among the processed and snacks food industries. Potato chips, French fries and potato flakes are the major potato processed products involving 28 industries, processing approximately 10 lakh tons of potatoes in India. Due to high consumption of potatoes it is very important to minimize the processed induced toxicants because the harmful effects of acrylamide in food pose a major health problem in the human being. The presence or absence of residues of chemical toxic contaminants in food products has main implications in respect to both food protection and international trade. Carcinogenic acrylamide can be produced by heat treated carbohydrate foods in high levels such as fried and baked products. Among the processed induced toxicants acrylamide is a widespread heat-induced contaminant whose dietary intake is several orders of magnitude higher than that reported for other food toxicants. The aim of these studies was to investigate carcinogenic acrylamide levels in French fries, branded biscuits and biscuit of local bakery shop, which are commonly consumed in Allahabad were determined using a modified high performance liquid chromatography (HPLC)–diode array detector (DAD) method and spectrophotometer method.

Abstract No. 324

RESIDUE BURNING IN RICE-WHEAT CROPPING SYSTEM: CAUSES AND IMPLICATION

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ABSTRACT

Combine harvesting technologies, which have become common in RWS (rice-wheat system) in India, leave behind large quantities of straw in field from open burning of residue. Such burnings result in perturbations to the regional atmospheric chemistry due to emission of trace species like CO2, CO, CH4, N2O, NOx , and aerosols. The emissions of CH4, CO, N2O and NOx have been estimated to be about 110, 2306, 2 and 84 Gg respectively, from rice & wheat straw burring in India. Residue burning causes nutrient and resource loss and adversely affects soil properties, thus calling for improvement in harvesting technologies and sustainable management of RWS.

Abstract No. 325

SUITABLE BREEDING METHOD IN VEGETABLE PEA

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ABSTRACT

Peas are self-pollinated due to cleistogamy and accordingly, the common breeding procedures applicable to self-pollinated crops viz. pedigree, bulk, single seed descent (SSD), back-cross method and mutation breeding are used in pea breeding. SSD method is now becoming common in peas. This is particularly, useful in those situations where selected better lines are inter-crossed. F1 plants are grown to produce 500 or more F2 seeds. One seed are harvested from each F2 plant and the harvested seed are bulked to plant F3. This procedure continues till F5 in which phenotypically, superior individual plants are selected for future plant to progeny planting and evaluation. A major advantage of this method is, that, it can be carried out with less resources and the rapid advancement of generation is possible in field and glass-house/off season-nursery. While advancement the generations, selected for highly heritable traits is practiced frequently in early generations, before lines are grown out as small plots in F4/F5 generations (like F3andF4) are grown at off-site locations. In India alternate generations can be grown in late Kharif in Pune and Nasik in Maharastra and followed by winter season in northern plains.

In this way, 2 generations can be grown in a year. There are wide spread use of SSD utilizing glasshouse or plant growth chambers to speed-up early generations while also maintaining a wider level of variability between lines before growing plant to progeny rows for field evaluation and selection is also used by some breeders. A dose of 10-15 krad of gamma rays is appropriate for seeds. A good criterion of effectiveness of any mutagens is germination reduction, not exceeding 50% for gamma radiation, better only 30% for neutrons and certain chemical mutagens. Stronger germination reduction may result for a high number of chromosomal aberrations and this in turn will lead to high sterility. Among chemical, EMS, NEU, EI, NUM, and sodium azide seem to be the most efficient mutagens for mutagens seeds are usually pre-soaked for 12-16 hours. Pre-soaking facilitates the penetration of the mutagen into the tissues. In garden pea number of green pods/plant, green pod weight, pod length and number of seeds/pod have been shown to be the major yield components affecting the green pod yield. These yield components usually do not show components compensation effect and therefore, simultaneous improvement for these characters should be possible.

Abstract No. 326

ADVANCES OF MICRO-PROPOGATION IN VEGETABLE PRODUCTION

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ABSTRACT

For the rapid multiplication of plants, micro-propagation is a refined and well adapted technique. Due to the fast speed of propagation it has a great profit making potential, the high plant quality and the ability to produce disease-free plants. It is an art and science of plant propagation under in vitro conditions. Most of these techniques involve the use of vegetative meristematic tissue; however, methods have also been developed in many crops for regeneration of plants from callus and from protoplasts. Due to the sheer number of plant species that are categorized as vegetables. Micro propagation is a fast method of plant propagation that has a great potential to develop high quality as well as disease-free plants. Advancements in this field have led to the development of several techniques for rapid multiplication and improvement of a wide range of horticultural crops and their production systems. Micro propagation includes three types of vegetative propagation, 1) somatic embryogenesis, 2) adventitious shoot production and 3) axillary shoot production, which provide excellent opportunities for successful vegetable crops production. A number of experiments have also been done to demonstrate the influence of hypocotyl explant orientation on shoot bud induction in Capsicum. Sweet potato cuttings when grown in vitro with Florialite gives greater percentage of survival. Similarly, in vitro layering of gourds; a modification in micro propagation methods become more advantageous as it produces single shoot rather than multiple shoots. Likewise, an immobilized culture system of obtaining torpedo-stage embryos of carrots of uniform size and higher tuber yield with rapid multiplication rate for potato were also introduced by micro propagation techniques. Several protocols have been published for in vitro plant regeneration of tomato species. Methods formerly reported are tedious and time consuming, with variable efficiencies and high production costs. In all cases, regeneration systems implicated media containing growth regulators.

Abstract No. 327

ADVANCES IN VEGETABLE PRODUCTION UNDER PROTECTED CONDITION

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ABSTRACT

Protected cultivation of vegetables is emerging as a specialized production technology to overcome biotic and abiotic stresses and to break the seasonal barrier to production. It also ensures round the year production of high value vegetables, like capsicum, tomato and cucumber during off-season. Cost is the major issue in sustaining this technology.The use of greenhouse or polyhouse technologies for high-valued crops is an alternative method of crop production.The economic viability of production of capsicum, cucumber and tomato in a naturally ventilated polyhouse of medium cost category with drip irrigation system.

Many vegetables have been widely reported to environmental conditions such as light, air temperature, relative humility, and CO2 concentration in the past years. Among these environmental factors, light is considered to be the most important one for vegetable growth and development, especially in protected farmland. Therefore, lots of researches on effects of light environment, including light intensity, light quality, photoperiod, and light direction, on vegetable growth and development have been done in order to optimize the environmental conditions for high-yield and high-quality vegetable production in protected farmland. In this review, recent advances in light environment control for vegetable production in protected farmland have been reviewed and the prospective for the future research has been proposed as well.

Abstract No. 328

BIOFUELS (BIOENERGY): MICROBIAL HYDROLYSIS OF CELLULOSIC RAW MATERIALS FOR BIOETHANOL (CELLULOSIC ETHANOL) PRODUCTION

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ABSTRACT

Cellulosic ethanol (Bioethanol) is a promising alternative renewable energy source for the limited crude oil. Ethanol is generally produced from some common crops such as sugarcane, potato, cassava and corn. Cellulosic biomass can be utilized as a non-conventional raw material to produce ethanol Cellulosic ethanol production and commercialization may be helpful to control the prices hike of conventional fuels and pollution also. Cellulosic ethanol production has involved mainly two processes, first one is hydrolysis of cellulose raw materials to produce reducing sugars and second one is fermentation of the sugars to ethanol. The cost of cellulosic ethanol is relatively high based on current technologies, and the main challenges are the low yield and high cost of the hydrolysis process. Parameters optimization for microbial hydrolysis of cellulosic raw materials is a considerable effort made for research. *Trichoderma* viride, *Trichoderma reesei* and *Aspergillus nigerare* most efficient microbial strains used for hydrolysis of cellulosic raw materials at optimized parameters. Pretreatments of cellulosic raw materials are required to remove lignin and hemicelluloses, it can significantly enhance the hydrolysis of cellulose. Simultaneous saccharification and fermentation effectively removes glucose, which is an inhibitor to cellulase activity, thus increasing the conversion rate and yield of cellulose hydrolysis.

Abstract No. 329

IMPACT OF AIR POLLUTION ON HUMAN HEALTH

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ABSTRACT

Air pollution is a major problem of recent decades,which has a serious toxicological impact on human health and environments.Air pollution causes around seven million deaths in a year worldwide. It has a number of different emission sources,butmotor vehicles and industrial process contribute the major part of air pollution. According to world health organisation six major air pollutants including particulate and gaseous,particulate matter includes industrial and automobile release fine particles in to air, flyash soot from burning of coal,metal dust containing lead ,chromium,nickel,arsenic, cadmium zinc and mercury. Gaseous pollution include carbon di oxide, carbon mono oxide of nitrgeon,oxide of sulphur long term and short term exposure to air suspended particles has a different toxicological impact of humanincluding respiratory,cardiovascular,irritation of eyes nose and throat.Damage to reproductive organs,nervous system damage, fatigue headaches and anxiety, harm to liver spleen and blood. Air pollution is considered as major environmental risks factors in the incidence and progression of some disease such as asthma, lung cancer,and ventricular hypertrophy. Alzimer andParkinson'sdisease we aim to discusstoxicology of major air pollutants,sources of emission and their impacts on human health.

Abstract No. 330

ASSESSMENT OF GASEOUS POLLUTANT NEAR MAJOR TRAFFIC INTERSECTION IN KANPUR CITY

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ABSTRACT

Air pollution defined as any condition in atmosphere in which certain substances may be present in such concentration that can produce harmful effects on man and environment. This includes gases like Sulphur Oxides, Nitrogen Oxides, Carbon Monoxide,Hydrocarbons, Particulate Matter and many more. Kanpur City is an important center for trade and commerce in Uttar Pradesh. However, in recent years, city has acquired notoriety as the most polluted industrial city in India according to WHO Report 2018. Being the major industrial city, Kanpur has substantial number of vehicles, in which most of the commercial vehicles run on diesel. There are several studies in which diesel commercial vehicles held responsible for most of the air borne pollution.

This study was focused on major intersections of Kanpur City which handles thousand of vehicles, some of them are controlled by Automatic Signaling System. These automatically controlled intersections show better air quality results of gaseous pollutant (Sulphur Oxides, Ozone and Nitrogen Oxides) then the other manually controlled intersections. But almost on all days the air quality data of given gas pollutant at the intersections is more than prescribed limit by the National Ambient Air Quality Standards (NAAQS). So this study emphasizes on the comparison of Automatically Controlled Intersection and Manually Controlled Intersection to relate it with Air Quality Improvement.

Abstract No. 331

CLIMATE CHANGE POLICY IN INDIA AND NAPCC 2008

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ABSTRACT

Climate change has been described as defining issue for the twenty first century. It is one of the most important challenges facing the international community today. Climate change is a complex phenomenon. A general definition of this topic is a short-term or long term alteration of the statistical properties of a climate system. In recent time the main focus is on human activity that is responsible for climate change.

Climate change is projected to have severe adverse effects on India's development as it compounds the pressures on natural resources and the environment associated with rapid urbanization, industrialization, and economic growth. Climate change policies in India are firmly anchored within a co-benefits framework, focusing on leveraging the synergies between development and climate outcomes. These were first articulated in the National Action Plan on Climate Change (NAPCC) 2008. This paper is based on secondary data. The first part describes some of the important policy and programmatic aspects impacting climate change mitigation and adaption prior to the adoption of NAPCC 2008. The main features of NAPCC 2008 and some state level plans have been analyzed in the second part. Along with this challenges and points of their solution have also been highlighted.

Abstract No. 332

SUSTAINABILITY & ENVIRONMENTAL MANAGEMENT IN SPECIAL REFERENCE TO INDIA

Yogendra Narayan Singh

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ABSTRACT

Sustainability & environmental management includes managing the oceans, freshwater systems, land and atmosphere according to sustainability principles. Use of land change the functioning of the biosphere because alterations in the relative proportions of land for urbanization, agriculture, forest, woodland, grassland have a marked effect on the water, carbon and nitrogen biogeochemical etc. Management of the Earth atmosphere includes assessment of all aspects of the carbon cycle to identify opportunities to address human-induced climate change and this has become a major focus of scientific research because of the catastrophic ef fects on biodiversity and human communities. Ocean circulation systems have a strong influence on climate and weather and in turn, the food supply of both humans and other organisms. In this paper we will be finding that how India is doing & how India can do sustainable development with environmental management.

Abstract No. 333

A MATHEMATICAL APPROACH AND ITS APPLICATION IN REMOTE SENSING

Arun Srivastava, Anil Kumar Singh and S. P. Kushwaha

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ABSTRACT

Remote sensing, the process of detecting and monitoring the physical characteristics of coverage of a large area by measuring its reflected and emitted radiation at a distance from the targeted area with appropriate modelling and algorithm development has indeed been a matter of great Scientific importance. It is a science of obtaining information about objects or large area from a distance, typically from aircraft or satellites. Application of Remote Sensing techniques and Geographical Information System is in the management of various natural resources like Soil, Water, vegetation, environment and agricultural resources. Rapid developments in Remote sensing have pushed earth observation research and development to the forefront of scientific endeavour, challenging the traditional approaches followed in diverse fields such as meteorology, geology, hydrology, forestry and oceanography to few name only. There are two types of remote sensing technology. In active sensing emitted energyis used in order to scan objects and areas then sensor detects and measures the radiation that is reflected or backscattered from the target. RADAR and LLDAR are examples of active remote sensing. Theanother type of sensing ie. Passive sensors gather radiation that is emitted or reflected by the object or surrounding areas. Reflected sunlight is the most common source of radiation measured like infrared and radiometers. GIS can operate through computer.Images captured can be referenced into spatial and non spatial data for manipulation, analysis and modelling leading into management of decision making tasks. Remote sensing provides timely and repetitive information on the happening on earth and its environment . It can help in achieving worldwide economic and social development by managing natural resources while minimizing adverse impacts on the earth's resources, environment and climate, Crop yield forecasting using remote sensing as regression model, in forestry such as soil erosion, flood and increase in CO2 affecting climate.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 334

MEASUREMENT AND SCALING TECHNIQUES IN SOCIAL RESEARCH

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ABSTRACT

Scaling techniques is the process of generating sequence of values upon with the measured objects is placed. Scaling describes the procedures of assigning numbers to various degrees of opinion, attitude and other concepts. Scales and indexes are concerned with developing optimum health and emotional vitality, social consciousness, acquisition of knowledge, wholesome attitude and empowerment, spiritual and moral qualities. A more refined techniques concern with linearity and equal intervals like Thurstone equal appearing interval scale, Likert three and five point scale, Guttman scale, Rating scale and Latent distance scales. Scaling techniques is such an integral part of research and devote attention to research activity. Attitude towards Economic development, Socio cultural development, Self confidence development, Self-esteem development and political legal development. Scaling techniques play a major role in the construction of instruments for collecting standardized measurable data. Primary Scaling techniques as measurements are Nominal scale, Ordinal scale, Interval scale and Ratio scale. Other scaling techniques are Comparative scales in which Paired comparison, Rank order, Constant sum and Q-sort scaling. In non comparative scales are Itemized rating scale, Likert scale, Semantic differential scale and Stapel scale. Scales and indexes are significant role provide quantitative measures that are amenable to greater precision, statistical manipulation and explicit interpretation. The social research and schedule well describe and adopt as a various scaling methods i.e. three point, five point scales for knowledge and decision making.

Abstract No. 335

ENVIRONMENTAL POLLUTION AFFECT PRENATAL DEVELOPMENT

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ABSTRACT

Environment Pollution is a wide reaching problem and it is likely to influence the health of human population is great. Air pollution is one of the biggest threats for the environmental pollution which effects human, animals, plants, ecosystem etc. This paper provides the insight view about the affects of environment pollution in the perspective of air pollution, on by diseases and problems, animals and trees/plants on prenatal development. Accumulating data from animal and human studies indicate that the prenatal environment plays a significant role in shaping children's neuro cognitive development. The prenatal experiences exert their influence in the context of one another and yet, almost uniformly are studies independently . Exposure to Environmental pollutants in both open and closed environment is a major cause of morbidity and mortality that may be both controlled and minimized. The largest reported effects are associated with prenatal exposure to particulate matter, nitrogen dioxide and tobacco smoke. The primary effects affect birth weight and other parameters of fetal biometry . Air pollution has been effect fetal growth. There effects are mainly driven by pollution exposure during the third tri semester of pregnancy. Environmental pollution exposure before birth caused epigenetic charges in the offspring DNA. Air pollution during pregnancy is associated with reduced postnatal using function at age 5 weeks up to age 11 years. Further policy efforts are needed to fully protects fetuses from the adverse effect of the air pollution and to mitigate the environmental in equality of health at birth.

Keywords: Environmental pollutants, pregnancy, fetal development, birth weight.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 336

SUSTAINABLE SOLID WASTE MANAGEMENT AND OPPORTUNITIES IN INDIA

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ABSTRACT

India aspects major environmental challenges associated with waste generation and inadequate waste collection, transport, treatment and disposal. Current systems in India cannot cope with the volumes of waste generated by an increasing urban population, and this impact on the environment and public health priority is to move from reliance on waste dumps that offer no environmental protection, to waste management systems that retain useful resources within the economy. Waste isolation at source and use of specialized waste processing facilities to separate recyclable materials has a key role. Solid waste management (SWM) is a major problem for many urban local bodies (ULBs) in India, where urbanization, industrialization and economic growth have resulted in increased municipal solid waste (MSW) generation per person Environmental contamination due to solid waste mismanagement is a global issue. Open dumping and open burning are the main implemented waste treatment and final disposal systems, mainly visible in low-income countries. This paper reviews the main influences due to waste mismanagement in developing countries, focusing on environmental pollution and social issues.The results and case studies presented can be of reference for scholars and stakeholders for quantifying the comprehensive impacts and for planning integrated solid waste collection and treatment systems, for improving sustainability at a global level.

Abstract No. 337

STUDIES ON VARIOUS ETHNOMEDICINALLY IMPORTANT PLANTS USED BY TRADITIONAL COMMUNITIES FOR PRODUCTION OF MEDICINALLY IMPORTANT PHYTOCONSTITUENTS

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ABSTRACT

In the present study, attempts have been made to discuss the modern aspects of ethnomedicinal approaches to find various folk and traditional medicinal plants as candidates for drug discovery with the greatest possibility of success. Determining their bioactive mechanisms and tracing structure-activity relationships will promote the discovery of new drugs and pharmacological agents. In recent years various Indian medicinal plant species have been overexploited for therapeutic uses and have subsequently been placed today in rare and endangered categories. As per report of Red data List of threatened species approximately 44 plant species are critically endangered, 113 endangered and 87 vulnerable. Out of these many traditional medicinal plants are also at critical risk because of their over harvesting and destruction of their natural habitat. The traditional utilization techniques of the communities inhabiting the study area not only utilize the plants for domestic consumption but at the same time express high conservation ethos. Ecological management techniques practiced by certain tribes are far superior to so-called modern means of conservation. The concept of conservation of biodiversity is inbuilt and interwoven in the traditional and religious belief of the ethnic communities. This is an area of research that presents a variety of opportunities for conservation, sustainable development and health-care. Enhanced market demands have posed threats to Phyto resources due to unscrupulous mode of collections. Therefore, the management of traditional medicinal plant resources has become a matter of urgency.

The pharmacological evaluation of constituents from plants in the present time is an established protocol for the identification of constituents which leads to the development of novel and safe medicinal agents. Based on the ethnopharmacological literature, several species of medicinal plants used in traditional medicine in various parts of Rajasthan. The importance of ethno botany has been seriously felt in recent years due to vast plant resources of the country and a number of pharmaceutical uses of plant extracts. Therefore, now a day's screening of medicinal herbs as potential sources of new bioactive compounds of therapeutic value has increased.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 338

TREATMENT METHODS FOR HEAVY METALS REMOVAL

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ABSTRACT

The various industrially used methods for the removal of heavy metals are Ion exchange, Chemical precipitation, floatation, electrochemical deposition, adsorption, etc. All these methods are used in industries are expensive and may even produce a large quantity of sludge which further needs treatment. Adsorption process is currently considered as one of the upcoming process for the treatment of wastewater containing heavy metals Enters the environment through herbicides, wood preservatives, and mining industry Causes damage to skin, eyes, and liver. May also cause cancer. Antimony (Sb) Enters the environment through mining and ore processing industry Can irritate eyes, skin, and lungs can also cause heart problems, stomach pain, diarrhea, vomiting, and stomach ulcers. Chromium (Cr) Source includes cement industry, effluents from chemical plants, tobacco smoke and contaminated land fill. Can Cause Pulmonary fibrosis, lung cancer. Recently, adsorption has become one of the alternative treatments. Adsorption has advantages over the other wastewater treatment methods because ofsimple design with a sludge-free environment and can involve low investment in terms of both initial cost and land required. Due to its large surface area, high adsorption capacity and surface reactivity, adsorption using activated carbon is able to adsorb various metal adsorbates from inorganic water effluent. In recent years, alternative low-cost adsorbents that have binding capacities have attracted the attention of several investigators for providing alternative treatments. Materials locally available in large quantities such as agricultural products or by-products have been utilized. as low-cost adsorbents, rather than simple disposal, which makes both environmental and commercial sense.

Abstract No. 339

KOLKATA CHOKED BY AIR POLLUTION

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ABSTRACT

Air pollution is one of the most serious environmental concerns in developing countries around the world where Kolkata is no exception.Kolkata, a metropolitan city with high population density has been experiencing serious air pollution problem during the last few decades.

The alarming levels of air pollution already established the adverse effects on human health and ecosystems depending upon the location and dispersion of pollution. The complex operations of different industries with old technologies and ineffective control equipment with exponentially increasing number of automobiles are all responsible for high emission of air pollutants in the city.

With passage of time the problem of air pollution in Kolkata has taken a mammoth shape. Setting up of industries in the already environmentally burdened city could be avoided by implementing a strong stringent policy and imposing standards with regard to automobile sector.

Abstract No. 340

CLIMATE CHANGE- IMPACT ON LAND AND HUMAN BEINGS

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ABSTRACT

Climate change is recognized as one of the major factors contributing to land degradation. Land degradation means reduction in the potential of the land to produce benefits from a particular land use under a specified form of land management and is considered to be one of the major problems of the world in recent times. Land degradation encompasses change in chemical, physical and biological property of the soil. Such a change in soil properties alter and reduce the soil ability to sustain a peculiar quality and quantity of plant growth. Soils are also crucial to food security and change in climate has threatened the food security by affecting the soil property. Understandings of the effects are required to knowhow climate and soils interact and to understand changes in soil due to change in climate. At regional, ocean basin and continental scales, numerous long-term changes in climate have been noticed. These admit changes in ocean salinity, far-flung changes in precipitation amounts, changes in Arctic ice and temperatures, changes in wind patterns, change in the intensity of tropical cyclones and changes in heat waves and heavy precipitation. More acute and longer Carbondioxide (CO2) accelerated climate change and desertification stay inextricably associated because of feedbacks between precipitation and land degradation. Water resources are also inextricably associated with climate. Annual ordinary river runoff and water availability are projected to rise by 10-40 percent at high latitudes, in wet tropical areas, at mid-latitudes and in the dry tropics it decreases by 10-30 percent. Land exhibited to degradation as a consequence of poor land management could become infertile as a result of climate change. Land degradation hazards included wind and water erosion, loss of soil carbon, nutrient decline mass movement, soil structure decline, acid sulfate soils and soil acidification. Hence the present review furnishes climate change and its impact on land degradation.

The main reason we are concerned about human-induced climate change is that climate shifts might impact the health of India's populace. These impacts can be direct, such as the influence of stronger heat waves or storms, or indirect, like changes in the food supply or the cost and availability of energy. We are also concerned about whether a changing climate might significantly alter current weather patterns in such a way that diseases will spread out of regions where they are currently endemic into areas where they are currently of little concern. It is of particular interest to the related environment change on whether the width of Earth's tropical belt is changing. Finally, the change in air quality and human health which is at stake is a major impact of climate change on the issue.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 341

GLOBAL WARMING AND HUMAN INDUCED CLIMATE CHANGE

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ABSTRACT

The scientific discovery of climate change began in the early 19th century when ice ages and other natural changes in paleoclimate were first suspected and the natural greenhouse ef fect first identified. In the late 19th century, scientists first argued that human emissions of greenhouse gases could change the climate. Many other theories of climate change were advanced, involving forces from volcanism to solar variation. In the 1960s, the warming effect of carbon dioxide gas became increasingly convincing, although some scientists also pointed out that human activities, in the form of atmospheric aerosols (e.g., "pollution"), could have cooling effects as well. During the 1970s, scientific opinion increasingly favored the warming viewpoint. By the 1990s, as a result of improving fidelity of computer models and observational work confirming the Milankovitch theory of the ice ages, a consensus position formed: greenhouse gases were deeply involved in most climate changes, and human emissions were bringing serious global warming.

Recent Scenario of Climate Change :-It is now widely accepted that climate change is occurring as a result of the accumulation of greenhouse gases in the atmosphere arising from the combustion of fossil fuels. Climate change may affect health through a range of pathways, for example as a result of increased frequency and intensity of heat waves, reduction in cold related deaths, increased floods and droughts, changes in the distribution of vector-borne diseases and effects on the risk of disasters and malnutrition. The overall balance of effects on health is likely to be negative and populations in low-income countries are likely to be particularly vulnerable to the adverse effects. The experience of the 2003 heat wave in Europe shows that high-income countries may also be adversely affected. Adaptation to climate change requires public health strategies and improved surveillance. Mitigation of climate change by reducing the use of fossil fuels and increasing a number of uses of the renewable energy technologies should improve health in the near-term by reducing exposure to air pollution.

Factors responsible for Climatic Change:- Human activity is capable of causing and sustaining long term changes in the earth's atmosphere. Neglecting human heat production, the earth's climate can be modified by three different methods :

1. a change in the albedo of the Earth's surface (2.) a change in the albedo of the atmosphere (3.) a change in the atmospheric content of gases having strong radiative properties

Many scientists have concluded that the temperature of the planet is warming significantly because of human activities. The most important factor's of climate change are :

Variation in solar irradiance: In most theories of climatic change, it is assumed that the output of energy from the sun is constant or nearly so. However, if it is considered that a fluctuation of less than 10% in output from the sun could explain all of the climatic changes.

Sunspot Activity: Detailed analysis of the sun's outer surface, or photosphere, shows dark, circular areas known sunspot. These are areas in the surface where temperature drop some 14000C lower than surrounding areas. Scientists have suggested for a long time that sunspots are responsible for change in weather patterns and climatic cycles.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 342

NEED FOR BIODIVERSITY AND SUSTAINABLE DIETS

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ABSTRACT

The alarming pace of food diversity loss and ecosystem degradation makes a compelling case for re-examining agricultural systems and diets. Sustainable diets take into account food for the present and future generations. They are culturally appropriate, nutritionally sound and protective of ecosystem. Sustainable diets make nutritious and healthy food available and affordable to all while protecting income of farmers as well as cultures of consumers and communities. Sustainable diets position nutrition, food and biodiversity as central to sustainable development. The aim of promotion of these diets is to provide more ecofriendly food recommendations to consumers and help clarify what is required for an environmentally sustainable food chain. The purpose is to promote a broader assessment of link between local food products, bio-diversity, nutrition, food security and sustainability. The promotion of the sustainable diets concept will serve to raise awareness of consumers and governments about the role of food diversity in human nutrition and poverty alleviation. While good nutrition should be a goal of agriculture, it is imperative that concerns of sustainability are not lost in the process.

Abstract No. 343

IMPACT OF E-WASTES

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ABSTRACT

Used or discarded computers, monitors TV, stereo , printer, FAX machines, mobiles, DVD-player, camera, batteries,, I-pods and many more are main sources of electronic wastes or e-wastes . They contain toxic materials such as lead, chromium, zinc, nickel, brominated flame retardants or poly chlorinated biphenyls.

One of the biggest environmental impacts from e- wastes is that on heating they release toxic fumes into the air. When thrown away, in landfills, their toxicants seep into soil and ground water, affecting land & water resources. Toxic chemicals cause serious health problems, not only to humans but also to plants & animals. Thus causing horrible effects on the living beings on the earth. E - wastes can be reused, salvaged, recycled or refurbished. For disposal It should be given to R2 certified recycling facilities.

1st International Conference on Environment and Society (ICES 2019)
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Abstract No. 344

EXPLORING THE ROLE OF INDIGENOUS KNOWLEDGE (IK)/TRADITIONAL KNOWLEDGE (TK) INTHE ASSESSMENT OF CLIMATE CHANGE AND BIODIVERSITY CONSERVATION: AN ANTHROPOLOGICAL PERSPECTIVE

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ABSTRACT

Indigenous populations worldwide are now days facing the brunt of development policies adopted by various nations. Same is happening with the indigenous knowledge/ traditional knowledge possessed by these native populations, which is getting more and more vulnerable due to unpredictable climate changes and associated policies adopted by human society. In spite of its vulnerability and exposures, it proves to be of immense importance in the assessment of climate change and biodiversity conservation. This is also attested by the 4th& 5thassessment reports (AR4& AR5) as well as 32nd session of the Intergovernmental Panel on Climate Change (IPCC) in 2010 and Cancun Adaptation Framework under the UNFCCC.In this backdrop, the following research paper applying Anthropological fieldwork methods attempts to explore the role of indigenous knowledge in climate change and biodiversity conservation empirically in different Scheduled Tribes of India viz. the Jaunsarese and the Tharus of Uttarakhand, and Particularly Vulnerable Tribal Groups (PVTGs) of India including theTodas of the Nilgiris, the Mankidias of Odisha and the Nicobarese of Car Nicobar island.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 345

AIR POLLUTION AND CLIMATE CHANGE

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ABSTRACT

Air quality is strongly dependent on weather and is therefore sensitive to climate change. As the largest developing country India has been changing rapidly over the last three decades like increase in use of fossil fuels, increase in motor vehicles high population growth rate etc. India is now facing the worst air pollution problem in the world; air quality of metro cities of India is very bad. Since last three decades, our ecosystem is affected by air pollutants and traditionally the problem of air pollution and climate change is treated separately. My study focuses on the causes of increased levels of air pollution in our country and its linkage with world wide climate change.

Abstract No. 346

MICROWAVE CHEMISTRY

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ABSTRACT

Microwave Chemistry is the science of applying microwave radiation to chemical reactions. High speed synthesis with microwave has attracted a considerable amount of attention in recent years. Microwave radiation is widely used as a source of heating in chemical synthesis where chemical reaction are accelerated because of selective absorption of microwave by polar molecules. Microwaves act as high frequency electric field and generally heat any material containing mobile electric charges, such as polar molecules in a solvent or conducting ions in a solid. The basic mechanism observed in microwave assisted synthesis are dipolar polarization and conduction. Polar solvents are heated as their component molecules are forced to rotate with the field and lose energy in collisions. The dipole moment generates friction inside the electric compounds and the internal energy is dissipated as heat. Semiconducting and conducting samples heat when ions or electrons within them form an electric current and energy is lost due to electrical resistance of the material. Microwave assisted synthesis provides clean synthesis with the advantage of enhanced reaction rates, higher yields, greater selectivity and economic for the synthesis of a large number of organic molecules.

Abstract No. 347

ADVANTAGES OF BIOCATALYSIS IN GREEN CHEMISTRY

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ABSTRACT

Biocatalysis refers to the use of living system or their parts to speed up chemical reactions. In biocatalytic processes, natural catalysts, such as enzyme, perform chemical transformations on organic compounds. Biocatalysis have many advantages over chemocatalysis in the context of green chemistry which include reaction conditions like ph and temperature, the use of environmentally compatible catalysts and solvents usually water or low toxicity organic solvents, high catalytic activity and good regio-chemo-selectivities for multifunctional molecule. They often result in a shorter, less wasteful, environmentally and economically appealing processes when compared to conventional chemical synthesis. Biocatalysis is also achieving new advances in environment fields, from enzymatic bioremediation to the synthesis of renewable and clean energies.

Abstract No. 348

BIOFORTIFICATION OF ZINC ON WHEAT (TRITICUM AESTIVUM) IN SOILS

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ABSTRACT

The high zinc wheat was developed through a process known as biofortification, which uses conventional crop breeding and application ofzinc fertilizer to increase micronutrient levels in the wheat grain. Apparent Zn recovery in wheat also improved with soil + foliar application of Zn fertilizer, suggested that agronomic bio-fortification of zinc is possible in wheat and can prevent Zn malnutrition in human beings to a considerable extent.Zinc malnutrition poses a major health issue for human beings globally. Agronomic bio-fortification explores the feasibility to control the zinc deficiency related disorders of the human population. There is evidence that agronomicbiofortification can increase yields and the nutritional quality of staple crops, but there is a lack of direct evidence that this leads to improved human health. Micronutrientfertilization ismost effectivein combination with NPK, organic fertilizers and improved crop varieties, highlighting the importance of integrated soil fertility management. Agronomicbiofortificationprovides animmediate and effective route to enhancing micronutrient concentrations in edible crop products, although genetic biofortification may be more cost effective in the long run.Indian diets contain few zinc-rich foods and an abundance of whole cereal grains and small quantities of legumes;phytates found in these inhibit zinc and iron absorption.

Biofortification helps address preventable deficiencies of key vitamins and minerals like iron, vitamin A and zinc. Zinc isan essential micronutrient, required for healthy growth and development. Inadequate zinc intake can weaken the immune system,making children more vulnerable to infections and respiratory illnesses like pneumonia, which are thetwo principal killers of children ofthis age around the world.For women of reproductive age, poor zinc status has been associated with negative pregnancy outcomes like preterm delivery. Globally, itis estimated that zincdeficiency accounts for 14.4 percent of diarrhea deaths, 10.4 percent of malaria deaths and 6.7 percent of pneumonia deaths among children between 6 months and five years of age. This is the first large trial evaluating biofortified zinc wheat to increase zinc in diets andimprove nutritional status and related health outcomes in young children and their mothers.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
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Abstract No. 349

ROLE OF WOMEN IN SUSTAINABLE DEVELOPMENT OF NORTH – EASTERN REGION THROUGH ECO – FRIENDLY ENTREPRENEURIAL ACTIVITIES: A QUALITATIVE ANALYSIS

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ABSTRACT

Women of North – east region of India inherit a rich tradition of various bio - diversity based cultural heritage. Perhaps other than few tribal pockets here and there, this is the only part of the country that has finely blended and preserved its traditional heritage and natural resources so beautifully and effortlessly. This was possible because people of the region, especially women have taken up various activities directly linked to their day to day life in proper harmony with the nature and their immediate eco- system. Be it weaving, cooking or other handicrafts, judicious and the best use of such resources can be seen in every walk of life of these communities. With the development of the region altogether a completely new vista of opportunities has opened for these women. Now they have started converting their day to day activities practiced traditionally as entrepreneurial venture. The list includes handloom textile weaving, bamboo craft, food processing agriculture, floriculture many more practiced across the region. The present paper tries to give an analysis of various entrepreneurial ventures based of indigenous traditional knowledge and activities practiced by the women belonging to Garo and Khasi tribe of Meghalaya, and women of Manipur with especial reference to handloom weaving and selected handicrafts. The results yielded that over a period of time where Manipuri textile has become quite popular due to better outreach and presence as compared to the other two tribes of Meghalaya, handicrafts especially bamboo craft and other wood craft of Meghalaya has gained some popularity. However, inadequate and proper marketing strategies and problem in supplies of raw material came up as the major constraint so far textile weaving in Meghalaya is concern. It is suggested that providing recommended support system and bridging the gaps indicated in the study would not only help in preserving the age old environment friendly sustainable practices and crafts but would also help these women run enterprises to become job providers.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

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Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
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Abstract No. 350

ENVIRONMENTAL POLLUTION IN DEVELOPING COUNTRIES : AN OVERVIEW

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ABSTRACT

The Objective of the present paper is to make awareness about the danger of environmental pollution in developing countries. The paper deals the problem as well as the solution of environmental pollution in developing countries.

Several International Conferences have been held on this subject, starting with the first one of the Tbilisi in 1977 to the Earth Summit in Rio de Janeiro, the population summit at Copenhagen the world submit on sustainable development in Johannesburg and several others. Countries have put their own interests ahead of environmental protection and future of coming generation what has been India's stand an environmental protection?

Causes of environmental degradation and impacts of rapid development on environment

Environmental Degradation occurs natural or through human processes. World Development Report, 1992 summarizes the main health and productivity consequences of environmental damage in the developing countries. The environmental change and damage in the developing countries are being drawn by many factors including social, economic, institutional and technological which they are following:-

- Water quality has continued to deteriorate world over because of a number of factors. The most widespread contamination of water occurs from industrial waste. Water pollution is the most serious environmental problem for the one billion people in developing countries who do not have access to clean water and the 1.7 billion who lack access to sanitation. The direct impact of waterborne diseases like diarrhea diseases is huge, especially for children and the poor.
- Air pollution has three principal man-made sources energy use, vehicular emissions and industrial production. The problem is that as economic growth picks up in developing countries, all these are likely to increase resulting in more air pollution in coming years. The fifth of humanity is exposed to unsafe levels of urban air pollution and is faced with the threat of serious respiratory disorders and cancers.
- One of the chief forms of soil degradation is soil erosion. In addition to denuding the agricultural land of its top fertile layer, soil erosion also harms productivity by depositing silt in dams, irrigation system and river transport channels and by damaging fisheries. Salinization and water logging are other serious forms of soil degradation. According to world development report, about 60 million hectares or 24 percent of all irrigated land, suffer from salinization caused by bad irrigation practices.
- Forests play a useful role in preserving the ecological and environmental balance and in maintaining the biodiversity and ecosystems. Deforestation has affected the rain, and whole ecosystem. According to HDR2011, total forest area in the world was 1.7% of land area in 2008 it was changed -1.2% from 1990-2008 whereas in developing countries its increasing rate was much more than that.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 351

ACCUMULATION OF HEXAVALENT CHROMIUM AND PENTAVALENT ARSENIC IN BARLEY

Indu

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ABSTRACT

Now a day's heavy metal such as arsenic, chromium cadmium, and copper etc. contamination is a major threat to water, soil resources human health, animal and microorganism also. Phytoremediation can potentially use to remediate metal contaminated site.The aim of the study was to determine the accumulation of the two heavy metal Cr (VI) and arsenic in spring barley (Hordeum vulgare L.). Tolerant, partially tolerant and Non -tolerant accessions of barley were selected after the screening, for the assessments of these two heavy metal.The result shown Cr (VI) and As (V) were accumulated inthe root and shoot of the seedlings.It was noticed that the accumulation of Cr (VI) in the roots were much higher than the shoots of the seedling used in the treatment. In case of As (V) the results were reverse. During study it was found shoots of the barley accumulated more As (V) than roots. More over Cr (VI) could accumulate in higher concentration over that of arsenic in root and shoots.

Keywords: accumulation, arsenic, barley, chromium.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 352

THE ROLE OF RENEWABLE ENERGY SOURCES FOR ENVIRONMENTAL SUSTAINABILITY

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ABSTRACT

The use of fossil fuels such as lignite, black coal, crude oil and natural gas involves the oxidation of carbon that has been laid down over millions of years in the Earth's crust. In this process, energy is released, but also carbon dioxide (Co2), which enters the atmosphere and is a cause of global warming and the so-called greenhouse effect. Due to these disturbances to the climate we can expect unusually dry and warm summers, extreme variations in the weather, temperature oscillations, periods of climatic instability and adverse weather conditions such as floods and hail. For avoid this problem it is important that we start use of renewable energy sources. Renewable energy is the energy that is replenished on a human timescale, but these sources are flow-limited and we can harvest it by renewable resources, such as sunlight, the wind, hydropower, geothermal, tides and rains. Renewable technologies are considered as clean sources of energy and optimal use of these resources minimize environmental impacts, produce minimum secondary wastes and are sustainable based on current and future economic and social societal needs.Renewable energy technology is playing a vital role in protection of environment. Itreduces the quantities of CO2 emissions released into the atmosphere, and in doing so contributing to a reduction of the greenhouse effect. It is clean and has a much smaller impact on the environment in comparison to conventional energy technologies.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 353

NANOMATERIALS AND BIOREMEDIATION

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ABSTRACT

The use of nanomaterials is an innovative method to decontaminate the contaminated site has received greater attention recently. Due to population explosion, there is huge need for the resources and it leads ultimately contamination of natural environment. Bioremediation provides a good clean up strategy for some type of waste, but as it is expected, it will not beuseful for all types of chemicals. It maynot provide a feasible strategy at sites with high concentrations of chemicals that are toxic to most microorganisms such as heavy metals and salt. Hence, nanomaterials may be applied for bioremediation which will not only have less toxic ef fect on microorganisms, but will also improve the microbial activity of the specific waste and toxic materials which will reduce the overall time consumption as well as reduce the cost also.

Abstract No. 354

INTERNATIONAL CONVENTIONS ON BIODIVERSITY CONSERVATION: AN ANALYSIS

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ABSTRACT

Biodiversity-related conventions work to implement the key slogan of environmentalism "Think Globally, Act Locally"i.e.to work atthe national, regional and international level in close co-ordination to reach shared goals of conservation and sustainable use. In meeting their objectives, the conventions have developed a number of complementary approaches (site, species, genetic resources and/or ecosystem-based) and operational tools (e.g., programmes of work, trade permits and certificates, multilateral system for access and benefit-sharing, regional agreements, site listings, funds).

The International Conventions on Biodiversity Conservation are; The Convention on Biological Diversity, The Convention on International Trade in Endangered Species of Wild Flora and Fauna(CITES), The Convention on Wetlands of International Importance (Ramsar Convention),Convention on the Conservation of Migratory Species of Wild Animals, The International Treaty on Plant Genetic Resources for Food and Agriculture, World Heritage Convention (WHC), International Plant Protection Convention (IPPC), International Whaling Commission (IWC). While each convention has its own specific objectives and commitments—inter-linkages between the issues each addresses, and potential complementarities in their monitoring and implementation processes, provide a basis for cooperation.

The proposed paper would be an effort to comprehend and analyse these international conventions on biodiversity. The viabilities of these conventions and the power dynamics behind them at international level will also be assessed.

Keywords: Biodiversity, Conservation, Implementation.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 355

ROLE OF TEACHER EDUCATORS TOWARDS ENVIRONMENTAL AWARENESS

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ABSTRACT

Environmental education is one of the important thrust area that is gaining attention of the educationist and environmentalist all across the globe.Environmental education acts as a powerful tool in enhancing knowledge and awareness about the environment which help in finding solutions of the associated problems. Teacher plays an indispensable role in shaping, forming and fostering the positive attitude among students towards degrading natural resources and their impact on human life.These teachers impart scientific information and judicious knowledge of environmental issues and problems.Natural resources meet the need of human beings and overuse of these resources, beyond the limits, can create many serious problems.A teacher should act as a friend, guide and philosopher for the students in order to provide the correct environmental insights. Therefore, there is a need to study the role of teacher educators, as they are responsible to inculcate education to prospective teachers as well as teachers who are in service, in the form of orientation of teachers towards environmental awareness, issues and challenges. Considering theextremerequirement of environment awareness, this paper explores the role of teacher education in providing awareness about environmental problems and suggests some remedial measures.

Abstract No. 356

LAW RELATED TO ENVIRONMENT

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ABSTRACT

Environmental laws has developed in response to emerging awareness of and concern over issues impacting the entire world. While laws have developed piecemeal and for a variety of reasons some effort has gone into identifying key concept and guiding principles common environmental laws as a whole. Environmental law is the collection of laws regulations, agreements and common law that governs how humans interact with their environment. Environmental law not for only protect the environment but they also use for who can use natural resources. Low of environment cover the following range of topics like air, water, waste, chemicals, hunting and fishing etc. Environmental lows comes from a number of plans. Environmental regulation can be burnt topic among local, state and nation government. Environmental laws are controversial must debate the necessity, fairness and cost effectiveness of environmental regulation. Individual laws also called acts are arranged by subject in the united states and code is the regulation and rules are made by executive departments and agencies. The six laws related to environment protection are as fallows.

- The environment (protection)Act 1986- Authorizes the central government to protect and improve environmental quality, control and reduce pollution from all sources.
- The forest (conservation) Act 1980-Provide the protection and the conservation of the forest.
- Water (prevention and control pollution) Act 1974- Establishes an institutional structure for preventing and abating water pollution.
- Air (prevention and control pollution) Act 1981- Provides for the control and abatement of air pollution.
- The atomic energy Act 1982- Deals with the radioactive waste.
- The wildlife protection Act 1973- Provides for the protection of bird and animals and for all matters that are connected it whether it be their habitat of the water hole of the forests that sustain them.

In the constitution of India it is clearly stated that it is the duty of state to protect environment .wildlife and forest of country. It imposes a duty on every citizen to protect and improve the natural environment including forest, river and wildlife.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 357

CYBER CRIME: A BIG CHALLENGE FOR SOCIETY

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ABSTRACT

The purpose of this paper is to explain the cybercrime and how to face such crimes and how to secure the data from such attacks. Due to growing advancement of technology, most of the sectors of our day-to-day life are making their presence in cyber space. Mobile phones, social networking, banking transactions and business transactions are done through internet. So we need to be very careful about cybercrimes happened these days. In this paper we elaborate about the basics of cyber security and how it is implemented in India. Also we explain about the threats of cyber security and understanding the legal aspects of cyber security. Cybercrimes are happened globally so the legal acts are the similar in all countries. Cybercrime is a term for any illegal activity done through computer, mobile phones, ATMs etc. Here we will also discuss some areas where cyber space is very active and there is need to implement cyber security effectively. In this paper we also explain the latest trends of cybercrime i.e. digital forensic.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 358

N-NITROSODIETHYLAMINE INTAKE STIMULATED LIVER FIBROSIS IN RODENTS: POSSIBILITIES TO DISCOVER DRUGS AND DRUG TARGETS

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ABSTRACT

Nitrosodiethylamine (NDEA) or diethylnitrosamine (DEN) is an environmental mutagen and carcinogen. The presence of this pale yellow liquid organic compound has been detected in cured meat, smoked fish and cigarette smoke. Owing to its solubility in water, the presence of this notorious compound has been observed in drinking water. NDEA is a commonly used additive in gasoline and lubricants, as a stabilizer in plastics, and in research to induce hepatotoxicity. NDEA is DNA reactive after bioactivation and produces tumors in a number of animal species tested: mice, rats, guinea-pigs, rabbits, dogs, pigs, monkeys, hedgehogs, fish, frogs and birds. Bioactivation of NDEA occurs by P450 isozymes including CYP2E1, which is ethanol inducible.N′-Nitrosodiethylamine can induce benign and malignant tumors once administered via ingestion, injection and inhalation. The major target organs of NDEA are the liver, respiratory and upper digestive tracts and kidney. Several studies have documented that even a single dose of NDEA can induce cancers, however relatively milder intake of NDEA can also generate fibrosis in the rodent liver. Thus, NDEA-induced liver fibrosis model in rodent is an extensively used experimental model to investigate prospective drugs and targets. On these lines, a number of naturals have been investigated to show hepatoprotective and antifibrotic effects. Considering the changes in lifestyle and food habits, liver disorders are continuously increasing. Due to friendly nature and free of any side effects, the demand of naturals is increasing to find their antifibrotic potential. In this context, apple and pomegranate juices have been tested to find their ameliorative effects against NDEA-induced hepatic fibrosis. The obtained data based on liver biochemistry, tissue ultrastructure, molecular and bioinformatics approaches suggested curative effects of nutritional supplements against NDEA-induced liver damage.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 359

YOGA FOR PEACE

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Yoga is 6000 years old concept of Bhartiya Sanskrit propagated by Patajanjali.
Yogas chittavritti nirodha is Patanjali's definition of Yoga. It means that yoga is the removing of the fluctuations of the mind.
Patanjali's Yoga Sutras
The literal translation of yogaschittavrittinirodha is as follows:

YOGA = to yoke, to join, to unite
CHITTA = consciousness
VRITTI = fluctuations
NIRODAH = quieting of

During last three decades our philosophers/yogis are regularly visiting in Western World and propagating Yoga, therefore, besides the terminology mentioned above, a new terminology has developed which needs to be mentioned herein.
It is difficulty to define peace because every man has got his own behavior and accordingly he has own aims and definition is peace is related with the aims of man in spending life.
Meaning of Peace
Peace is the behaviour that encourages harmony in the way people talk, listen, and interact with each other and discourages actions to hurt, harm, or destroy each other and Inner Peace, Societal Peace, Cosmic Peace or Peace with Nature -

Positive thinking
Compassion
Be your true self
Non-violent conflict resolution
Respect for every human being
Care for the planet
Practice of Yoga

Ultimate Objects of Yoga
According to Patajanajali there are following disciplines in Yoga :-

Yamas- (internal purification through moral training preparatory to Yoga)
Niyamas- (cleanliness, contentment, mortification, study and worship of God)
Asanas- Physical postures or exercises
Pranayama- (Control of vital energy/ Breath control)
Pratyahara- (Withdrawal of the senses/ making the mind introspective)
Dharana- (Concentration of the mind)
Dhyana- Meditation

Samadhi- Attainment of the super conscious state
Benefits for Yoga

Reduction of mental disturbance and tension resulting in nervousness, irritability in mind and gradual disappearance of nervous inability and confusion including depression and mental fatigue. Every man on earth prefers to have this health.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 360

LAWS RELATED WITH ENVIRONMENT

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ABSTRACT

Related Laws are in three categories.
1- International Law -
The term, International Law, is in modern times generally understood as denoting the system of customary and conventional rules which regulate the conduct and intercourse of which regulate the conduct and intercourse of civilized States, and which are accepted by such States as of international obligation.
International Conventions :
Stockholm (1972)
Helsinki (1974)
European Convention (1979)
Vienna (1995)
Montreal Protocol (1987)
Toronto (1988)
Rio de Janerio (Earth Summit) 1992
Earth Summit (1997)
London (1975)
Copenhagen Convention (2009)
2- Laws made by Government of India : Constitution of India
Article 48A -
The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country.
Article 51A:
Fundamental Duties of Citizen of India
It shall be the duty of every citizen of India —
(g) to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures;
THE ENVIRONMENT (PROTECTION ACT), 1986
Section 2(a)defines as below–
"environment" includes water, air and land and the interrelationship which exits among and between water, air and land, and human beings, other living creature, plants micro organism and property;
National Green Tribunal Act, 2010
For the effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources.
3- **Customs related to environment in Hindu Dharma**
In Bhagwat GeetaBhagwan Krishna declared in Chapter 10 that of all trees(I am)the Ashwashth and in Shree Ramcharitmana, KishkindhaKhand poet Tulsidas in verse 10 wrote that Body of Man is made of five elements namely - chitijalapavakagaganasamira.
Conclusion :
Hindu Dharma considers human body as part of universe.Environmental pollution is by-product/waste product of scientific, technological development of developed countriessuch as America, Canada and European countries, still not sharing and implementing the views expressed in various conventions and are greatly responsible for pollution.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 361

AGRICULTURE, BIODIVERSITY AND SUSTAINABILITY ISSUES

Sadhana Singh

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ABSTRACT

Homo sapiens are fortunate to be inhabiting a planet i.e. earth which has a mind boggling biodiversity to offer. Innumerable species of plants, animals different ecosystems, genetic diversity is all part of this fascinating scene. What is most remarkable is that this diversity ensures natural sustainability of all life forms including plant life provided the ecosystems are not interfered with much and are allowed to stay healthy.

Unfortunately modern agricultural practices have taken a huge toll on sustainability of biodiversity. Modern agriculture relies heavily on chemical fertilizers, HYV seeds, massive irrigation and use of insecticides and pesticides on a large scale. This chemical assault is destroying biodiversity of the soil, contaminating water sources and creating deleterious effect on health and nutrition. Traditional agriculture was fully in tandem with environmental sustainability and helped sustain biodiversity.

This paper explores in detail the inter linkages between agriculture biodiversity and sustainability issues and tries to offer solutions.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 362

IMPACTS OF CLIMATE CHANGE ON AGRICULTURE AND FOOD SECURITY

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ABSTRACT

Environment change has emerged a major challenge for sustainable human settlement. It has adverse impact on wild life, agriculture, incidence of diseases, local weather, rise in sea level and more heat waves etc. India is highly vulnerable to climate change as its economy is heavily depends on climate sensitive sector i.e. agriculture.Agriculture is the income provider for more than sixty five percent of the population. Although the contribution of the agriculture to Indian GDP has gone down considerably in the last few years but still this sector continues to be the largest economic sector in India. Agricultural outcomes are determined by complex interactions among people, policies, and nature. Crops and animals are not only affected by changes in temperature and precipitation but also influenced by human investments such as irrigation systems, use of techno-biological inputs and various services etc. However, uncertainties about where climate change will take and how farmers will respond make it difficult to move forward on policies to combat the effects of climate change. Today agriculture contributes about 14 percent of annual GHG emissions, and land use change, including forest loss, contributes another 19 percent with the developing world accounting for about 50 percent of agricultural emissions and 80 percent of land-use change and forestry emissions. This paper reviews the impacts of climate change on agriculture and food security and suggests some strategies to mitigate the problem.

Abstract No. 363

*E*CO TOXICITY AND HEALTH ASPECTS OF CHEMICAL AND BIOLOGICAL WEAPONS

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ABSTRACT

Any single or combination of two or three chemicals in our environment from our activities disturb the human health. Man-made chemical hazards while not cause immediate health punishment may turn out detrimental to human's well being eventually. Chemical harms have their effects on the global level. They are caused by chemical substances causing significant damage to our environment such as zinc oxide which is a major paint pigment which is very toxic to aquatic system. The aquatic environment may be considered in terms of the aquatic organisms that live in the water and the aquatic ecosystem ofwhich they are a part.

Abstract No. 364

GLOBAL AND LOCAL ENVIRONMENTAL ISSUES

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ABSTRACT

Our Mother Earth is currently facing lot of environment concerns. The environmental problems like global warming, acid rain, air pollution urban sprawl, waste disposal, ozone layer depletion, water pollution, climate change and many more affect every human, animal and nation on this planet. Over the last few decades, the exploitation of our planet and degradation of our environment have gone up at an alarming rate. As our actions have been not in favor of protecting this planet. We have seen natural disasters, striking us more often in the form of flash floods, Tsunamis and cyclones.

Different environmental groups around the world play their role in educating people as to how their small actions when combined together can play a big role in protecting this planet. If you look at the environment around us, you can see that there are a number of issues that come to our attention.

Abstract No. 365

MOLECULAR PHYLOGENY OF THREE FORENSICALLY IMPORTANT FLIES OF CALLIPHORIDAE: DIPTERA

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ABSTRACT

Approximately 8% of calyptrate diversity comes from the Calliphoridae, which includes flies of medical, veterinary and forensic importance. Calliphoridae being a paraphyletic group studies about the evolution of the family have long been the subject of continuous re-evaluation and re-interpretation. In the present study sequencing of NADH Dehydrogenase 6 (ND6) gene has been used as marker to unravel molecular phylogeny of the three forensically important calliphorid species viz.,Hemipyrelliapulchra(Weidemann), Luciliacuprina(Weidemann), Chrysomyamegacephala(Fabricius), ND6 gene was amplified, sequenced and the sequences were aligned with Clustal X software. The size of amplicons ranged from 678 bp to 683 bp in the three calliphorid species. Nucleotide ratio, variable and parsimony informative sites and nucleotide pairwise distances were calculated by MEGA 5 software. The gene sequence of ND6 amplicon revealed 92 variable and 44 parsimony informative sites. The average nucleotide composition was T=35, C=13, A=35 and G=18 and the transition bias was 0.88. Average nucleotide pairwise distance ranged from 0.056 to 0.199. The phylogenetic relationships derived from Neighbour Joining (NJ) and Maximum Parsimony (MP) methods, using D. yakuba as an out group indicated close phylogeny relationships among the three calliphorids. Present study also indicates the utility of ND6 gene to unravel phylogenetic relationships among calliphorids.

Abstract No. 366

GLOBAL AND LOCAL ENVIRONMENTAL ISSUES

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ABSTRACT

Global and Local Environmental Issues' is a phrase that refers to the effect on the climate of human actions, in particular on fire of fossil fuels (coal, oil and gas) and large-scale deforestation, which cause emissions to the atmosphere of large amounts of 'greenhouse gases', of which the most important is carbon dioxide. Such gases take up infrared radiation emitted by the Earth's surface and act as blankets over the surface keeping it warmer than it would otherwise be. Connected with this warming are changes of climate. The basic science of the 'greenhouse effect' that leads to the warming is well implicit. More detailed understanding relies on numerical models of the climate that integrate the basic dynamical and physical equations describing the complete climate system. Many of the likely characteristics of the resulting changes in climate (such as more frequent heat waves, increases in rainfall, increase in frequency and intensity of many extreme climate events) can be identified. Substantial uncertainties remain in knowledge of some of the feedbacks within the climate system (that affect the overall magnitude of change) and in much of the detail of likely regional change. Because of its negative impacts on human communities (including for instance substantial sea-level rise) and on ecosystems, global warming is the most important environmental problem the world faces. Adaptation to the inevitable impacts and mitigation to reduce their magnitude are both necessary. International action is being taken by the world's scientific and political communities. Because of the need for urgent action, the greatest challenge is to move rapidly to much increased energy efficiency and to non-fossil-fuel energy sources. This paper presents the first broad based research on the impact of climate change on historic buildings, buried archaeology, parks and gardens Research coincided with the publication of the climate change scenarios and other studies assessing regional climate change and the impact on nature conservation and gardens.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

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Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
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Abstract No. 367

PREVALENCE OF *KERATINOPHILIC* FUNGI IN DIFFERENT WASTE HABITATS OF KANPUR AND THEIR IMPORTANCE IN KERATIN DEGRADATION

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ABSTRACT

Soil constitutes a natural and one of the most complex of microbial habitats, in which many fungi complete their entire life cycle. The soil *keratinophilic* fungi are responsible for the breakdown of any keratin containing wastes such as hair, fur and feathers. These fungi therefore play a significant role in the breakdown of soil debris. *Keratinophilic* fungi are of great importance for two main reasons. Firstly, these fungi play a very important role in ecosystem functioning and degrade a major portion of soil keratin together with bacteria and actinomycetes, which otherwise would have been a major pollution problem. Secondly, these fungi are potential producers of industrially important enzymes-proteases. Kanpur is an industrialised city with a large population living in unhygienic conditions. The rapid urbanization and industrialization has increased the amount of solid waste. The utilisation of this waste is very important for the economy and nature. Habitats under solid waste are source of various pathogenic fungi including keratinofers. *Keratinophilic* fungi play an important role in the decomposition of the substrate in the habitats. This could also be used in the biotechnological processes, for example, bioremediation of waste contaminated sites. As *keratinophilic* fungi display potentially pathogenic characters to both human being and animals, they could be considered as bioindicators of environmental pollution with human and animal faeces. There is a higher risk of infectious diseases due to such contamination.

Therefore, thesefungi are of hygienic and epidemiological importance, especially in highly populated areas. A total of ninety samples were collected from five different waste habitats of Kanpur (municipal waste, hospital waste, tannery waste, aquatic waste and individual waste) in summer, monsoon and winter seasons. Isolation was performed by employing the hair-bait technique of Vanbreusegham (1952a). The samples yielded 178 isolates belonging to 15 genera and 27 species. Eighty-one samples were recorded to be positive for *keratinophilic fungi* and related dermatophytes. Fifteen genera, namely Acremonium, Alternaria, Apinisia, Botryotrichum, Chaetomium, Chrysosporium, Cladosporium, Ctenomyces, Curvularia, Epidermophyton, Fusarium, Malbranchea, Microsporum, Mycelia sterilia andPaecilomyces were isolated.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 368

IMPACT OF CLIMATE CHANGE ON INDIA

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ABSTRACT

Climate change is one of the main environmental challenges faced by India as well as the world today.Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, costing people, communities and countries and expected to affect even more tomorrow. People are experiencing the significant impacts of climate change, which include changing weather patterns, rising sea level, and more extreme weather events. The poorest and most vulnerable people are being affected the most. Climate change is causing various adverseimpacts on, water resources, agriculture, forests, biodiversity and health. Abrupt change in climate is a main concern. Declining of agricultural productivity is themain impact of climate change on India. In India, the majority of population depends on agriculturedirectly or indirectly. Climate change is posing additional threat on the ecologicaland socioeconomic systems, which is already having pressure due to fasturbanization and industrialization. This study aims at analyzing the impact of climate change and its aspects in the Indian context.

1st International Conference on Environment and Society (ICES 2019)
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Abstract No. 369

GENETIC COMPONENTS AND COMBINING ABILITY ANALYSIS ITS TRAIT IN LINSEED (*LINUM USITATISSIMUM L.*)

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ABSTRACT

Ten morphologically diverse parents viz. Padmini, J-23, Parvati, PCL 41-2, PCL-34, PCL-21-2, T-397, PCL-20, PCL-24 and PCL-44 were studied for days to flower, plant height, number of branches per plant, days to maturity, number of seeds per capsule, 1000 seed weight and seed yield per plant. Highly significant differences among all the attributes in both (F1 and F2) generations were most appreciable except number of tillers per plant, number of seeds per and test weight in parents vs F1s including number of primary branches in parents vs F2S. Mean value of F1 hybrids were higher over the parents, similarly the values of F2 for days to flower and days to maturity was also estimated. Highly significant values of dominance components (H1 and H2) always being considerable for acquired traits existence. Additive and non-additive significant gene effects for gea and sea might be highly considerable for days to flower, number of tillers, number of branches, days to maturity alongwith test weight and seed yield. Good general combines in respect of yield were Padmini, T-397, PCL 44 and J-23. Most considerable combinations on the basis of sea effects were J 23/PCL 44, PCL 34, PCL 24 and PCL 24, PCL 44.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 370

RELIGIOUS USE AND CONSERVATION OF PLANTS

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ABSTRACT

Mythology is a part of every religion. In India, amongst Hindu many plant species are associated with religious functions, rituals and also in celebration of festivals. Plants are truly a gift by god to the mankind; human beings recognized their dependence on plants at the very beginning of their life on the planet. The sacred plants of India are actually worshipped throughout the nation. Plants have played a vital role in development of human civilization since past time. Beliefs and practices have been principal factors to increase their motivations in planting and protecting these species at home or in the surrounding area for the religious purposes thus increasing their occurrence and abundance in their locality. Some of the plants are –Aamla (*Phyllanthusemblica*, Ashok (*Saracaindica*), Banana (*Musa paradisiaca*), Banyan (*Ficus-benghalensis*), Bel (*Aegle marmelos*), Chandan (*Santalum album*),Gudhal (*Hibiscus rosa-sinensis*),Kadam (*Anthocephalus kadamba*), Lotus (*Nelumbonucifera*), Mango Tree (*Magniferaindica*), Nariyal (*Cocos nucifera*), Neem (*Azadirachta indica*), Pipal, (*Ficusreligiosa*),Tulsi (*Ocimum sanctum*) etc,. The religious plants are strongly protected and actively planted by us. Due to easy availability of these plants, this has given an important place in our great cultures by worshiping them and is one of way to conserve them from being extinct.

Abstract No. 371

SOCIO-ECONOMIC VALUES IN A SOCIETY AND ITS CHALLENGES

Manya Misra and Ananya Misra

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ABSTRACT

The term socio refers to "the study of the behaviours of people" including the ways that they interact with each other or their whole family structure. Another word 'economic' refers to the economy, such as people's income and finances. Thus the term 'socio-economic' links together all the social and financial issues for the survival in the society. There are so many social problems in our society, which include antisocial behaviour, poverty, drug abuse, alcohol abuse, economic deprivation, unemployment and sexual abuse.

Socio-economic issues are factors that have negative influence on an individual's economic activity including lack of education, religious and cultural discrimination unemployment and corruption due to over burden of population. Among the people, the socio-economic status is a broad concept which includes many factors like educational, occupation, wealth and deprivation. In a society there are five socio-economic factors namely social status, social expectations, social responsibility, economic security and job security. The social economic impact is used to assess the weight of socio-economic cost against the socio-economic benefit. The possible analysis includes the consequences for all the members of the society and all kinds of impacts like health and economic impacts which effects employment.

The socio-economic status is categorized into three levels, which are income, education and occupation. The solution of the social problems refers to any undesirable condition that is opposed either by the whole society or by a small part of the society.

In the above study, the authors try to explain various social problems and evils which are barriers to development and progress in a healthy environment for people of India. In the present situation authors focus on various socio-economic issues, factors, socio-economic status and solution to get rid of different social problems in a society.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
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Abstract No. 372

ROLE OF INTELLECTUAL PROPERTY RIGHT & THE EFFORTS REQUIRED FOR FOOD SECURITY IN INDIA

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ABSTRACT

India is grappling with poverty and shortage in food supply; hence it is needed to have a regulatory framework to overcome these difficulties. For health life, nutritious & diseased free food is required to meet daily needs of all people of the country & it enforced food security. Food security boosts the agricultural sector & also helps to control in food prices. During production, processing, marketing & distribution of food, the food handling should be as per the rules & regulations & it also follow ethical standards. To fulfill the dietary needs of the country it is required to develop agriculture in all aspects including technologies like genetically modified organism etc. It is mandatory to our country to encourage different organization to formulate their food security policies as per the intellectual property rights.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 373

LAC INSECT IS NATURE'S BOON TO HUMANKIND FOR SUSTAINABLE PRODUCTION OF COMMERCIAL LAC

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ABSTRACT

Lac insect is nature's boon to humankind. Lac, an important versatile commercial resin of wide utility, is the natural heritage of India. Lac insects are placed under the Order Hemiptera, suborder Homoptera, superfamily Coccoidea, family Tachardiidae. Nine genera, 89 species are reported from world and two genera, 19 species are reported from India. It has described two strains of Kerrialacca, theKusmi andRangeeni on the basis of host preference and life cycle.The Lac insect survives on Schleicheraoleosa(Kusum) and has two generations(Aghani&Jethwi) in a year of almost equal duration (six month)is known as Kusumistrain and those lac insect preferred otherthanKusum plant, it is known as Rangeenistrain, It has also two generations in a year, ones called Katki, its duration four month and next generation has eight month, it is known asBaisakhi. Presently, the number of lac-host plants of the Indian lac insect, Kerrialaccais 129 in the Indian region of which19 are good lac-host of commercial importance. Pruning of lac-hosts is an important operation to provide suitable shoots for the lac insects to feed and thrive upon them. Appearance of maximum number of shoots of suitable age for lac inoculation depends upon proper pruning. The selection of host-habit, host-plant, lac strain and inoculation of brood on newly suitable shoot is prerequisite for commercial lac production. Resins are secreted by tiny gregarious scale insects as a protective covering around their body. Thriving on succulent shoots of a number of plant species, these Insects form a thick encrustation around the twigs, which are collected, scrapped for obtaining raw lac or sticklac. Passing through several steps of processing, sticklac is converted into various commercial forms as seedlac, shellac, button lac, bleached lac, dewaxed decolorized lac etc. Several valuable by-products like lac dye lac wax, obtained while processing, are also of great industrial utility.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 374

LANDSLIDE HAZARD REASONS AND LANDSLIDE CONTROLS ECONOMICALLY NEAR MANSA DEVI TEMPLE IN HARIDWAR

Neha Rani

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ABSTRACT

This paper presents a case study of landslide hazard randomly nature havoc. Landslide hazard reason detected by analysis and visualization or given early warning of mansadevitemple. Landslide emergency area selected by image, image using a data driven approach and taking nearest mansa devi temple. Landslide controls is necessary to collect data and information and select dangerous landslide area. The form of georefrencing area plotted, if area is plotted. Methodology used in that area, this is a economical landslide controls phenomenon area plotted likes land cover, slope angle, slope elevation, disturbed area side layer roads/stairs . landslide controls methodology likes reinforcement of floor slabs, installation of drainage pipes for rain water or slope drainage or in temple daily demand of water, planting of slopes that are vulnerable to landslides with deep rooted trees and shrubs, retaining wall establish surrounding of mansa devi temple, external wall in surrounding of road/stairs path.

Landslide hazard reasons like earth shattering movement, cutting of hill for design and implementation, vibrations of machine, instantly increasing number of journeyer, climate change, heavy rainfall, earthquake, environmental changes, deforestation, vibrations of railway track etc.

Abstract No. 375

UTILITY OF OCIMUM SPECIES (TULSI) IN RURAL AREAS OF UTTAR PRADESH

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ABSTRACT

Tulsi (Ocimum tenuiflorum) is a medicinal plant found in every Indian home because of its religions and medicinal properties. More than 50 species of Tulsi are prevalent across the world. Out of these, 25 species are found in India. Domestic tulsi (Ocimum sanctum), Rama tulsi (Ocimum gratissimum), Shyama tulsi (Ocimum americanum), Kapur tulsi (Ocimum clemanchericum), Jangli tulsi (Ocimum viride), Marua tulsi (Ocimum basilicum) etc. are some of the major species out of them. In India, Tulsi is used as a household remedy (for curing a number of ailments) taught by grandmothers since ages with very high faith and beliefs. Every part of Tulsi plant such as leaves, stem, root, flower, seeds etc. is used as a medicine. All parts of Tulsi are useful in curing ailments related to Kapha and Vata. Paste of Tulsi leaves is very much useful in a number of skin related problems such as cuts, wound, swelling, epilepsy etc. The powder of Tulsi seeds is a peerless medicine for curing dysentery, diarrhea and other intestinal problems. Similarly, the boiled extract of Tulsi heals several kinds of fevers. A mixture of juice of Tulsi leaves with honey is very beneficial in problems of liver and spleen. Powder of dried Tulsi roots is very much beneficial in problems related to reproduction. The present study is based on collecting information about several applications of Tulsi as indigenous medicine in rural areas of Uttar Pradesh along with enhancing the importance and utility of Tulsi as a medicine.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 376

AMBIENT TEMPERATURE CORRELATES PREVALENCE OF INFECTION BYPLASMODIUM FALCIPARUMAND P. VIVAXIN INDIA

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ABSTRACT

Malaria is an outcome of interactions among human host-malaria parasites-mosquito vectors, influenced by local environmental conditions, like temperature. Till date, no direct correlation between temperature and prevalence of the most widely distributed species of Plasmodium using high sensitive diagnostic test (e.g. PCR assay) has been established. We sampled 511 malaria positive blood samples in two different months (with variable ambient temperature and relative humidity) at three different malaria endemic Indian locations, and determined the prevalence of either mono infection by *P. falciparum* or *P. vivax* or mixed infection in each sampled individual using PCR diagnostic assay. We found strong positive correlations between temperature variations and differential prevalence of P. vivax and *P. falciparum* at lower temperature incidences of *P. falciparum* increases than *P. vivax*, and vice versa. We argue that temperature can be a strong indicator in the development of early warning system and eventually aid in malaria.

Abstract No. 377

INFLUENCE OF BODY WEIGHT IN FRESH WATER FISH *HETEROPNEUSTES FOSSILIS* (B)IN RELATION TO TAPEWORM INFESTATION

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ABSTRACT

Monthly parasitological surveys were came out to study host parasite relationship and cestode infection in relation to body weight of fresh water fish Heteropneustesfossilis (B) in relation to cestode infection It was found that fishes having body weight 151-200 gms, shows greater prevalence and relative density .

Abstract No. 378

DECOMPOSITION ANALYSIS OF FOOD GRAIN PRODUCTION IN INDIA

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ABSTRACT

Food grain production in India has increased considerably from 50.82 million ton in 1951 to 285.01 million tons by 2017-18. Introduction of green revolution, modernization of agriculture, encouragement to research and extension in agriculture are some of the factors contributed for this growth. The time series secondary data on area, production and yield of food grains from 1950-51 to 2017-18 were broadly partitioned into seven decades in order to demonstrate the trend of food grain production in more convincing and simple manner in the present study. The farmer could achieve these increasing mainly introduction to resistant varieties against different diseases and insects-pests, better management and matching with improved production and protection technologies. It has also been observed that the growth of area, production and yield for food grain registered positive during overall period. There is positive growth in area, production and yield during each of the decades, except negative growth rate in area during eighties and ninties. Decomposition analysis was performed and the percentage contribution of area, yield and their interaction on food grain production for each decades and the overall period was also estimated. The yield effect has a greater contribution food grains production as compared to area effect and combined area and yield interaction effect for overall period. There is area effect during fifties and sixties and after that production is changed due to mainly yield effect.

Abstract No. 379

OCCUPATIONAL HEALTH PROBLEMS AMONG MIGRANT AND AGRICULTURE WORKERS

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ABSTRACT

Migrant and seasonal farm employees square measure one among the foremost under served and understudied populations within the Republic of India. The whole population of such farm employees has been calculable at five million, of whom concerning 2 hundredth live or add Republic of India. Farm employees perform strenuous tasks and square measure exposed to a large sort of activity risks and hazards. Low socioeconomic standing and poor access to health care additionally contribute to existing health issues during this population. Potential farm work-related health issues embrace accidents, pesticide-related diseases, system and soft-tissue disorders, dermatitis, non infectious metabolism conditions, fruitful health issues, health issues of youngsters of farm employees, climate-caused diseases, communicable diseases, bladder and excretory organ disorders, and eye and ear issues. Few epidemiological studies exist of those activity health issues. No comprehensive epidemiological studies have assessed the magnitude of activity health issues among migrant and seasonal farm employees and their dependents. Though the migratory nature of this population makes semi permanent studies tough, the event of standardized knowledge assortment instruments for health consequences and scientific assessment of farm work exposures and dealing conditions square measure important to characterize and cut back the activity health risks in farm employees.

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 380

COMPARATIVE STUDY OF FUNCTIONAL FOOD USER AND NON-USERS AMONG TYPE I AND TYPE II DIABETIC GROUP BASED ON THEIR ANTHROPOMETRIC CHARACTERISTICS

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ABSTRACT

Diabetes mellitus, commonly known as diabetes, is a metabolic disease that causes high blood sugar. The hormone insulin moves sugar from the blood into your cells to be stored or used for energy. With diabetes, your body either doesn't make enough insulin or can't effectively use the insulin it does make. Untreated high blood sugar from diabetes can damage your nerves, eyes, kidneys, and other organs. Type1 is an autoimmune disease and Type 2 diabetes occurs when your body becomes resistant to insulin, and sugar builds up in your blood. Anthropometric characteristics are traits that describe body dimensions, such as height, weight, girth, and body fat composition. The present study was undertaken to compare the functional food user and nonuser in diabetes patients based on their anthropometric characteristics. The results of study presents the mean comparison between functional food user and non-users among type I and type II diabetic group based on their anthropometric features such as weight, height, waist circumferences and hip circumferences. So far as the body weight, in case of type I diabetes, that the maximum (68.7) kg body was noticed in functional food nonuser and minimum (67.2)kg was found in case of functional food user. Here t-value is (-0.858) and P value (0.392>0.05) that revealed that there was no difference between functional food and non-user in case of type I diabetes while in case of type II diabetes the body weight was similar in both functional food user and nonuser. The t value was (-0.200) and P value (0.842>0.05) that showed the result was non-significant.

Abstract No. 381

USAGE OF BIOPESTICIDES IN INDIA AND THEIR EFFECTS

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ABSTRACT

Man has been dependent on plants and agricultural crops since the beginning of the civilization. Since the very beginning of agriculture, man has to struggle hard for preventing his crops from trouble causing insects or pests. To solve this problem, pesticides were discovered. However, it was not the end of the problem. Pesticides not only prevent the crops from harm causing insects, they are also poisonous for humans as well. Hence, bio-pesticides were discovered. A Bio-pesticide is a formulation prepared from naturally occurring substances that can control pests in a non-toxic and eco-friendly method. Bio-pesticides are either derived from animals, plants and micro-organisms. They can even include living organisms that are friendlier to man but repellent to pests. When compared to chemical pesticides, Bio-pesticides are less toxic for humans and hence are desirable and sustainable tool for pest control. They are specifically targeted to one or more pests and are mostly ef fective in very small quantities. They decompose quickly and can contribute greatly for pest management. The present study deals with the usage of bio-pesticides for pest control in agriculture in India and their role in crop production.

Abstract No. 382

CONSERVATION OF BIODIVERSITY IN INDIA WITH SPECIAL REFERENCE TO SOCIO-CULTURAL PRACTICES: A SURVEY REPORT

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ABSTRACT

Existence of human beings is not possible without biodiversity. Biodiversity is the wealth on the earth which includes millions of plants, animals and microorganisms along with the genes they contain and the intricate and often delicate ecosystems they formulate. As a result, many plants and animals are at risk and under threat of extinction. India is one of the world's richest countries in terms of biodiversity with over 45000 different plant species and is a country with diverse cultural traditions from North to South and East to West. It is the country which has the strongest cultural traditions that help in conservation of nature and natural resources. India has suffered almost unabated devastation of its natural biological heritage and much of what remains has been preserved due to conservation oriented sociocultural and religious practices. Different regions have different cultural traditions where people have strong cultural activities, beliefs, taboos, totems and perform various religious rituals, celebrate social ceremonies and festivals with various types of plants and their parts. Many plants such as Areca catechu, Butea monosperma, Calotropisgigantea, Curcuma longa, Lawsoniainermis, Piper betel, Saccharumofficinarum etc. are used in socio-cultural practices in India. People belonging to rural and ethnic communities conserve many plant species due to these traditional practices. In the present paper plant species used by rural and ethnic communities in various parts of India have been surveyed and discussed.

Abstract No. 383

HERITABILITY AND GENETIC ADVANCE STUDY OF GLADIOLUS

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ABSTRACT

Gladiolus is one of the most important bulbous crop and its spikes are used for the purpose of decoration. It has beautiful striping colours of floret in bicoloured and multicoloured cultivars. Its spike resembles like a sword so it is also known as 'Sword Lily'. Experiment was carried out at C.S.A. University of Agriculture and Technology in RBD with three replication. Data ware observed on 15 vegetative and reproductive characters and analysed the heritability and genetic advance. The estimates of heritability were classified into low, medium and high having heritability value less than 10%, 10-30% and above 30%, respectively . According to this, high estimates were obtained for all the characters. The highest estimates of these parameters were found for number of corms per plant (98.1035%) and in spike length (99.1528%). High estimates of genetic advance were recorded with the characters spike length and it was not noted minimum its plant height.

Abstract No. 384

INFLUENCE OF PHYSICAL FACTORS ON GROWTH PATTERN OF KERATINOPHILIC FUNGI –CHRYSOSPORIUMMERDARIUM ISOLATED FROM KANPUR ZOOLOGICAL PARK

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ABSTRACT

Keratinophilic fungi are a group of highly specialized fungi which are potentially pathogenic to man and animals. The seasonal occurrence of these fungi in soil is connected with different physical factors and climatic effects. Different soil samples collected from different section of Kanpur zoological park such as Aviary, *Serpentarium*, Nocturnal house, Guinea pig habitat, Rabbit habitat. Different fungal genera were recovered from different samples. *Chrysosporiummerdarium* isolated from Aviary section of Zoological park shows maximum growth at 280c temperature. At 420c, there was no growth. At pH 4 to 7, Chrysosporiummerdarium shows highest growth but growth decreases at basic pH level 8 and 9. *Chrysosporiummerdarium* produces 7.6 x 106 colonies/ml at 60-80% moisture content of soil. At dry condition and higher wet condition there was no fungus colony produces.

Abstract No. 385

UTILITY OF AZOLLA AS CATTLE FEED

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ABSTRACT

Azolla is a world wide known genus of aquatic pteridophyte which occurs fresh stagnant water in entire tropical, sub-tropical and warm temperate regions of entire globe including India. Utility of Azolla as organic compost is quite proved. Today, utility of Azolla as animal feed is rapidly increasing because it is rich in protein and minerals as animal food supplement. Azolla is widely used for feeding ducks and pigs in South East Asia especially in Singapore and Taiwan. It is also used for fish and poultry in Japan and Vietnam. Primary results of using Azolla as feed for rabbits and pigs are also very encouraging. Some studies have revealed that Azolla is a qualitative bio-feed for milk, meat and egg production. Azolla feed packages for cattle were perfected after expensive feeding trails. In Prayagraj and Kanpur Dehat, farmers found Azolla very beneficial as green feed for milk production from cows and buffaloes. It is also beneficial for health and vigor of animals. The present study deals with the possibilities of Azolla as animal feed in India.

Keywords: Azolla, cattle feed, green feed, milk production etc.

Abstract No. 386

IMPACT OF E-WASTE POLLUTION ON ENVIRONMENT

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ABSTRACT

Industrial development like other processes, has its positive as well as negative impacts. In 21st century, E-waste has emerged as most hazardous pollutant and one of the greatest threats to our environment. Any electronic device which is no longer fit to be used due to any reason is known as E-waste. Objects that turn into E-waste items include computers, televisions, mobile phones, cameras, laptops, washing machines, microwave ovens, refrigerators, tape recorders etc. Since no appropriate method of salvation of e-waste is available till now , such items add up to the mountainous pile of e-waste every day. A very few objects from these items can be recycled, but most of them are totally a waste. E-waste items like computers, laptops, mobile phones etc. contain big quantities of heavy metals such as cadmium, lead, mercury, nickel, lithium, aluminum etc. that are very hazardous for human health as well as for our environment. Burying under the ground and burning E-waste is equally dangerous and harmful. On burning them, harmful gases are liberated that not only cause global warming which is very harmful to the environment, but are also hazardous that cause cancer and bronchial diseases along with several other problems related to skin, eyes etc. Similarly, on being buried under the ground, they contaminate the ground water and reduce the fertility of agricultural land. Sometimes, E-waste also contains radioactive materials, which is also very hazardous to health for all living beings and can cause even death. At present, about 3 million computers are converted to e-waste in United States of America every year. 50-60 million mobile phones are converted to e-waste every year in Europe. About 40 million tonnes of e-waste is produced in India every year. 50000 tonnes of e-waste is also imported to add to it. Out of this, only 19000 tonnes of e-waste is recycled, while the rest of the huge amount remains untreated and creates problems for our health and environment. Hence, to recycle and reuse this e-waste, proper system of recycling and waste management is the need of the hour. There is no proper rules and regulations for management of e-waste in India. A solid planning is essential for this purpose to be implemented. To get rid of this problem, we should try to use electronic items for longer period by repairing them or getting the damaged parts replaced instead of replacing these items with new purchased items. Furthermore, some new items can also be manufactured by e-waste. Such steps can help fight the problem of e-waste in India. The present study deals with the ill effects of e-waste in India along with providing some solutions that can help us diminish the hazards of this modern pollutant.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 387

STUDY ON CONSUMPTION PATTERN AND EFFECT OF DAILY INTAKE OF FUNCTIONAL AND MEDICINAL FOODS TO CONTROL AND PREVENTION OF DEGENERATIVE DISEASES

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ABSTRACT

At the present health scenario various degenerative diseases such as diabetes, Cardio- vascular diseases, different types of cancers, gout etc. are become an epidemic health problem. The risk factors like hypertension, obesity, etc. are associated with of these degenerative diseases. The clinical nutritionists and food technologists have been involved and manufacture the products from those food ingredients which contains anti diabetic, antioxidants, anti-cancerous type of bioactive compounds. These foods are recognized as health promoting foods. Those food products are available in market and make high economic returns to the manufacturers due to its disease controling and health promoting claim such as oat meals, diabetic flour, multigrain cookies, fenugreek seed products etc. To investigate the consumption pattern of these foods among the CVD patients and diabetics with NIDDM, an attempt was made and recognised the daily consumers (25+25=50 patients)of these foods with medication. The biochemical assessment of blood pressure, blood cholesterol and lipid profile of CVD patients and blood glucose level for diabitics was used to investigate the improvement status and compared it with their nonconsumer patients of control group. The reveals of the study showed that most of the daily recorded blood pressure of CVD patients and blood glucose levels of diabitic patients were found to be high among functional foods non consumers in coparison to the consumer patients. Non significant differences were found in dietary intake of patients from both groups. The health profile of patients revealed that mild hypertension was recorded in potients of both groups. It is concluded that the functional foods have potential to control the blood sugar at non significant level. The dietary resrictions and medical care are necessary measures for diabetes and CVD management.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 388

GLOBAL AND LOCAL PERSPECTIVES OF AIR POLLUTION: EFFECTS ON HUMAN HEALTH

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ABSTRACT

Air pollution caused 5.5 million deaths in 2013 and was the fourth highest ranking risk factor for death in the world. The outdoor particulate air pollution specifically was the seventh leading risk factor for death globally whereas indoor exposure to household air pollution was responsible for 2.9 million deaths in 2013. Globally the ambient air pollution contributed to 6.7% of all deaths occurred in 2012. The household air pollution in the same year was responsible for 7.7% of all deaths globally. China and India have the most polluted air with less than 1% of the population living in areas meeting WHO guidelines. This is also reflected in terms of mortality with 64% of total deaths due to Indoor air pollution being in Asia, especially in China and India. In low and middle income countries household air pollution is responsible for 44% and ambient air is responsible for 38% of total deaths caused due to pollution in year 2012. Transport of air pollutants across the borders and continents is a major concern and challenge in various environmental treaties under consideration at global levels. Further, Globally PM2.5 is considered as major criteria pollutant for estimate of air quality. PM2.5 may have different compositions at different places and hence different physical and chemical effects. There is a need to assess the source and composition of PM at local level. PM composition may vary from heavy metals, soot particles to biological particles. Bioaerosols are airborne particles that are either living organisms themselves or originated from organisms. Common examples are bacteria, fungi, pollens and fragments of insects, animals or plants. Bioaerosols may form upto 34% of total aerosols in indoor air and may be crucial in defining the ambient indoor air quality. An approach for high vegetation cover has shown its side effects in terms of allergy to pollens of non-local flora. Similarly, mismanaged garbage dumping sites have been source of Bioaerosols responsible for several communicable and non-communicable diseases. Their effects on sensitive populations as newborns, elders and patients can be critical. An exposure to higher concentration or to an unfamiliar form of bioaerosols is hazardous for living beings. They may be fatal in some cases. Bioaerosols are most common source of airborne pathogen transmission. There is a need for developing advanced technologies to sample, identify and mitigate bioaerosols.

Abstract No. 389

IMPACT OF ADVANCEMENT ON ENVIRONMENT AND HUMAN HEALTH

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ABSTRACT

The advancement made by human beings for their comfort is one of the major cause of pollution. Our environment is one of the most polluted spheres on earth. Advancement in industry, agriculture, heavy urbanization, deforestation, enormous in population, and several other anthropogenic activities have gifted us with different kinds of pollutions, which directly or indirectly affect human health "Environment" here encompass all the things we eat drink and breathe from food industrial chemicals and the drugs we put into our bodies. According to recent estimates about 5 to 10% of disease adjusted life years (DALY) lost are due to environmental causes. By far the most important factor is fine particulate matter pollution in urban air. In epidemiology, environmental diseases are diseases that can directly attributed to environmental factors (as distinct from genetic factors or infection). This includes diseases caused by substance abuse, exposure to toxic chemicals (like As, Hg, Pb, F, Si etc. in air, water or soil and physical factors in the environment like UV radiation from the sun, as well as genetic predispositions. One of the earliest evidence of environmental risk factors for immune-mediate disease comes from trades in which exposure to silica dust has been associated with onset of rheumatoid arthritis, Inpus and scleroderma. Long-term exposure to polluted air can have permanent health effects such as: accelerated aging of the lungs, loss of lung capacity and decreased lung function, development of diseases such as asthma, bronchitis, emphysema and possibly cancer. Waterborne diseases include: amoebiasis, buruli ulcer, cholera, crypotosporidiosis, giardiasis, heapatitis, typhoid fever. Sanitation and hygiene diseases include: lymphatic, filariasis, dermatophytosis (ringworm), scabies, soil transmitted helminthiasis, trachoma etc. Children are more vulnerable than adults to environmental risks due to exposure to biologically contaminated water, poor sanitation, indoor smoke, rampant disease vector such as mosquitoes, inadequate food supply and unsafe use of chemicals and waste disposal, ran among the highest environmental burden of disease worldwide. Significant progress in reducing the environmental burden of disease on a global scale can only be achieved through focusing on the key risk factors, through a holistic approach. Understanding those environmental factors will help researchers devise more effective treatments for disease and guide prevention efforts. It has recently come up as broad field of Environmental Medicine.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 390

FIRST REPORT OF NATURAL SPAWNING OF STRIPPED LOACH, SCHISTURAOBLIQUOFASCIA, IN CAPTIVITY

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ABSTRACT

Schisturaobliquofascia commonly known as stripped loach belongs to the family Nemacheilidae comes under the category of vulnerable species. Development of breeding protocol in captive environment of endangered endemic fish species is present day need for conservation and restoration point of view. One of the major problems in loach breeding faced as females are unable to attain full sexual maturity in captive conditions. Very limited information is available on the reproductive biology, reproduction and breeding technology on loach species. The proposed study was aimed to provideconduciveenvironmentto endorse gonad developments in male and female fish up to full maturity stage.Adult specimens of 80-120mm were collected from rivers Gaula (29o17'25'' N - 79o37'43'' E), at an altitude 595 m above sea level Kumaon region of Uttarakhand in month of April -May 2016. Total 25 specimens were collected and maintained in captive conditions at ornamental fish breeding unit of DCFR Bhimtal. Brood stock were maintained in glass aquarium of 90x45x60cm with water holding capacity of 120-150 liters. Glass tank was equipped with under-gravel biological filtration system powered by a 25 watts power head pump. This maintain an efficient water filtration and continuous aeration in aquarium maintaining crystal clear water as well as optimum water quality in the aquarium. Water quality parameters during experimental period were observed as pH-7.2-7.8, Ammonia and nitrites-nil, Nitrates-20-30 ppm, Alkalinity - 40-70 ppm,• Hardness- 90-110, Dissolved oxygen - 7-9 ppm, Free carbon-di-oxide- 2.0-3.2 ppm ,Water temperature 18-240C. During experimental period sexual maturity in both sexes achieved in captivity. Sexual dimorphism characters in male and female fish were recorded. Males are comparatively smaller in size, body cylindrical in shape and pectoral fins are fan shaped broader and larger in males. Females are larger in size, bulgy abdomen due to mature ova, pectoral fins are narrow and pointed. From ventral side mature ovary and testis clearly visible in male and female. Natural spawning of stripped loach were first time recorded in month of September 2016 in captive conditions without any hormone treatment. Thus a major breakthrough has been achieved in loach breeding history. Loaches deposited theireggs under the gravel layer.Total 210 fertilized eggs were collected from gravel layer. Fertilization percentage was 42%.Eggs were kept for hatching in floating trays in re-circulatory hatching tank. Its embryonic development and rearing up to fry stage were successfully achieved. Development of breeding protocol and seed production of this species in controlled conditions will certainly boost the production and conservation of endemic ornamental fish of coldwater sector.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

1st International Conference on Environment and Society (ICES 2019)
Harcourt Butler Technical University (HBTU), Kanpur (U.P.)
December 22nd & 23rd, 2019

Abstract No. 391

MULTIPLE NATURAL SPAWNING OF CHAGUNIUSCHAGUNIO- A COLDWATER CYPRINIDS IN CAPTIVE CONDITIONS

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ABSTRACT

Chaguniuschagunioa coldwater cyprinids mainly distributed in the Ganga and Brahmaputra drainages of northern and north eastern India, Nepal and Bangladesh. Fish is generally found in large rivers characterized by rocky bottom, clear and fast water, and little or no vegetation.It attains a maximum length of about half a meter; reaches maturity at a size of 20-25 cm. 12 numbers of brood stock in ratio of 1:2 (F: M) with average weight of 40 - 60 g respectively were maintained in glass aquarium. Tank has dimension of 110x90x95 cm with water holding capacity of about 750 litres. Aquarium tank was equipped with under gravel biological filtration system to maintain ammonia free crystal clear water. Water temperature were maintained with immersion thermostat glass heaters within range of 18-220C. Brood stock were fed with wet feed containing 30-40% protein. Male and female both attained sexual maturity in confined aquarium condition. In males, nuptial tubercles are most heavily developed, densely covering on snout and check region; in anal fin last two fin rays elongate and reaching to the base of caudal fin. First natural spawning was observed in the month of June 2017 followed by successive natural spawning in aquarium several times without use of any hormone by same brood stock. Fish deposited eggs under deep gravel layer. Spawning behavior and breeding habits of these fish were also recorded.Successfully achieved incubation of eggs, rearing of fry in closed re-circulatory system with nominal water exchange.

Abstract No. 392

MICROBIAL PRODUCTION OF CELLULASE FROM SUGARCANE BAGGASE AND SAWDUST

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ABSTRACT

The cellulase is an industrially important enzyme. The high demands of cellulase lead to explore cheaper raw material for its low cost production. In present study the microbial production of cellulase was done by Asperigillus niger and the wastes used as a raw material was saw dust and sugarcane baggase. It was the target to reuse and reduce the waste from the environment and utilize it in production of some valuable product. The saw dust and sugarcane waste was used as a raw material in production media composition. The production was carried out for the period of 120 hrs and to study the kinetics the sampling was done after the interval of 24 hrs upto 120 hrs. The kinetic study was done for substrate utilization and product formation. The glucose content, protein content and enzymatic activity estimation was done with the help of spectrophotometer by DNS method, Lowry method and DNS method respectively. The highest yield of cellulase was observed at 48 hr in sugarcane baggase. The waste saw dust and sugarcane baggase both were utilised as substrate and were giving promising results in the production of cellulase. The optimized media composition using these wastes can be used at industrial scale, which reduces the production cost of cellulase. The utilization of waste can help in cleaning up the environment.

Abstract No. 393

MICROBIAL DECOLOURIZATION OF MALACHITE GREEN AND METHYL ORANGE USING FUNGUS

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ABSTRACT

Majority of industries are using dyes in their processing. The toxic nature of chemical dyes is causing serious damage to the aquatic ecosystem. They are also the reason for many harmful diseases in plants, animals and human beings. It' s a high need of bioremediation of such dyes, which seems a green solution to the problem of environment pollution. The microbes are the best source for the utilization of chemical components for their metabolism. Different fungi have the potentials to degrade complex and recalcitrant organic compounds into simpler fragments; sometimes achieving complete mineralization. In current study the decolorization of malachite green ad methyl orange is done by using Aspergillus niger. The fermentation media was prepared and then the dyes at different concentration (100ppm and 300ppm) were added to it. The inoculums of Asperigillus niger was added in all the sample. The incubation time for the process was 120 hr and the same was drawn at the regular interval of 24 hrs. The methyl orange was showing the maximum decolourization of 96% after 72 hrs incubation at 100ppm dye concentration. As the concentration of dye was increasing the percentage decolourization was decreasing. This shows the toxicity of dyes towards the Aspergillus niger at increasing concentration of dyes. The malachite green was also decolorized by Aspergillus niger. The Aspergillus niger was potential strain for the decolourization of methyl orange and malachite green dyes.

Abstract No. 394

ACINETOBACTER INFECTION-AN EMERGING THREAT TO HOSPITALIZED PATIENTS

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ABSTRACT

The genus Acinetobactercontains a compound and varied group of bacteria, many of which are adept of causing a range of opportunistic, often catheter-related, infections in humans. These organisms are repeatedly antibiotic resistant and are capable of causing significant morbidity and mortality in hospitalized patients.Over the last three decades, Acinetobacter has increasedsignificance as a leading nosocomial pathogen, partially due to its remarkable genetic aptitudes to attain resistance and partly due to high discriminatingburden, particularly in critical care units. This organism has turned into a multidrug resistant pathogen and now creating alarming conditions for healthcare providers worldwide. It has exceptional colonizing prospective, and contact transmission that will be big challenge as intermittent as well as endemic epidemics. Strong biofilm formation is a part of virulence pathogenesisapproaches of these organisms, and exclusion of the acknowledged source often involvesnumerousinvolvements. These bacteria are continuously finding new ways to sidestep the effects of the antibiotics used to treat the infections. Theyare responsible for antibiotic resistance when the germs no longer susceptible to the antibiotics designed to kill them. If they develop resistance to the group of antibiotics called carbapenems, they become carbapenem-resistant. When they are resistant to multiple antibiotics, they create multidrug-resistant. This review mainly focuses on relevant characteristics of Acenetobacter for its emerging threatas nosocomial infection

Abstract No. 395

COMPARISON OF YIELD BETWEEN CORYNEBACTERIUM DIPHTHERIAE AND ESCHERICHIA COLI FOR PRODUCTION OF CRM PROTEIN

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ABSTRACT

Cross Reacting Material (CRM197), a non-toxic variant of diphtheria toxin, is widely used as a carrier protein in polysaccharide conjugate vaccines. Classically, CRM197 protein is produced from Corynebacterium diphtheriae C7 culture,which often suffers from low yield. Recently E.coli based approaches has been tried to increase the yield of CRM197 protein and to improve the affordability of CRM197-based vaccines. Fermentation lots for both Corynebacterium diphtheriae C7 strain and recombinant E.coli BL21 strain was carried out using suitable culture media at 80L scale. Fed batch fermentation was carried out for both the strains for approximately 24 hours. CRM197 protein from Corynebacterium diphtheriae C7 culture was purified using different purification techniques including centrifugation, concentration and diafiltration, anion exchange chromatography and hydroxyapatite chromatography. Purification of CRM197 protein from E.coli culture involved centrifugation, homogenization (for breaking of inclusion bodies), refolding, anion and cation exchange chromatography. The purified protein was analyzed by SDS-PAGE method and quantified by BCA method. The average protein concentration for Corynebacterium diphtheriae C7 lots was approximately 80 mg/mL where as from recombinant E.coli BL21 lots was approximately 300 mg/mL which is 3.75 times higher than protein purified from Corynebacterium diphtheriae C7 lots. It is evident from the data that E.coli based production of CRM197protein produces higher yield as compared to Corynebacterium diphtheriae C7 based production.

Abstract No. 396

QUANTUM CHEMICAL AND DOCKING STUDIES ON 3-TRIFLUOROMETHYL-1H-PYRROLO[1,2-C]OXAZOL-1-ONE, USING DENSITY FUNCTIONAL THEORY

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ABSTRACT

In this presented work a detailed quantum chemical studies on 3-trifluoromethyl-1H-pyrrolo[1,2-c]oxazol-1-one has been carried out. The density functional method at the B3LYP/6-311++G (d,p) level is used to obtain the equilibrium geometry of the title compound. We have performed the vibrational analysis of the title compound at their equilibrium geometries and established the complete assignment of significant vibrational modes. The electronic properties of the molecule are discussed with the help of the descriptors such as HOMO-LUMO and MESP, and several electronic and thermodynamic parameters are calculated. In addition, the molecular docking is also carried out to get a pharmacological importance of the compound.

Abstract No. 397

SUSTAINABLE FUTURE : THE ROLE OF ECOLITERACY

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ABSTRACT

The inclusion of environmental education in primary, secondary and higher academic curriculum was aimed at creation of consciousness for environment and making the students eco-literate to play a critical and leading role in what Berry (2000) has called the 'Great Work' - the transformation of society towards a sustainable future. The further deepening of environmental problems indicate that educational measures undertaken to deal with it have not been ef fective and call for rethinking and restructuring of the environmental education delivery system.It seems that in schools, students are paradoxically experiencing an unconscious dissonance between what they hear about these issues and their experience of education. Of course it is essential that children are language literate and numerate, but even as resources are poured into these forms of literacy, ecological literacy, or ecoliteracy is neglected. When it comes to an understanding of the earth's systems and our impacts on them, the human species is profoundly illiterate. In a world of rapidly depleting resources and major global change, including global warming, it is almost an educational crime that so little attention is paid to ecoliteracy. Education for a sustainable future requires ubiquitous presence of environmental literacy and ecological understanding in the curriculum. This paper argues for ecoliteracy to be introduced into academic curricula as the most important literacy of all in order to save the future generations from scarcity of resources, environmental degradation, rampant pollution and above all ensuing climate change. 'Collaborative Engagement' strategies seem to work best, in which professionals with different expertise work together on a specific aim over an extended period of time. It addresses the difficulty of developing an appropriate eco-literacy curriculum, and suggests that key skills and attitudes are needed, including respect for evidence; understanding risk and predictability in relation to ethics; and communication skills and action competence. The key to long-term engagement and eco-literacy is to collaborate over extended periods with a focus on the right issues.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 398

BIODIVERSITY AND FARMERS RIGHTS PROTECTION SYSTEM IN INDIA

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ABSTRACT

The Plant Variety Protection and Farmers Rights Act (PPVFRA), 2001, a suiGeneris system, is an attempt by the Indian Government to recognize and protect the rights of both commercial plant breeders and farmers in respect of their contribution made in conserving, improving and making available plant genetic resources for development of new plant varieties and to encourage the development of new plants varieties. Protection of the plant varieties under the PPVFR Act, 2001. The Agreement on TRIPs requires WTO Members to introduce an "effective system" for the protection of plant varieties. Article 27 3 (b) of the TRIPS agreement reads:

Member countries may exclude "plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof.", India decided to exclude patents for plants and plant varieties but exercised the sui generis option. Four types of plant varieties can be registered under PPVFR Act, 2001. -1) New varieties: A variety which is not in public domain in India earlier than one year before the date of filing; or outside India, in the case of trees or vines earlier than six years, or in any other case, earlier than four years.2) Extant variety: A variety which is notified under Seed Act, 1966 or a variety about which there is common knowledge or a farmers' variety or any other variety which is in public domain is considered as an Extant variety. 3)Farmers' variety: A variety which has been traditionally cultivated and evolved by the farmers in their fields or a variety which is a wild relative or land race of a variety about which farmers possess common knowledge.4) Essentially derived variety (EDV): An "essentially derived variety" shall be said to be essentially derived from such initial variety when it is predominantly derived from such initial variety, or from a variety that itself is predominantly derived from such initial variety, while retaining the expression of the essential characteristics that result from the genotype or combination of genotype of such initial variety and it is clearly distinguishable from such initial variety. An EDV conforms to such initial variety that results from the genotype or combination of genotype of such initial variety. Duration of protection for a registered plant variety?• Trees and vines - 18 years.• Other crops - 15 years.• Extant varieties - 15 years from the date of notification of that variety by the Central Government under Seed Act, 1966.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

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Abstract No. 399

STUDIES OF ENDANGERED ETHNOMEDICINAL PLANTS USED IN TRADITIONAL HERBAL MEDICINES IN THE SOUTH-EAST RAJASTHAN (HADOTI REGION)

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ABSTRACT

The present study was carried out to gather information about Ethno-botanical knowledge of indigenous people and ethnic races those are residing in forests of south-east Rajasthan since ages. A large number of variety of wild and cultivated plants are being used by them to treat various ailments due to limited access to modern health care services. Thus a considerable amount of information on medicinal plants is available with these communities that passed on from generation to generation through the word of mouth. Present study was carried out in an unexplored remote tribal area of South east region of Rajasthan to investigate and document the existing ethno-medicinal knowledge on local flora which is rich and diversified in important medicinal plants.Exposure to modern pharmaceuticals have significantly affected the traditional practices in the area. The ethno-medicinal knowledge in the study area is gradually heading towards extinction because the old age community members being the main bearer of this knowledge are passing away and younger generation is not interested to take it. Herbal practitioners in the area have sufficient traditional knowledge, but mostly, they are reluctant to disclose it to other community members. Hence, the present study was planned with the objectives to record the traditional knowledge of study area mainly pertaining to endangered Ethno-medicinal plants of the proposed area of study and to preserve it in the form of publish literature, and share it with other communities across the globe.

The present study was conducted through direct interviews with around 35 Herbal practitioners and 240 informants from the study area. Data was collected through semi-structured questionnaires from the community members and local herbal. We presented thirty most used species by ancestral healers of Hadoti to cure dif ferent ailments and their medicinal uses. This study also provide details regarding Habitat, Mode of transfer, Abundance Status, Effect and popularity and Cultivation practices (status of plant)of selected 30 plants.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 400

ASSESSMENT OF SPIDER EGG SACS WITH SPECIAL REFERENCE TO ITS MORPHOLOGICAL STRUCTURE OND COMPOSITION AS VISUALIZED UNDER SEM

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ABSTRACT

The study of diversity and distribution of spiders was carried out at University campus of Sagar and Nauradehi Sanctuary between October, 2018 to November, 2019. Spiders are a highly abundant, megadiverse group that represents 2.2 % of Earth's known biodiversity. Spider silk is a proteinaceous biopolymer signifying a unique combination of light weight, tensile strength and elasticity making it very attractive for technical applications. The aim of the study is to elucidate the structure and role of different silk fibres involved in the formation of egg sac. In the present study, only egg sacs of Leucage sp., Heteropoda sp., Cyclosa sp., Eriovixia sp. and Nigma sp. were investigated. The egg sacs were photographed using a Canon 250D 100 mm in order to show the variation in coloration of the egg sacs. The morphological study was performed by means of a Quasmo SZB-47A Stereo Zoom Microscope and structure and arrangement of the egg sacs were analyzed using SEM (FEI Nova NanoSEM 450), completely dried egg sac were mounted on stubs and coated with gold. All egg sacs were fairly uniform and consisted of a basic layer, a double insulation layer and an outer layer. The insulation layer consisted of two layers of cylindrical (or tubuliform) fibres with different diameters and probably with different mechanical properties. There are evidences for antimicrobial activity associated with dragline silks. As egg sacs give protection from predators and parasites to its own eggs, therefore, these properties need to be further explored, especially for egg sacs. Egg sac threads can be very useful for biomedical applications, like sutures, cell support and scaffolds. Knowing the complete structure of the egg sac will allow to locate and extract the needed fibers for further research and to observe how the egg sac composition alters in relation to the habitat.

Abstract No. 401

ENVIRONMENTAL LAWS IN INDIA – AN APPRAISAL

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ABSTRACT

Environmental awareness can be said to have existed even in the prevedicera, Indus valley Civilization which flourished in northern India about 5,000 years ago. This is evident from the archaeological evidence gathered from Harappa and Mohenjo-Daro which were the prominent cities of the civilization.

India employs a range of regulatory instruments to preserve and protect its natural resources. It was the first country to insert an amendment into its Constitution allowing the State to protect and improve the environment for safeguarding public health, forests and wild life.

A major concern for developing countries including India is how to safeguard the environment without adversely affecting the country's economic growth and employment levels. India's extensive environmental laws seem to have very little ef fect in reducing the harmful ef fects of pollution. The existing environmental legislation in India is out of date or covers only a small portion of the contemporary problems in an uncoordinated fashion. National and regional officials are not familiar with comprehensive definitions of environment and other related aspects. The research paper is a genuine attempt to explore and examine the efficacy of environmental laws implemented in India.

Abstract No. 402

DIVERSITY OF WILD ORNAMENTAL PLANTS OF NAURADEHI WILDLIFE SANCTUARY, MADHYA PRADESH

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ABSTRACT

The floristic survey was carried out in Nauradehi Wildlife Sanctuary. This is one of the largest sanctuary of the Madhya Pradesh, covering an area of 1197.042 sq. km.,lies between 23 5 to 23 43 North latitude and 79 5 to 79 25 East longitude.Ornamental plants have been a part of our gardens, house and office-place since many decades. So explosive has been the demand of aesthetically prized plants that we are running out of options. Behold the native ornamentals which can provide new and greater alternative to the already existing ornamentals. After exploration of the study area for about two years, we could identify 31 species belong to 22 genera and 8 families. Maximum number of 21 species recorded belonging to family Fabaceae, followed by Acanthaceae (3 species) and Rubiaceae(2 species).These potential ornamentals are selected based on different characteristics that a typical landscape designer is looking for. These plants are diversified in habit,soils preferences, foliage silhouette types, growth rate, contrasting flower so as to cater different needs. Aesthetic consideration like fragrance, colour and other visual attributes are given priority. These plants also be utilized to curd dust and noise, reduce wind velocity, shade patios and cover walls in the form of holdfast vines and as avenue trees. By utilising natives as ornamentals, there is also an added advantage of conservation of our native resources and preservation of germplasm. And because native plants are adapted to local climatic conditions, there is no need extra for expenditure to be spend on acclimatization. Natives also helps in attracting local wildlife like butterflies, bees, moths etc.

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Abstract No. 403

TRAIT LOCI (QTL) FOR YIELD AND YIELD CONTRIBUTING TRAITS UNDER MOISTURE DEFICIT CONDITIONS IN WHEAT (*TRITICUM AESTIVUM* L.)

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ABSTRACT

The morpho-physiological traits such as yield and yield attributing traits are effective selection criteria for screening of wheat genotypes for abiotic stress such as drought and high temperature. Identification of loci governing yield contributing traits in wheat lead to production of material tolerance to such stress conditions. The recombinant inbred lines (RILs) of wheat were developed using the parents HW2004 and HD2877 to identify loci for yield. Due to recombination and segregation distortion RILs showed varying range for various traits under water deficit conditions. The mapping population of 262 recombinant inbred lines (RILs) from a moisture stress tolerance and susceptible wheat cultivar, 'HW2004' × 'HD2877' was grown for two crop years at two locations under rain-fed and normal irrigated conditions to identify quantitative trait loci (QTL) associated with yield. The genetic linkage map was constructed comprised of 132 SSR markers and covered the entire 21 chromosome. The map covered 3936.8 cM with 1355.8 cM (34.4%), 1335.5 cM (33.9%), and 1245.5 cM (31.6%) for A, B, and D genome, respectively. Several QTLs for yield were detected on various chromosomes under moisture stress conditions. The identification of loci associated with yield will be useful for marker-based approaches to improve the character and its stability for wheat breeders in water scarce environments.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 404

ISOLATION AND IDENTIFICATION OF FUNGI FROM GILL AND SKIN OF *CLARIAS BATRACHUS*

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ABSTRACT

Microbiological analysis have been carried out from infected fish samples obtained from fish market for isolation and identification of fungi in infected regions. The infected fish sample with open wound and ulcerative growth found on caudal region and gills of Clariasbatrachus.Extract was preparedfrom this infected part of fish. Serial dilutions of each sample upto 1: 1000 have been prepared.and was streaked overPotato Dextrose Agar (PDA) and the petriplates were incubated at 28°C. After purification of culture, microscopic study was carried out. The fungi isolated from the infected fish samples includes – Aspergillus flavus, A. terreus A. fumigatus, Alternariaalternata, Curvularialunata, Penicilliumchrysogenum, Cladosporiumsphaerospermum, RhizopusstoloniferandSepedonium sp. . In the present study it has been found that almost 50% of the fish studied were infected with genus Aspergilllus and thus, it can be concluded that Aspergillussp. is most dominant fungus among all the fungal genera identified.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 405

A BRIEF REVIEW ON MICROBIAL PECTINASE PRODUCTION

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ABSTRACT

Pectinase is the enzymes which attack pectin and simplify it by trans-elimination and hydrolysis as well as with de-esterification reactions, which removes the ester bond between methyl groups and carboxyl of pectin releasing water. 10% of global enzyme industries produce pectinase with increased market exponentially day by day. In the biotechnological process, fruit enzyme application has expanded in recent years. Several kinds of research have been evaluated which supports the significance of work and demand in various sectors. Also, it is needed to incorporate the waste for its best application possible in the Food sector as well which don't work on 3Rs i.e. Recycle, reuse and reduce. The work includes several steps as 1) Isolation of pectinase producing micro-organisms from fruit wastes. 2) Purification and characterization of the microbial pectinase and determination of enzyme activity. 3) Optimization of the solid-state fermentation process of Pectinase. 4) Application of isolated acid-tolerant pectinase for clarification of fruit juices. The major impact is the use of enzymes in increasing yields of extractive processes, upgrading quality, and improvement of flavour, product stabilization, and by-product utilization. The Pectinase has vast research and industrial application including clarification of juices.

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Abstract No. 406

ECONOMIC ANALYSIS OF CLIMATE CHANGE IMPACT AND ADAPTATION ON WHEAT FARMING IN INDIA WITH SPECIAL REFERENCE TO AGRA DISTRICT

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ABSTRACT

Climate Change is the vital issue of current century and the problem of climate change impacting every field of life. Agriculture is directly associated with weather and changing weather patterns are directly impacting the agriculture all around the globe. Wheat is the major crop of the globe and India is second largest producer of wheat in Asia. The current study tries to check the impact of climate change on the productivity of wheat in Agra district. The study also examines the different adaptation strategies adopted by farmers to minimize the impact of climate change in Agra district. The impact of climate change on yield of wheat is analyzed by regression analysis and primary information about the farmers' adaptation strategies gathered by a group interview of 72 farmers. The results of the study implicate that the climatic variables like rainfall and temperature impacting the wheat productivity in Agra district. The level of adaptation is low among the farmers and support of government is not adequate. The present adaptation measures are also not quite effective.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 407

SOIL EROSION AND ITS PREVENTION IN HILLY AREAS

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ABSTRACT

The uprooting of upper layer of soil is named as soil erosion. It is a procedure which is finished by various operators. Soil erosion might be a moderate procedure that proceeds generally unnoticed, or it might happen at a disturbing rate causing a genuine loss of topsoil. The loss of soil from farmland might be reflected in diminished yield creation potential, lower surface water quality and harmed seepage systems. Soil erosion happens when common powers, for example, wind and water, follow up on the dirt. Man can likewise cause soil erosion by such practices as working a rancher's field or the clearing of vegetation. Clearing vegetation evacuates the assurance of plants and roots expected to secure soil. Essentially, the more uncovered or intensely worked soil is, the almost certain it is to disintegrate during precipitation or windstorms. In this paper effects and preventive measures of soil erosion are discussed.

Abstract No. 408

ALTERNATIVES OF QUALITY NUTRITION IN RURAL INDIA

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ABSTRACT

Growing population of India is a big challenge for the policy makers to meet out the quality nutrition. As we know 70% of population is still living in rural areas and we don't have barriers of sense to provide the quality nutrition. Majority of rural people are heavily unaware of the resources available in their surroundings to get the quality food through alternative sources. This paper will reveal the facts and educate the people to get the resources for the quality nutrition which are available in abundance in their surroundings. It is an effort to find out the easy solution to overcome the set challenges in rural areas. There are two types of predicament which are being faced by the rural masses: 1.Undernutrition and 2.Malnutrition. We are discussing here about the malnutrition and its impact on the health of human beings. Malnutrition is an ecological problem which accompanies poverty, disturbed family structure, ignorant food habits etc. In India 44%of children under the age of 5 are underweight, 72% of infants and 52% of married women have anaemia. Malnutrition during pregnancy causes child to have increased risk of future disease, physical retardation and reduced cognitive abilities. Protein-calorie malnutrition can cause cognitive impairments. For humans "critical periods varies from the third of gestation to the first 2 years of life." Iron deficiency anaemia in children under two years of age is likely to affect brain function acutely and chronically. Folate deficiency causes neural tube defects. Iodine deficiency is the most common preventable cause of mental impairment worldwide. Even moderate deficiency especially in pregnant women and infants cause lower intelligence by 10 to 15 I.Q. points, vanishing incalculable potential off a nation's development.

Abstract No. 409

IMPACT OF WASTE WATER IRRIGATION ON QUALITY PROVENANCE OF SOIL CONTAMINATION: A CASE STUDY OF UTTAR PRADESH, INDIA

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ABSTRACT

Farmers of urban and peri-urban areas are using wastewater for irrigation purpose rapidly due to scarcity of freshwater. Long term wastewater use for irrigation may lead to the accumulation of heavy metals in agriculture soil as well as in plants. Crops and vegetables grown in soils contaminated with heavy metals have greater accumulation of heavy metals than those grown in uncontaminated soil. Concentration of Cr and Pb during winter and Zn and Ni during summer showed significant negative impact on soil as well as plant contamination.

The present study deals with the quantification of heavy metal concentrations in soil in urban and peri-urban area of Uttar Pradesh. This study is based on secondary data and simple statistical analysis. Result of study analysis computed to assess the relationship between heavy metal concentrations in the soil showed that Zn in soil had a positive significant relationship with vegetable contamination during winter. This study concludes that the use of wastewater for irrigation has increased the contamination of Cd, Pb and Ni especially in untreated wastewater causing potential health risk in long term from this practice.

Abstract No. 410

TREES – NATURE'S GIFT, SAVE IT

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ABSTRACT

Trees have played an important role in the evolution, sustenance and development of life on earth. Since the beginning of this world, they have furnished us with life's essential like food, oxygen, shelter, medicine, furniture and so on.

According to one satellite survey, at present there are about thirty thousand billion trees around the world. About 24% of them are reported to be in the dense forests in the warm zone, 22% are in the cold zone and the rest of the trees are scattered across the globe. However, the number of trees has been drastically reducing every year. In spite of the warnings of climate experts and scientists about global warming and the possibility of climate change, it appears that all over the world, including India, forests are being converted into cities due to abnormal industrialization, modernization and creation of highways and dams.

Trees contribute in many other ways to our society and human life. For example trees can also be compared with air conditioner which provides us cold air during summer time. In forests of warm zone, laborers relax under a tree after hardwork for some cold air. As per one survey study, one healthy tree provides cool air equivalent to the cool air of ten air conditioners working for 20 hours. Trees surrounding home also provide cool air reduce the need of air conditioner by 30%. A forest spread in one acre area, absorbs 6 tons of C02 and creates four tons of Oxygen.

Some trees like Peepal, Banyan and Neem have the capability of absorbing pollution from the air and make the air more clean and fresh. Peepal has unlimited capacity of absorbing smoke from the air. It can absorb upto 4.15% of smoke from the air and that's why Peepal is worshipped in India as God. Another very beneficial tree is Neem, which provides pure air and also destroys harmful insects from the surrounding. Therefore, we should support the preservation & plantation of trees.

Abstract No. 411

IN VITRO CULTURE OF A MEDICINAL HERB: AN APPROACH FOR BIODIVERSITY CONSERVATION AND SECONDARY METABOLITE PRODUCTION

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ABSTRACT

Higher plants are major source of natural products which are being used as pharmaceuticals, agrochemicals and food additives. Among these pharmaceuticals products are given more importance because medicinal plants are the most exclusive source of life saving drugs for the majority of world's population. Over exploitation and habitat destruction caused by human population have created serious threat to the plant diversity. Thus, conservation and sustainable use of plant diversity is essential to protect earth and meet the future demand of world population. *In vitro* culture and plant regeneration ensure the production and rapid multiplication of disease-free plant. The biomass regenerated by in vitro culture of plant cell, tissue and organ can accumulate the same chemical compounds as the parent plant in nature and is being used for production of bioactive metabolites. Among various plants known for their medicinal values *Ecliptaalba* () is one of the most important plant. This plant is known for its medicinal value since time immemorial. Thus, in this study an efficient low cost shoot regeneration method from nodal explants has been standardized. The regenerated shoots were harvested when the multiplication stopped (after 5-6 weeks of subculture) and dried at 25 - 30ºC for phytochemical extraction. The extract obtained was dried and weighed and stored at room temperature for bioactive metabolite analysis. Of the 4.3022 gm dry weight of shoots grown in modified medium 0.5931 gm total metabolite was extracted. The dried extract showed presence of phenolics, flavonoids and antioxidant activity. Thus, this study showed that the *in vitro* culture of *E. alba* is the source for various bioactive compounds and could be exploited for commercialization of various bioactive compounds.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 412

ANTIFUNGAL ACTIVITY OF *CYMBOPOGON FLEXUOSUS* VOLATILE OIL AGAINST SOME RESPIRATORY PATHOGENIC FUNGI

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ABSTRACT

The use of essential oils against fungal infection has gained highly importance because of acquired resistance against large number of drugs. The aim of study was testing the biological activity of essential oil against some *Aspergillus* spp., estimating chemical composition, active ingredient and mechanism of action of tested oils. *Cymbopogon flexuosus* essential oil volatiles were preliminary evaluated via vapor phase using volatilization method. Growth inhibition, minimum inhibitory concentration (MIC) of these pathogenic fungi were used to detect their susceptibility of the essential oils. Morphological changes of treated fungi as well as its spore germination were observed by light microscope. Also chemical analysis of essential oil were achieved by GC, GC-MS. *Cymbopogon flexuosus* was found to be highly fungicidal as it showed the lowest MIC and MLC values and higher growth inhibition in a range of concentrations (10 to 15 µl/ml) it was effective in inhibiting fungal viability and spore germination. The main morphological changes caused by *C. flexuosus* oil in A. niger were observed under light microscope, these included a reduction in condition, loss of pigmentation and disrupted conidiospores structure. The results show that *C. flexuosus* oil produces a fungitoxic effect, which supports its possible use in medicine to cure mycotic infection.

Abstract No. 413

ASSESSMENT OF AQUATIC TOXICANTS THROUGH MULTIPLE BIOMARKER APPROACH

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ABSTRACT

At present pace of development and population growth huge amount of wastes are and their by-products are generated. They ultimately find their way to nearby aquatic regimes. At times, their extent surpasses the carrying capacity of the habitats resulting in their gross ecological imbalance. Several of these wastes/ pollutants are genotoxic. Fishes being the sentinel organisms in aquatic regimes are worst hit. Thus, it becomes imperative that besides conventional approach of physico-chemical and biological monitoring of polluted aquatic habitats some new, rapid, and sensitive multiple biomarkerscan be effectively employed in this new era of environmental monitoring. In addition to haematological and biochemical parameters of clinical significance, some of the routinely employed and validated methods can be applied for the assessment of genotoxicity in fishes. They include, CAT or Chromosomal aberration test as cytotoxic end markers, MNT or Micronucleus test as an index for chromosomal damage, Single cell gel electrophoresis (SCGE) or Comet assay for detecting alteration in DNA organization, activities of oxidative stress marker enzymes, SOD, CAT, and GR etc. for assessment of extent of Reactive Oxygen species (ROS) and expression and quantification of certain marker genes, viz, p53 for DNA damage and repair, *bax, bcl2, apaf1, casp3* for apoptosis or programmed cell death, and *nox, gsr, sod*, and *cat* for assessment of oxidative stress in fishes surviving in compromised habitats..

Abstract No. 414

IMPACTS OF OVER CULTIVATION OF MAKHANA, *EURYALE FEROX* SALISB.

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ABSTRACT

Makhana/Pool Makhana, Fox Nut/Gorgon nut are common name of *Euryale ferox* Salisb. belonging to the family Nymphaeaceae, is commercially very important plant as it possesses spiritual significance, potent medicinal/economic properties and enhances socio-economical condition of the locality as the same is known as one of the best cash crop grown in aquatic ecosystem. In India, the plant is grown annually maximum at large scale in 9 districts of north Bihar namely Madhubani, Darbhanga, Katihar, Sitamarhi, Purnea, Kishanganj, Araria, Saharsa and Supaul. However, during 1998 on experimental basis with assistance of State Government of West Bengal, its cultivation started in the neighbouring district Maldah specifically in Harishchandrapur - II Block of Tal area by bringing seeds from Darbangha, Bihar. By 2001, it spread from Harishchandrapur - II Block to Harishchandrapur - I Block followed by Chanchal - II Block in Tal area to Gajol Block in Barind area and to Diara area by 2012. The exponential spread of plant and adoption of cultivation practice in Maldah district has altered the actual agricultural practice of the district and creating ecological imbalances in water bodies resulted to cause loss of aquatic biodiversity and may lead to cause health hazard of the associated personnel though the popped makhana is on high pricing and demand. Thus, this paper deals with different kinds of impacts and mitigation measures for restoration of water bodies, aquatic biodiversity and welfare of associated manpower for their better livelihood.

Keywords: Makhana, impacts, loss of biodiversity, health hazards, mitigation measures.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 415

INORGANIC CONTAMINANTS IN GROUND WATER: AN ALARMING BELL

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ABSTRACT

An alarming increase in the number of cancer cases has been noticed in past ten years in several villages around the Chhapraula Industrial Area in Greater Noida. According to previous reports, after the setup of this Industrial Area, the quality of groundwater has been deteriorating. More than 100 factories in this area are engaged in manufacturing adhesives, pesticides, TV tubes, cosmetic products etc. There is no proper effluent and waste management system in place. The indiscriminate dumping of the effluents along with crushing and desheathing of large quantities of rice in mills in this area contributes enormously to contamination of groundwater. There may be the presence of possible carcinogens like arsenic, chromium, lead, mercury, nickel, Cadmium etc. in the industrial wastes that might be leading to different types of cancer viz. stomach, liver, skin, blood and gut related cancer in this area. Cancer is known to be one of the leading causes of death. The molecular cause of cancer is deregulation of cell cycle, cell death and DNA repair pathways. One of the possible mechanisms for the deregulation of these pathways by various contaminants could be promoter hypermethylation which is a covalent modification, in which DNA is methylatedby DNA methyltransferases (DNMTs) at the 5-position (C5) of the cytosine ring resulting in the formation of methyl-cytosine (5MeC). Several epidemiological studies have reported that exposure to contaminants lead to gene specific promoter hypermethylation leading to silencing of genes. In light of this information, it can be hypothesized that there may be a possible correlation between the presence of groundwater contaminants and promoter hypermethylation promoting increased incidence of cancer cases in population living in this area. Therefore, the present study is based on assessing the quality of groundwater by screening the contaminants in it an also to find out the possible mechanism by which these contaminants leads tocancer development and progression, promoter hypermethylation of the tumor suppressor genes in blood/serum of the patient samples. This will also provide the noninvasive biomarkers for cancer diagnosis. Since promoter hypermethylation is reversible, this study will also provide very important therapeutic target in case there emerges a positive correlation between inorganic contaminants, promoter hypermethylation and cancer.

Theme: Socio-economic Challenges of Agriculture, Biodiversity & Environment

Abstract No. 416

BONSAI PLANTS FOR CONTROLLING AIR POLLUTION

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ABSTRACT

Now days the atmospheric pollution level is gradually increasing and excess of harmful gases such as CO_2, CO, SO_2 and many other have reached up to dangerous levels. In this situation plants can play an important significant role to control the atmospheric pollution. People living in cities do not have enough space for gardening. Bonsai is one of the good plant growing technique to fulfil the gardening hobby with limited space requirement, and also useful for purifying the atmosphere. The growth of Bonsai plants can be controlled by root, shoot pruning and with restricted nourishment. So that dwarf remains the natural of the plant. All the conditions for these dwarf plants to grow and thrive are naturally occurring. There are several styles for making the bonsai plants viz. formal, informal, slanting, broom, cascade, forest styles and so on. Some of the important trees and shrubs used for making bonsai include *Ficus infectoria, Ficus benghalensis, Ficus benjamina, Ficustsiela, Psidium guava* (Chinese guava), *Punicagranatum, Carissa carandus, Jacaranda cuspidifolia, Jacaranda mimoesifolia*. These bonsai plants can be displayed at various places like bungalow, apartments, schools, offices and other commercial places.

Abstract No. 417

BIODIVERSITY OF ANDAMAN AND NICOBAR ISLANDS: OPPORTUNITIES AND CHALLENGES

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ABSTRACT

"Kalapani," Andaman and Nicobar Islands, was a colonial prison used by Birtishers, especially for freedom fighter from every corner of the Indian subcontinent. Isolation, its location and Cellular jail are the source of diversification at different level of biodiversity, cultural, social, linguistic pluralism. Bay islands are unique, having six endemic tribes in a very small geographical area as well as non aboriginal population from every corner of mainland India despite of differences i.e. language, religion, customs, costumes, eatables, festivals, rituals, ideology etc people are living in harmony. Biodiversity at all levels i.e.genetic, specific and ecosystem is very high and shows higher percentile of endemism in flora as well as fauna.Archipelago is not exceptional in terms of pollution, population explosion, exploitation of resources, urbanization and many more anthropogenic problems, like other parts of the globe. Islands are also facing environmental, social, cultural, linguistic depletion at different pace. Tourism industry is the only industry flourishing in Andaman and limited resources of islands are badly affected due to tourist pressure. Deforestation is the new story in Andaman to meet out the need! Illegal migration, poaching, hunting, unethical approach, non implementation of policies makes the scenario terrible. As the resources of islands are very limited in comparison to any part of world therefore wise utilization of recourses is the only solution to achieve the sustainability. We have to move on reduce, reuse repair, recycle mode of life.



The Indian sarus crane, *Grus antigone antigone* (State Bird of Uttar Pradesh): An eternal symbol of unconditional love, devotion and good fortune with high degree of marital fidelity.



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