ICCCEFS-2021

2nd International Conference on Climate Change and Its Effect on Environment, Food & Society

15-16 June 2021

SOUVENIR / E-ABSTRACT BOOK

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Sponsored By

University Grants Commission (UGC), New Delhi

Jointly Organized by

Savitribai Phule Pune University, Pune

&

Department of B.Voc & Biological Sciences

Mula Education Society's

ARTS, COMMERCE AND SCIENCE COLLEGE, SONAI

Tal. Newasa, Dist. Ahmednagar, Maharashtra, India

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Maharashtra, India

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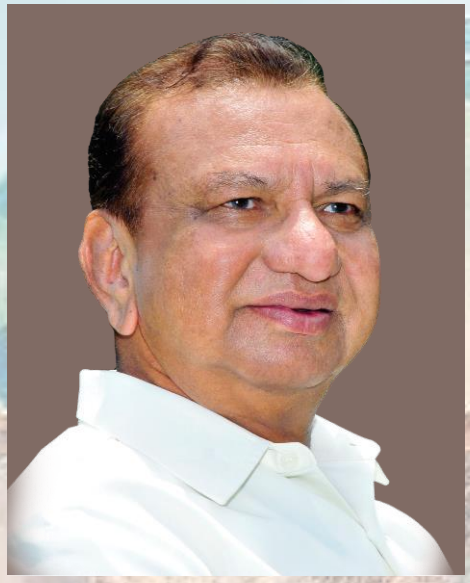
Our Inspiration



Hon. Yashwantrao Gadakh Patil

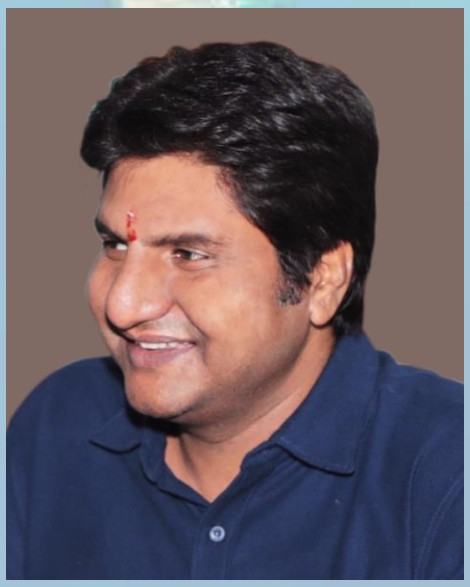
Former M.P. & Founder, Mula Education Society, Sonai

Visionary Leader

Hon. Shankarrao Gadakh Patil

Minister, Soil and water Conservation, (M.S.)
Trustee, Mula Education Society, Sonai

Our patron



Hon. Prashant Gadakh Patil

President, Mula Education Society, Sonai

Ex Senate Member, S.P.P.U. Pune

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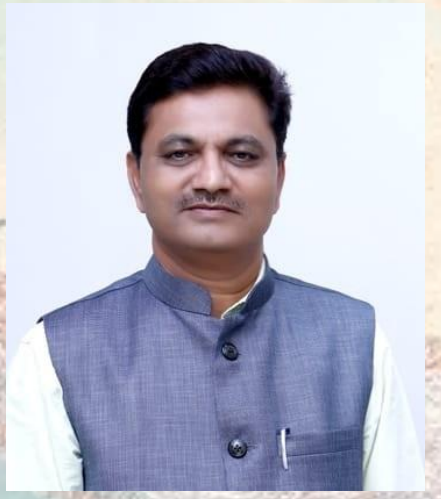

Principal's Message

Honorable Yashwantraoji Gadakh Patil galvanized the academic ambience of this rural side of Newasa Taluka by establishing the Mula Education Society, Sonai. With its diverse branches, the society at present is educating more than 20000 rural students to shape their future. The college is an outcome of his social commitment. Today, the rural students are reaping the opportunities of high tech education in this rural side of Ahmednagar district through conventional as well as need based vocational skill courses.

Our young enthusiastic President, Honorable Prashant Patil Gadakh made crowning glory through by a number of ambitious projects, such as second International Conference on 'Climate Change and Its Effect on Environment, Food and Society (ICCCEFS- 2021) held during 15-16 June,2021, With his leadership, the college is empowering rural talents through distinctive drives in association with Yashwant Samajik Pratishthan, Sonai. The conference provides an overview of the current status and enlightens the scholars on Climate Change and Its Effect on Environment, Food and Society. Environment factors are so closely related with one another, the neglect of one, worsens the other. At this backdrop, this international conference would serve as an academic platform to share and to instill the theme of the conference. The invited expertise shall avail the solutions on these burning issues. The conference is a confluence of academics and academicians to raise the knowledge on the subject.

I wish the conference grand success.

Dr. Laware S. L.
Principal

sllfergusson@gmail.com

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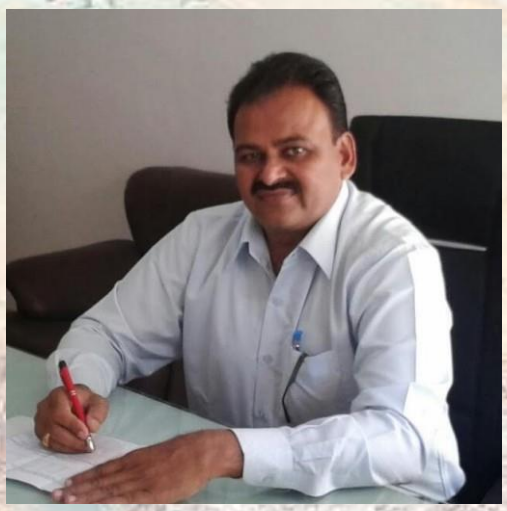

Preface

Due to human activities such as industrialization, urbanization, deforestation and use of different appliance for getting comfort and more production have affected ecological balance. Climate change on our earth has created several problems like pollution, global warming, greenhouse effect, acid rain and ozone depletion. All these things affect on Environment, Bio diversity, Agriculture, Food, Society of world. Therefore, it is essential to make awareness of students, teachers, industrialist, politicians and community about this serious environmental problem.

With the aim of having wide discussion on Bio diversity, Environment, Food and Society, a two days international conference was organized during 15th and 16th June 2021, by Department of B. Voc. and Biological Sciences of Arts, Commerce and Science College, Sonai, Maharashtra (India). The objective of two day's conference was to provide common platform to academician, science, researchers, planers and other stakeholders from different parts of world, to gain knowledge of climate change and its effect on nature, food and society. In response our call 300 abstracts were received for presentation and 119 full length research papers for publication from various countries, such as Sri-Lanka, Nepal and India. A total 380 scholars participated in the conference. 5 invited talks were delivered by Eminent Personalities.

We hereby acknowledge the services of the members of Advisory Committee and Organizing Committee. The conference was financed by UGC, New Delhi and Collaboration of Savitribai Phule Pune University, Pune and I also acknowledge of Hon. Secretory of UGC and Hon. Vice Chancellor of Savitribai Phule Pune University, Pune, Pune. I also thankful to the management of Mula Education Society Sonai and Principal, Arts, Commerce and Science College, Sonai for their kind support.

Dr. Ashok Tuwar
Convener
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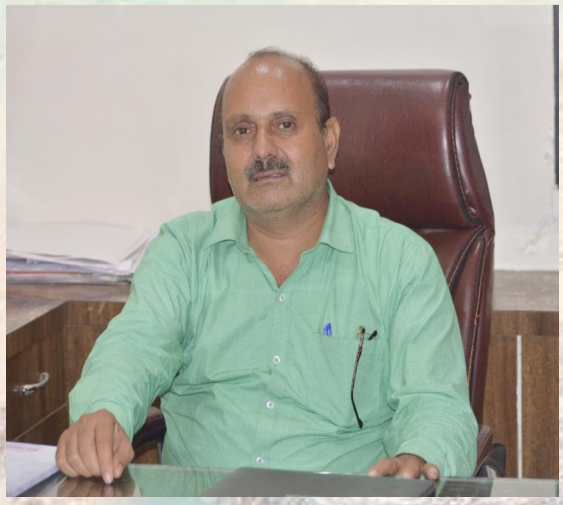

Preface

It is our pleasure to welcome all participants to these 2nd International Conference on "**Climate Change and its effect on Environment, food and society"** (ICCCEFS-2021) via Online mode jointly organized by Savitribai Phule University Pune and Mula Education Society's Arts, Commerce and Science College, Sonai, India. The significant feature of it is to bring academic scientists, young researchers, and industry researchers together to exchange and share their experiences and research results about most aspects of science and social research, tourism, Commerce and Management, Arts and discuss the practical challenges encountered and the solutions adopted. In this conference scientific program covered a wide spectrum of topics along with guest lecturers key note addresses and provided right mix to enlighten you all with latest need of environmental awareness.

In this Conference participants were from different disciplines like Food, Tourism, Biological Sciences, Chemical sciences, Environmental Sciences, Social sciences, Sports, and Information science. The highlight of this conference was the count of young researchers around the globe was remarkable and would like to invite the researchers for our next conference which shall be held in offline mode in our college campus and I hope you will return with sweet memories of the conference

Dr. Rajendra Dandawate
Organising Secretary
drajendra2006@gmail.com

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Virtual Mode

15-16 June., 2021

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2ND INTERNATIONAL CONFERENCE ON
"CLIMATE CHANGE AND ITS EFFECT ON ENVIRONMENT, FOOD & SOCIETY" -2021
(ICCCEFS-2021)

(ON 15-16TH JUNE 2021)

CONFERENCE PROGRAMME

DAY AND DATE	TIME	EVENT	NAME/DETAILS
	10.00AM-10.30 AM	**INAUGURATION FUNCTION**	
15.6.2021 **TUESDAY**		**CHIEF GUEST**	**DR. SANJAY JAGTAP** JOINT DIRECTOR HIGHER EDUCATION, PANVEL & PUNE., GOVERNMENT OF MAHARASHTRA
		CHAIRMEN	**DR. V.K. DESHMUKH** SECRETARY, MES SONAI
	10.30AM - 11.10 AM	KEYNOTE ADDRESS-1	**PROF. DR. S. GANAPATHY VENKATASUBRAMANIAN**, ANNA UNIVERSITY, CHENNAI.
	11.10 AM- 01.00 PM	ORAL PRESENTATIONS OPZ-1-22	**LIFE SCIENCES SECTION-** (BOT/ZOO/BIOTECH/MICRO) ***CHAIRMAN*-** **DR. LAHU PAWAR** HOD, ZOOLOGY, C G PATIL COLLEGE, SAKRI. DHULE
		ORAL PRESENTATIONS OPE-1-21	**ENVIRONMENTAL SECTION-A** (OTHER THAN LIFE SCIENCES) ***CHAIRMAN*- DR. KIRAN BAMEL** DEPARTMENT OF BOTANY, SHIVAJI COLLEGE (UNI. OF DELHI), DELHI-
		ORAL PRESENTATIONS OPE-22-42	ENVIRONMENTAL SECTION-B (OTHER THAN LIFE SCIENCES) ***CHAIRMAN*- DR. S. ANBHAZHAGI** DEPARTMENT OF ENVI. SCIENCE,

			CENTRAL UNI. KERALA.
	1.00PM – 2.00 PM	**BREAK**	
	02.00PM - 02.40 PM	KEYNOTE ADDRESS-2	**PROF. DR. LAXMIKANT SHINDE** (SENATE MEMBER) DR. BAM UNIVERSITY AURANGABAD.
	02.40PM - 6.00 PM	ORAL PRESENTATIONS OPZ-23-29	LIFE SCIENCES SECTION (BOT/ZOO/BIOTECH/MICRO) *CHAIRMAN-*

		OPB-1-15	**DR.NARAYAN PRASAD GHIMIRE** DEPT. OF BOTANY, TRIBHUVAN UNIVERSITY, NEPAL.
		ORAL PRESENTATIONS OPE-43-64	ENVIRONMENTAL SECTION-A (OTHER THAN LIFE SCIENCES) ***CHAIRMAN*- DR RAVI PRADHAN**, HEAD DEPT.OF ZOOLOGY L.B.S.COLLEGE,PARTUR
		ORAL PRESENTATIONS OPE-65-86	ENVIRONMENTAL SECTION-B (OTHER THAN LIFE SCIENCES) ***CHAIRMAN*- DR L.B.PAWAR** HOD, ZOOLOGY, C G PATIL COLLEGE, SAKRI. DHULE
WEDNESDAY 16.6.2021	**10.00 AM-10.40 AM**	KEYNOTE ADDRESS-3	**DR. RAJESH RAGADE** DIRECTOR, DEPT. OF TOURISM, DR. BAM UNIVERSITY AURANGABAD.
	10.40AM - 01.00 PM	ORAL PRESENTATIONS OPB-16-37	**LIFE SCIENCES** (BOT/ZOO/BIOTECH/MICRO **DR. KISHOR KUMAR DASH,** DEPT OF BOTANY, BALIMELA COLLEGE, MALKAGIRI ODISHA
		ORAL PRESENTATIONS OPE-87-107	**ENVIRONMENTAL SECTION-A** (OTHER THAN LIFE SCIENCES) ***CHAIRMAN*- DR. RIDHI JOSHI** DEPARTMENT OF PLANT- BIOCHEMISTRY UNIVERSITY OF RAJASTHAN .

		ORAL PRESENTATIONS OPE-108-129	**ENVIRONMENTAL SECTION-B** (OTHER THAN LIFE SCIENCES) ***CHAIRMAN*- DR. MAHEJABBIN SAYYAD** AGASTI ARTS, COMMERCE AND SCIENCE COLLEGE AKOLE.
	01.00PM – 3..20 PM	POSTER PRESENTATION	**CHAIRPERSON -** **1.DR. RENU SHARMA** **SPG GOVERNMENT COLLEGE AJMER** **2.DR MANESHA MATHUR** SPG GOVERNMENT COLLEGE AJMER
	03.20PM - 04.00 PM	KEYNOTE ADDRESS-4	**DR W.A.H.P. GURUGE,** SENIOR LECTURER, DEPARTMENT OF ZOOLOGY, UNIVERSITY OF RUHUNA, MATARA, SRI LANKA.
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DETAIL ABSTRACTS

Plenary Lecture – 1

THE ROLE OF LEGAL REGIME IN INDIA FOR EFFECTIVE ENVIRONMENTAL MANAGEMENT

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ABSTRACT

Though Sustainable Development word has come in to existence from Rio Declaration (1992). But if anyone could trace the history of the Indian culture, whatever the practices we were doing from time immemorial were all of towards Sustainable Development. But most unfortunately due to the introduction of western culture in to our system it has slowly changed into consumerist culture. From the repair to remove and replace to use and throw culture. Even though the Sustainable Development principle has come into existence since Rio Declaration (1992), strictly and judicially speaking it was in the form of soft law only , which is judicially non enforceable and non obligatory on the part of signatories. It is needless to say India was also partner for the Declaration. But still the soft law was given hard law status in India by our Hon Supreme Court in its land mark judgement in the Vellore Citizen Welfare Forum vs Union of India case in the year 1996. For the effective Environmental Management three

―E‖ s are essential vide Engineering, Education and Enforcement. In Engineering point of view to attain the sustainable development we have to have a comprehensive look and control of all the sources and types of pollution through technological input and ways and means. It is highly imperative to blend the scientific principles into the engineering and develop technology to control and manage the pollution both at the source and end pipe treatment with clean development mechanism where it is possible. The second ―E‖ is Education –namely creating an awareness and sensitizing the people the importance of pollution control, changing the life style and behaviour of the people and practice more ecofriendly methods. Infact Hon Supreme Court in one of its land mark judgements made Environmental Education as one of the compulsory paper in the college and University curriculum irrespective of the branch of study , with same syllabus throughout the length and breath of the country. Finally with reference to third

―E‖ namely Enforcement here the laws play good amount of role in managing and controlling the Environmental pollution and Environmental Protection. Laws are the tools in the hands of the enforcement agencies to control and combat the pollution. Again for the purpose of enacting the laws the Constitution has give room for the legislature. In this connection it can be very proudly said that India is one among the few countries in the world where the Environmental Protection is given the Constitutional status. We have enacted a plethora of Environmental Legislations in the last two decades in addition to the Indian Penal Code for the effective environmental management. Apart from this Legislature, Executive, the third arm and pillar of the democracy namely Judiciary also played a very active role and paved the way for the emergence of environmental Jurisprudence. In my paper, I am going to discuss the how far the Sustainable Development has been given a hard law status by the Judiciary and more so the higher judiciary innovatively interpreting the Constitution elevated the Environmental Right in to a Constitutional Right from the ordinary simple public

nuisance under the IPC. Apart from that the judiciary also ingrained certain principles and doctrines into our Environmental Jurisprudence . Inspite of all these we could not able to achieve the requisite or expected target, why .Apart from this the global concern for environmental crisis have led to the evolution and remarkable growth of international environmental Law also

The analysis has been made under the following headings:

1. The different principles of International Environmental Law
2. The Legal Status of General International Environmental Principles.
3. The various concepts and Principles of Sustainable Development
4. Right to Development - Human Right
5. Role of Human Rights Law in the Protection of Environment and the advantages and disadvantages of Human Rights Approach
6. Treaties concerned with Third Generation Rights
7. Advantages and Disadvantages of Human rights Approach
8. The International Law and State Courts
9. International Law and the Indian Constitutional Scheme.
10. International Law and the distribution of Legislative power
11. International Law and the Constitutional Duty
12. International Law and Indian Courts

The Judicial adoption of international environmental law into domestic law in India has not been done overnight rather it has been gradual. In order to understand the Judicial process of such adoptionFinally a blend of technological solution with Economic, ecological and legal regime together with political will, public participation and professional ethics, alone can solve the Environmental problems effectively and for the sustenance AND EFFECTIVE MANAGEMENT of Sustainable Development.

The Legal regime with reference to Municipal Solid Waste Management Bio Medical Waste management and Hazardous Waste Management will also be dealt with.

Plenary Lecture – 2

CLIMATECHANGEANDINVASIVEALIENSPECIES:DUALWAR AGAINST BIODIVERSITY

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Climate is the crucial driver which determinesthe diversity of life in ecosystems. Climate change is a change in the pattern of weather, and related changes in the oceans, land surfaces and ice sheets, occurring over time scales of decades or longer. Most general public think that term weather and climate are same, but weather describes the conditions of the atmosphere at a certain place and time with reference to temperature, pressure, humidity, wind presence of clouds, precipitation and the occurrence of special phenomena, such as thunderstorms, dust storms, tornados and others (Cubasch *et al*, 2013). However, Climate is often defined as the average weather at a particular place, incorporating such features as temperature, precipitation, humidity, and windiness. A more precise definition would state that climate is the mean state and variability of these features over some extended time period ranging from months to thousands or millions of years.

There are many indicators of climate change. Some are physical responses such as changes in the surface temperature, atmospheric water vapour, precipitation, severe events, glaciers, ocean and land ice, and sea level. Global Temperature Rise, warming Ocean, Greenland and Antarctic ice sheets, glacial retreat, decreased snow cover, sea level rise, declining Arctic sea ice, extreme events, ocean acidification are considered as evidence of climate change.

Convention on Biological Diversity defines an Invasive Alien Species (IAS) as aspecies native to one area or region, that have been introduced into an area outside their normal distribution, either by accident or on purpose, and which have colonized or invaded their new home, threatening biological diversity, ecosystems and habitats, and human well- being (CBD, 2006).Climate change and IAS are among the top-five drivers of biodiversity loss and changes in ecosystem services worldwide, along with habitat change, overexploitation of resources, and pollution (MEA 2005).Since the 17th century, IAS has contributed to nearly 40% of all animal extinctions for which the cause is known (CBD, 2006).They are responsible for the extinction or decline of many species and continue to pose a huge threat to many more.

The mechanism of invasion of IAS involve three steps in sequence: Introduction, establishment and spread. All of these steps are boosted by climatic changes. In past species have dispersed throughout the world by natural means.But there are major barriers to their spread, i.e. their own dispersal abilities natural geological obstacles (rivers, mountains and oceans)andenvironmental factors(temperature, altitude, disease). Climate changes are directly or indirectly causing some changes in these barriers facilitating above three steps.

Changes in the factors associated with climate, would not only alter the spatial distribution of species, but also facilitate some of the non-native species to become

invasive. Species can react to climate change by shifting their geographical rangeinto the

new boundaries set by the climate parameters. For an example, in the northern hemisphere, the range of terrestrial plants has shifted on average 6.1 km/decade poleward or 6.1 m/decade upwards in altitude, and the onset of spring has advanced by
2.3 – 5.1 days/decade over the past 50 years (Scott and Bergstrom, 2006). Climate change and IAS could increasingly interact in a positive feedback loop, with climate change opening up new habitat for IAS, and IAS subsequently makes ecosystems more susceptible to climate change (McNeely 2000).Extreme climatic events resulting from climate change, such as hurricanes, floods and droughts can transport IAS to new areas and decrease the resistance of habitats to invasions. Climate change is also opening up new pathways of introduction of IAS. For example, emerging Arctic shipping passages due to melting ice caps will greatly reduce the time taken for ships to travel from Asia to Europe.
The effect of changes in the climate on biodiversity and ecosystems is explained in the terms of three consequences. These are short term (climate extremes: floods, seasonal rainfall failure), medium (droughts, temperature fluctuations- high and low) and long term (extended droughts, consistently high/low temperature) consequences. In the short to medium term, anthropogenic factors such as land fragmentation, habitat degradation and destruction, pollution by nitrogenous wastes and IAS are important (Walther *et al.,* 2009)
To be an IAS that particular plant or animal species must arrive, survive and thrive in their new environment. Climate change will act on all three components of this invasive pathway.Changes in climate may be negatively impacted to native species and sometimes more sensitive native species may be exterminated from their first habitat and thus assisting spread and established IAS.
Since IAS and climate changes are a universal issue, the collaboration among governments, economic sectors and non-governmental as well as international organizations is inevitable.As the impacts of IAS are increasingly aggravated by a climate change, policy responses addressing these issues need to take into account the links between the two issues. In Sri Lanka the ‗National Invasive Alien Species Policy' prepared by the Ministry of Environment, comprises various strategies and action plans and is to undergo a broad stakeholder consultative process. Sri Lanka as an island having limited ports of entry compared to mainland nations developed protocol to prevention of entry and pre-entry risk assessments (Iqbal et al., 2014). Climate change policies can integrate with IAS, by including IAS prevention and control, and by ensuring that measures to address climate change do not increase the threat of IAS.

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ENVIRONMENT SECTION ORAL PRESENTATION

OPE-1

RESIDUALEFFECT OF NONL EGUMINOUS WEED MANURES ON FODDER CROP *LABLAB PURPUREUS"*

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ABSTRACT :

An application of Non Leguminous weeds (*Achyranthesaspera* and *Partheniumhysterophorus*) manure usually shows a favourable influence on crop yields for several years. These beneficial effects are distributed over a longer time than those of chemical fertilizers. *Partheniumhysterophorus* is a species of flowering plant in the aster family, Asteraceae. In India, it is locally known as carrot grass, congress grass or Gajar Ghas. It is an annual herb that aggressively colonizes disturbed sites. It grows on any type of soil and in a wide range of habitats and affects the production of crops, animals, human and animal health, and biodiversity. *Achyranthesaspera* is a species of plant in the family Amaranthaceae. It is distributed throughout the tropical world. It can be found in many places growing as an introduced species and a common weed.

Present investigation state that the residual effect of organic manures as comparative residual effect of Non leguminous weed compost manure, green manure and dry leaf manure on fodder crop *Lablabpurpureus* plant yields. *Lablabpurpureus* is a species of bean in the family Fabaceae. It is native to Africa and it is cultivated throughout the tropics for food and fodder crop. It is not only drought resistant but also able to grow in a diverse environmental conditions around the world.

The experiment was conducted on the farm located at V-P High-tech Research farm, Dist. Beed. The experiment design was a randomized block design [RBD] with ten treatments and three replicates. Previous work in this laboratory and field shows that input, data for the organic manure in form of chemical fertilizers PK and NPK at the rate of 120N, 80P and 40K and compared with organic Non leguminous weed manures as green manure of *Achyranthesaspera* (AGM), green manure of *Partheniumhysterophorus* (PGM), mixed green manure of both.(A&PGM), Dry manure of *Achyranthesaspera*(ADM), Dry manure of *Partheniumhysterophorus* (PDM), compost of *Achyranthesaspera* (ACo) and compost of *Partheniumhysterophorus* (PCo). Result shows that green manure and compost manure of Non- leguminous weeds gives long term residual effect on crop *Lablabpurpureus* plant and its improves the soil quality.

Keywords: Non-leguminous, organic, residual, weeds, manure.

OPE-2

A STUDY ON HETEROSIS IN F_1 HYBRIDS OF RICE DEVELOPED FOR YIELD AT DROUGHT

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ABSTRACT

Rice is a major food for the Indian people to get instant energy. Since rice plant is a semi-aquatic plant, it grows well and gives good yield under flood or irrigated condition. Nowadays, the cultivation of rice in rain-fed uplands is also started to increase grain yield to feed the increasing people population. At the same time, the rice breeders have to concentrate on more rice production in the presence of drought in uplands due to inconsistent rainfall by climate change. Drought has a major impact on plant growth and development, limiting crop production throughout the world. Fortunately, to date, several quantitative trait loci (QTLs) with large and consistent effects on grain yield under drought stress have been identified at International Rice Research Institute (IRRI). In the present study of Heterosis, more than one hundred F_1 Hybrid seeds were produced from a cross made between ADT 36 (local rice cultivar) and CR Dhan 801 (Drought tolerant) and they were subjected for the screening of drought and yield. In drought tolerance at seedling stage, percent of mid parental (-45.65 and - 22.22) and better parental value (-59.01 and -35.52) were not significant in both pot and field trials. In case of root length, percent of mid parental value (-24.0 and -0.35) was insignificant and better parental value (-37.15 and 2.96) was significant at field trial. At yield level, percent of mid parental value (35.59 and -1.98) was significant when compare to better parental value (-17.29 and -6.22). Here, QTLs (DTY1.1+DTY 2.1+DTY3.1) have shown the association with root length and yield rather than drought tolerance in terms of leaf rolling at seedling stage. Thus, development of high yielding rice lines under drought condition will help the rice farmers to increase the rice production.

Key words: ADT 36, Drought, Heterosis, F_1 Hybrids and QTLs.

OPE-3

CYANOBACTERIAL DIVERSITY AND ABUNDANCE IN MAIZE FIELD OF AHMEDNAGAR DISTRICT (M.S.) INDIA

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ABSTRACT

Cyano bacteria is a diverse group of plant kingdom. They found in variety of terrestrial habitat. Cyano bacteria is one of the significant components of soil microflora. They fixes atmospheric nitrogen and increases fertility of soil. Majority of the species of cyanobacteria helps in retention of soil moisture and provides germination ground for the seeds of flowering plants. The cultivated field ecosystem provides favourable ground for the growth and development of Cyano bacteria. Present paper deals with the cyanobacterial flora of Maize (Zea mays L.) field, located in Shrirampur tahsil area of Ahmednagar district of Maharashtra. Cyanobacterial samples were collected at weekly intervals from moist soil surface of selected field. The work was carried out from July 2017 to October 2017. Bold's basal medium was also to culture cyanobacteria from soil of Maize field. Collected and cultured cyano bacterial forms were observed and identified. A total of 32 species under 15 genera were identified and recorded. Cyanobacterial taxa such as *Aphanothecenidulans*, *Myxosarcinaburmensis*, *Oscillatoriaobscura*, *Oscillatoriasubbrevis*, *Microcoleusacutissimus* and *Nostocpunctiformae* were found dominant. Selected physico-chemical parameters shows positive correlation with diversity and abundance of cyanobacterial flora.

***Keywords*:** Cyanobacteria, Maize field, Physico-chemical parameters.

OPE- 4

DIVERSITY OF WOOD ROTTING FUNGI FROM GAUTALA FOREST, MAHARASHTRA (INDIA)

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ABSTRACT

Wood rotting fungi grows and produce fruiting bodies on living trees, dead trees and angiosperm wood logs which are capable to decay, wood decaying fungi is categories into two groups white rot fungi and brown rot fungi. The white rot fungi degrade lignin and cellulose while brown rot fungi degrade cellulose and hemicellulose, brown rot are more dangerous than white rot, in every year living trees from the forest are destroyed due to decomposition, decay and rot. In present investigation forty nine wood rotting macrofungi were collected from various areas of Gautala forest, from that eleven different specimens were identified on the basis of morphological and microscopic study of macrofungi was carried out with respect to botanical name, family, edibility, host, basidiocarp dimension, spore dimension, altitude, latitudeand longitude.

Phellinus badius, Schizophyllum commune, Scytinostroma duriusculum and Ganoderma lucidum are dominating macrofungi it is very commonly found and Cellulariella acuta, Earliella scabrosa, Funalia leonina, , Hypoxylon haematostroma, Lentinus sajor-caju, Pleurotus cystidiosus, Pseudofavolus tenuis rarely found

Keywords : Wood rooting fungi, White rot, Brown rot, Gautala forest, Macrofungi.

OPE 5

EFFECT OF AIR POLLUTANTS ON CHLOROPHYLL CONTENT OF SOME CROP PLANTS NEAR RATTAN INDIA AMRAVATI THERMAL POWER PROJECT AMRAVATI, MAHARASHTRA, INDIA

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ABSTRACT

The present investigation was carried out to evaluate the impact of air pollutants on chlorophylls content of crop plants *viz Cajanus cajan, Gossypium herbaceum, Cicer arientium, Triticum, Pennisetum glaucum* cultivated in the vicinity of Rattan India Amravati Thermal project Amravati. The crops grown near to the Sant Gadge Baba Amravati University were selected as a control. The crops grown near to the polluted site shows reduction in chlorophyll contents. *Cicer arientium* and *Pennisetum glaucum* were more sensitive to the air pollutants showing severe decrease in chlorophyll pigments i.e 0.021 and 0.062 ug/ml respectively. However, the level of total chlorophyll content was found to higher in *Cajanus cajan*(1.25 ug/ml) belongs to non polluted site as compare to *Cajanus cajan* (0.80 ug/ml) of polluted site.

Conclusion:The crops cultivated in the vicinity of industrial zone shows reduction in chlorophyll contents as compare to the crops grown in least polluted area. The continues increase in environmental air pollution leading to decrease in crop productivity.

Keywords:Air pollutants, chlorophyll content, crops

OPE-6

EFFECT OF ARBUSCULAR MYCORRHIZAL *GLOMUS* SPECIES ON DROUGHT TOLERANCE OF ONION (*ALLIUM CEPA* L.)

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ABSTRACT

An experiment was conducted to determine the effect of mycorrhizal fungi inoculation on growth of onion grown under well watered and water stressed pot cultureconditions.Onion (*Allium cepa* L.) cloves were planted in furrows. The data was collected at an interval of 15 days. Colonization of root with Arbuscular Mycorrhizal (AM) fungi occurred in under water-stressed and well-watered conditions, but the extent of AM fungi root colonization was higher under well-watered than under water stressed conditions. Regarding length of leaves, root, weight of bulb and diameter of onion after 45, 60, 75 and 90 days,data was collected. The AMF-inoculated plants had higher fresh bulb yield and mean bulb weight than uninoculated plants However, inoculation with AM fungi has improved onion bulb yield. The result indicates from AM fungi inoculation benefited more than that of especially under water-stressed conditions.

OPE-7

EFFECT OF MUTAGENS(EMS,SAANDGAMMA RADIATION)ON QUANTITATIVE PARAMETERS OF *VIGNA RADIATA* (L.)WILCZEK

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ABSTRACT

Creation of genetic variability in crops for improvement in its Qualitative and Quantitative parameters; mutagens (Chemical and Physical) act as crucial role in the field of plant breeding. Using Ethyl methane Sulphonate (EMS), Sodium azide (SA) and Gamma radiation (GR) dominant and recessive qualitative as well as quantitative parameters were studied in this experiment. The research study was carried out on *Vigna radiata* Cultivar- Naval. The seeds of cultivar were exposed to treatments with EMS, SA and GR concentrations of mutagens. The selected concentrations were determined by LD_{50} Value i.e. 10, 15, 20 mM from EMS; 2, 3, 5 mM from SA and 250, 350, 450 Gy from Gamma radiation. These doses showed significant results on Quantitative parameters in M_2 generation. The yield contributing traits showed positive and negative correlation against the control. Among these treatments we found some dominant and recessive mutants in relation with yield contributing and morphological traits which are different than the control. These mutants were harvested and collected separately for sowing purpose in M_3 generation to study their performance in next generation.

Keywords-*Vigna radiata*, Mutagens, M_2 generation, Quantitative parameters.

OPE-8

ASSESSING THE SUSTAINABILITY OF ECO TOURISM IN INDIA–A REVIEW

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ABSTRACT

Ecotourism is regarded as a sustainable tourism model as it eradicates poverty and help in conservation of biodiversity. This paper aims to review Ecotourism sustainability in India. If a tourism is economically viable, ecologically sensitive and culturally appropriate then it leads to sustainable development. This paper assesses the sustainability practices of ecotourism in India and its impact on the environment.

***Keywords*:** Ecotourism, Responsible Tourism, Sustainable Development, Environmental

OPE-9

EFFECTS OF RHIZOSPHERE-MICROBES ON PLANTS

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ABSTRACT

Lorenz Hiltner in 1904, described the term rhizosphere first time, hencerhizosphere is the area of soil that is to say immediately near to the root surface in which the microbial population of soil is influenced by the chemical events of plant root's exudates that aid as nutrients for rhizosphere microbial growth. In this way, rhizosphere considered an important area for plant growth, nutrient recycling and disease resistance. Billions of microbes are present in a handful of soil, which comprises fungi, bacteria and archaea, which differs according to plant species, root zone, growth stage of plant as well as occurrence of stress and disease. The root exudates release from the roots create a different environment for microbial growth in the rhizosphere other than the bulk soil. The plant-microbial association in the rhizosphere have positive impact on the development of microbial diversity, inducing production of growth-promoting auxins and cytokinin, make nutrient availability, stimulating host defence mechanisms, sustain agriculture, providing tolerance to stress, and controlling pathogens through antagonism. Hence, biofertilizers and biocontrol agents can be formulated from these beneficial plant growth-promoting (PGP) microbes. Along with this, several microbes are also violent for plants, therefore, show pathogenic activity. This paper summarizes the natural associations between plants and microbes in the rhizosphere and discusses how their relationship effects on plants both, beneficially and negatively.

Keywords: Rhizosphere, Microorganisms, Biofertilizers, Biocontrol agents, defence system, violent.

OPE-10

FAUNAL DIVERSITY OF PANNA NATIONAL PARK (M.P.)

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ABSTRACT

Wildlife conservation includes all human efforts to preserve wild animals from extinction. It involves the protection and wise management of wild species and their environment. Some species have become extinct due to natural causes but the greatest danger to wildlife stems from human activities. Thus we ourselves have created this need for wildlife conservation.

The progress of humans throughout has been beneficial for our race but it is the wild that has suffered through the years. The invention of sophisticated weapons, industrialization, urbanization, ever-increasing human population have been some of the major reasons behind the dwindle of our once rich wildlife resource. Hunting, clearing of forests, draining of swamps, and damming of rivers for irrigation and industry, this is what we appraise of man‘s progress. These activities have vastly reduced the natural habitats of our wildlife and many species are endangered and nearly extinct.

Keywords: Flora and Fauna, Diversity, Endangered, species, Conservation.

OPE-11

FOLIA RVERSUS ROOTEXPOSURE OF ZINCOXIDE NANOPARTICLES TO*ORYZASATIVA*L.:ANTIOXIDANT RESPONSES,INTERNAL TRANSLOCATION, AND PHYTOTOXICITY

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ABSTRACT
An environmental particulate-matter pollution is the release of nanoparticles (NPs) into the atmosphere, which causes hazards to the ecosystem and human health. Familiarity with phytotoxicity and uptake routes in plants provides a foundation for generating a mechanistic-based effect assessment for the plants. Information related to the uptake, translocation, and accumulation of NPs in plant tissues is partially lacking. Therefore, this study aims to determine the impact of the synthesized zinc oxide NPs (ZnO NPs) on rice crops by foliar spray and root amendment methods. We methodically evaluated the internalization, accumulation, and antioxidant responses in plants at various concentrations. Different characterization techniques viz. x-ray diffractometer (XRD), UV-visible spectroscopy, dynamic light scattering (DLS), Fourier transform infrared spectroscopy (FTIR), scanning electron microscopy (SEM) and transmission electron microscopy (TEM) were used to show efficacious synthesis of ZnO NPs. The results indicated that there is only a threshold concentration of NPs up to which the rice crop‘s development are promoted. The growth of plant is negatively affected beyond the threshold concentration. The foliar spray was found to be more effective than the root amendments on the uptake of the NPs in plants. These findings advocate that the translocation and accretion of ZnO NPs need to be considered in unravelling the fundamental mechanisms of toxicity. Additionally, assessing food safety and ecological risks is also required ensuing utilization of plants exposed to these NPs by humans.

Keywords: Plants, Translocation, Zinc oxide nanoparticles, Rice, Phytotoxicology.

OPE-12

GEOSPATIAL TECHNIQUES & PEDO-GEOMORPHOLOGY BASED ASSESSMENT OF SOIL SUITABILITY FOR SUSTAINABLE GRAPES HORTICULTURE DEVELOPMENT

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ABSTRACT

The growing population is of paramount importance to developing countries as it equally important to provide adequate resources to this population and to ensure that in doing so there are no additional strains on the available natural resources, providing adequate food security, increasing productivity through proper reforms in the agriculture sector, maintaining the texture of available land and bringing fallow land under cultivation are essential for sustainable agriculture growth, natural resource management, and rural development. There is a need for time to develop the ideal study model of land management, changes in the methods of agriculture cropping pattern and its production, scientific management and utilization of soil resources, agriculture crops planning, and practices based on soil-plant relationship studies. In the present study, an attempt has been made to find out suitable land for grapes horticulture for the increasing and optimizing production its production. The study area is village Haste Dumala of Dindori Tehsil, Nashik district, Maharashtra. The criteria adopted for crop site suitability of Grapes horticulture is based on guidelines of NBSS and LUP, India. Geospatial techniques have been used to estimate the quantitative and spatial variation of soil and land characteristics. Raster grid operation and map algebra analysis performed to estimate spatial variation maps like soil salinity, alkali, infiltration rate, permeability, and soil texture. Fieldwork was carried out for collections of soil samples and hydrological measurements. Geomorphology factors are described using DEM and neighborhood analysis. The parametric evolution system applies for calculating soil suitability for grape cultivation. Village parcel number wise land suitability index of grapes horticulture estimated for classification of suitable classes. The assessment shows that in the village Haste Dumala about 5.19 Km^2 (52.50 %) area is highly suitable (S1) and 4.63 Km^2 (47.20%) area is moderately suitable (S2) for grapes horticulture.

Keywords: Pedo-Geomorphology, Geospatial, Land Suitability, Horticulture, Sustainable

OPE-13

HYPHO MYCETESFROMVARIOUSTYPEOFSOILIN AHMEDNAGAR DISTRICT (M.S.)

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ABSTRACT

Twenty species of hyphomycetes collected from the agriculture, forest, sugarcane industries effluent soil. 16 species were isolated from agriculture soil, 19 species from forest soil, and 8 species from sugarcane industries effluent agriculture soil. Sugarcane effluent used in every year by farmer as a fertilizers seems to be suppressing the occurrence of hyphomycetes in such soil.

Keywords-Forest soil, Agriculture soil and Sugarcane industry effluent soil hyphomycetes.

OPE14

THE INFLUENCE OF THE ONGOING COVID-19 PANDEMIC ON AGRICULTURE IN INDIA

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ABSTRACT

Indian Agricultural system disrupted because of COVID-19. The COVID-19 pandemic is a global health crisis that is already having devastating impact on the world economy both directly and through necessary measures to contain the spread of disease. The continuous spread of the COVID-19 virus starting in December 2019resulted in a strict lockdown and nationwide long term home isolation, which has possible led to impact on agriculture in India. This study tried to explores the impact of the lockdown on production as well as post production activities. The present study is also tries to understand the impact on the ensuing Kharif and Rabi cropping season and farmers' investment decision. The systematic review has been made of research articles published in reputed scientific journals related to COVID-19 and agriculture. Lack of planning and preparation by the central government for tackling the COVID-19 pandemic has a dealt a massive blow to India's economy and has caused enormous hardships to working people of the country. In this study, it is found that farmers have incurred losses in transporting and selling their vegetables and fruits such as onion, grapes and other vegetables etc. As the prices crashed during the lockdown, farmers had to incur losses in case of soybean, wheat, maize, milk etc. They also had to face a debt, crisis and delay in their short investment decisions. The main impact of COVID -19 observed on labour shortage in agriculture, according to Economic Survey, around 8% Negative GDP growth observed in FY 21 in the state of Maharashtra. It has also noted that due to COVID-19 the negative impact on low demand price, drop of perishable, drop of export-import items, market and farm prices, supply chains slowdowns and shortages, trouble in buy and repair of farming equipments, farmers health, farm workforce, worker safety and personal protective equipment (PPE) etc. had observed in this study.

Keywords: COVID-19, Pandemic, Agriculture, India, Kharif, Rabi etc.

OPE15

LIFE CYCLE AND THE NATURE OF DAMAGE OF GREATER WAX MOTH, GALLERIA MELLONELLA

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ABSTRACT:

The greater wax moth, *Galleria mellonella*, is a severe pest of honeybee colonies, stored combs and bee products also. The wax moth is a nocturnal and holometabolous insect which consist of four distinct life stages in the form of egg, larva, pupa and adult.It is noted that in the colony of *Apismellifera*, the larval stages of wax moth are most destructive stage which feeds on pollen, honey, wax and brood. The infestation in the colonies is carried by larvae of the wax moth by forming silky tunnels in the comb and leaves masses of webs on the frame. This may lead to colony loss, reduction in the colony size and absconding. Their infestation ultimately impact on the economy of the apiary and agriculture productivity.

As per economic importance of wax moth in the apiculture industry, it is necessary to study their life cycle, destructive nature and any solutions to control such pest for proper management.

Keywords: wax moth, *Galleraimellonella*, honey bee, *Apismellifera*.

OPE 16

OBSERVATION OF COCCIDIA (APICOMPLEXA: EIMERIIDAE) FROM GOAT (CAPRA HIRCUS)FAMILY-BOVIDAE FROM OSMANABAD DISTRICT, (M.S.) INDIA.

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ABSTRACT:

Between June 2013 to May 2015, in this period a total number of 3004 faeces samples from goats were analysed for coccidia and collected from Osmanabad district. In this study 16 species, we have identified. *Eimeria arloingi* out of 3004 samples 2473 samples are positive and prevalence is 30%. One of the *Eimeria* species here we described i. e. *E. arloingi*. E. oocyst is elongated, bilateral wall, and measured (L/W) 23.0X 20.5µm, with an L/W ratio of 1.12µm. Both micropyle and micropylar cap both are present and oocystic residuum and polar granules are absent. Sporocyst is elongate, ovoidal, and measured L/W: 14.7 x 9.95 µm with L/W ratio: 1.47µm. Steida body present and prominent, SSB, PSB: all absent. In the sporocyst compact form of granules dispersed between Sporozoite. Sporozoite is elongate with, spheroidal one ARB and two subspheroidal PRB. Sporocyst possesses a residuum in the form of few scattered granules. This study adds to our growing knowledge of the coccidian fauna of goat in Osmanabad District (M.S.), India.

Keywords: Coccidia, *Eimeria*, Sporocyst, Sporozoite.

OPE17

PHYTOCHEMICAL SCREENING AND ANTIOXIDANT ACTIVITIES IN DIFFERENT SOLVENT EXTRACTS OF *LAUNEAEA PROCUMBENS*

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ABSTRACT

The main objective of present study was screening of phytoconstituent produce by *Launaeaprocumbens* and evaluate it phytochemically by using four different solvents (petroleum ether, acetone, methanol and aqueous) in terms of total phenolic content (TPC), total flavonoid content (TFC), antioxidant properties, and gas chromatography-mass spectrometry (GC-MS) analysis. Antioxidant potential of the extracts was evaluated by non-enzymatic assays (DPPH, ABTS). Lowest IC50 values were shown by methanolic extracts followed by acetone, aqueous and petroleum ether extracts. The antioxidant properties of the extracts showed positive correlation with the total phenolic and flavonoid content of the extracts. 13 different bioactive phytochemicals were found in the methanolic extract of *L. procumbens*. The identification was performed by GS-MS analysis mainly based on retention time, peak area, molecular weight and molecular formula. The finding indicated that some of the recognized phytochemicals possess pharmacological actions which may be responsible for its medicinal values.

Keywords:*Launaeaprocumbens*, Total phenolic content, Total flavonoid content, Antioxidant properties, Gas chromatography-mass spectrometry.

OPE-18

QUANTITATIVE ANALYSIS OF SOURCE-SINK RELATIONSHIP IN LEAVES AND FRUIT OF *CUCUMIS MELO* L.

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ABSTRACT

Cucumis melo L.commonly known as Musk-melon is highly diverse species of the family Cucurbitaceae having many varieties. Musk-melon generally used as a part of salad or direct consumed as a fruit. The plant is climbing or creeping herb which grown in most parts of India as well as world because of its high economic values. This plant is having tremendous ethno- medicinal uses such as to treat kidney and bladder stones, painful and burning micturition, ulcers, suppression of urine and cough. The properties of fruit like colour, taste, odour, texture and nutritive value are the result of photosynthetic product accumulates in the form of fruit or used in metabolic activity.Quantitative analysis ofleaf and fruit shows significant difference in the amount of carbohydrate such as reducing sugar, starch is higher in fruit than leaf. While the amount of protein, total phenol and total free amino acid is higher in the leaf. All the pigments such as chlorophyll a & b, total chlorophyll, carotene and lycopene are found in higher concentration in leaf than the fruits. Thus, this data can lead us to the knowledge of source to sink relationship in plant which can help to improve quality of fruits.

Key words: *Cucumis melo* L., Leaf, Fruit, Quantitative analysis, Source to sink relation.

OPE-19

SERICULTURE- A POTENTIAL AGRO-BASED BUSINESSFOR RURAL AREAS IN INDIA.

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ABSTRACT

Sericulture is an important agro-based, labour intensive and export-oriented cottage industry. It holds promise as an employment generating industry, especially in rural and semi-urban areas in India. In the sericulture agro-based, there are several bye-products. It includes the mulberry fruits are rich in minerals and vitamins and from the roots, barks and mulberry leaves several ayurvedic and herbal medicines are prepared. Some of the woody mulberry trees provide timber which is used for making sports items, toys etc. The mulberry branches after silkworm feeding are generally dried and used as fuel particularly in the villages. The leaves of the mulberry are used as fodder for cattle. The mulberry trees are planted in the fed waste agricultural land for the protection of the soil to prevent soil erosion. The silkworm pupae are rich in oil content; it‘s used in the cosmetic industry and the remaining pupil cake is a rich source of protein suitable for poultry and fisheries. The silkworm litter is used for biogas production and used as a fuel for cooking in rural area. In the cottage industry, silk provides fashionable clothing; it provides several very useful bye products to human society. Therefore, sericulture development provides opportunities to improve the living standards of people in a rural area in India.

Keywords: Sericulture,Mulberry, Silkworm, Rural Area

OPE-20

SOLUBILIZATION OF PHOSPHATE BY *BACILLUS SUBTILIS* DR2, FROM GRASS RHIZOSPHERE(*ERAGROSTIS CYNOSUROIDES*)

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ABSTRACT

Phosphorus is one of the essential macronutrients for plant growth and reproduction. Rhizospheric bacteria play a very significant role in promoting plant growth and development through phosphate solubilising mechanism. In the present investigation, phosphate solubilizing bacteria were isolated from rhizospheric soil of *Eragrostis cynosuroides* (kush grass),growing along the road side area, deprived of any chemical fertilizer. Out of seven isolates, DR2 showed best phosphate solubilization index (4.5), along withphosphate solubilizing activity (40.36 mg/l). On the basis of 16S rRNA gene sequencing, it was identified as *Bacillus subtilis* DR2 (Accession Number KP455653).Various culture parameters for phosphate solubilization were optimized under shaking condition, like incubation period, temperature, pH, carbon source and nitrogen source. Maximum solubilization was observed at incubation period 96 h, temperature 35˚C and pH 7, supplemented with glucose and ammonium sulphate, as carbon and nitrogen sources, respectively. Under glass house experiments barley seed inoculated with *Bacillus subtilis* DR2 resulted in maximum seed germination (60%) with percent enhancements in root length (93.71%), shoot length (41.30%) and biomass (22.44%), over uninoculated control. The results showed that strain DR2 have a potential to be used as plant bio-fertilizer as well as having opportunities for their usage in soil fertility improvement.

K**eywords**: Rhizosphere, Phosphate solubilizing bacteria, Phosphate solubilization index, *Bacillus subtilis*, *Hordeum vulgare*

OPE 21

THE LIMNOLOGICAL STUDY OF GODAVARI RIVER, NEAR SOMESHWAR, NASHIK FOR HUMAN HEALTH SAFETY AND LIVING ORGANISMS.

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ABSTRACT:-

The present study shows the scope and significance of seasonal variations in physico-chemical parameters such as Temperature, pH, total alkalinity, dissolved oxygen, free carbon dioxide, total dissolved solids and chlorides has been studied during the three seasons summer, monsoon and winter from February 2020 to January 2021.Water quality samples were collected from selected points of river segment near the Someshwar in Nashik. The result of present investigation helps to understand the study of physico-chemical parameters of Godavari river, Nashik (M.S.). This water is used for drinking, agricultural and industrial purposes and remote areas. In this paper we revealed water quality of river as a greater portion of population depends on it. In conclusion the various parameters under investigation are within the permissible range and it is suitable for drinking, irrigation and industrial purposes.

OPE-22

TRANSGRESSIVE SEGREGATION IN CROSS 2X7 OF F_2 GENERATION OF TOMATO *(SOLANUM LYCOPERSICUM L.)*

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ABSTRACT-

The present investigation was undertaken during Rabi 2018 - 2019 with an objective to study transgressive segregation in F_2 generation to introgress in to genotypes of the selfed progeny derivatives of tomato. The investigation comprised of evaluation of F_2 generation for transgressive segregation for important quantitative traits in two crosses, 2x7 (C_1) and their parents. These studies helped to find out the percent of transgressive segregation in F_2 generation. In most of the segregation of cross 2x7 in F_2 generation the yield per plant of better parent was found to be transgreed simultaneously with transgression of one or more other yield contributing character. The data on ten quantitative characters were used for studying transgressive segregation of cross 2x7 for F_2 generation. Mean standard deviation were calculated to determine transgressive segregation for characters under investigation. Desirable transgressive segregation was observed for all ten characters except number of locules in fruits. The highest proportion of transgressive segregation were observed for plant height (25.00%) followed by yield per plant (24.90%), number of fruits per plant (22.37%), average number of branches (21.84%), equatorial diameter of fruit (18.68%) and pericarp thickness (17.63%) in cross 2x7 (C_1) of F_2generation.

Keywords: Tomato, Transgressive Segregation, Quantitative character, Yield.

OPE-23

KINETICS OF NITROGEN AND PHOSPHORUS REMEDIATION FROM SUGAR MILL EFFLUENT TREATED SUBSTRATE USING *AGARICUS BISPORUS*: MUSHROOM YIELD AND BIOCHEMICAL POTENTIALS

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ABSTRACT

This study investigated the yield and biochemical potential of *Agaricus bisporus* mushroom cultivated on agricultural waste substrate supplemented with treated sugar mill effluent (SME). Laboratory-scale experiments were performed for the cultivation of *A. bisporus* on a mixture of wheat straw and sugar cane bagasse moistened with different doses of borewell water (BWW) and treated SME (0 to 100%). Besides this, the simultaneous effects of the SME amendment on total Kjeldahl's nitrogen (TKN) and total phosphorus (TP) contents of substrate fraction and kinetics of their utilization by *A. bisporus* were studied. Results showed a relatively higher utilization of TKN (38.10 ± 1.60%) and TP (47.4 ± 6.44%) in a 25:75 ratio of BWW and SME, respectively. The kinetics studies of TKN and TP utilization using Lineweaver-Burk models described the maximum specific utilization rates (V_{max}) of 0.165 and 0.125 mg·kg^{-1}·d^{-1} and saturation points (K_m) of 72.401 and 33.283 mg·kg^{-1}, respectively, which are in good agreement as indicated by R^2 values (>0.90). In addition, the maximum significant (P<0.01) yield (159.31 ± 8.85 g·Kg^{-1}), biological efficiency (106.21 ± 3.84%), total phenols (3.03 ± 0.07 mg·g^{-1}), ascorbic acid (0.44 ± 0.03 mg·g^{-1}), and β-carotene (3.36 ± 0.05 µg·g^{-1}) of *A. bisporus* were observed using the same treatment. Therefore, this paper reported sustainable utilization of TKN and TP nutrients from SME for *A. bisporus* mushroom cultivation.

Keywords:*Agaricus bisporus*; Kinetics studies; Mushroom cultivation; Sugar industry effluent; Wastewater management

OPE-24

CAUSES AND EFFECTS OF URBAN SPRAWL IN AGARTALA CITY, INDIA.

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ABSTRACT
Urbanisation is a worldwide phenomenon; it is rapidly taking place all over the world. Unrestricted growth of urban areas results in urban sprawl. The study area is also experiencing urban sprawl over the years. Agartala city is the rapidly urbanising capital city of a small North Eastern state of India, Tripura. The city is the second most populated and one of the fastest growing city in the North Eastern region of India.. The city extends from 23º45´ to 23º55´ N of latitude and 91º15´ to 91º20´ E of longitude. Population of the city was 400004 according to 2011 census. Causes and effects of urban sprawl found in the city are established on the responses of city residents which was collected through primary survey. Secondary data was collected from available sources and the data was analysed with the help of appropriate methods. Urban development is important and for urban growth necessary measures should be taken to ensure the well being of the residents as well theenvironment.

***Keywords*:** Urbanisation, Urban Sprawl, Causes and Effects.

OPE-25

STUDY OF ISOLATION OF SOME LITTER DECOMPOSING FUNGI FROM*AZADIRECHTAINDICA*A.JUSS.AND *PROSOPISJULIFERA*(SW.)DC

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ABSTRACT

In the nature process of decomposition always involves animals, fungi and bacteria. Bacteria cannot degrade whole leaves, only fungi have ability to degrade leaves and convert into compost because fungi having lignololytic and cellulocytic enzymes to degrade lignin and cellulose. Litter decomposition is important process for nutrient cycling as it is a good source of dead organic matter. To isolate fungi leaves of *Azadirechtaindica* A. Juss.and *Prosopisjulifera*(Sw.)DCwere selected. From study four litter fungus were reported.

Key words: *Litter, Azadirechtaindica, organic matter, enzymes*

OPE 26

UTILIZATION OF MAGNETI ENERGY FOR THE QUALITATIVE IMPROVEMENT IN THE SHELL RATIO OF THECOCOONS SPUN BY THE MATURE LARVAE OF SILKWORM, BOMBYX MORI (L) RACE: BIVOLTINE CROSSBREED (DOUBLE HYBRID) [(CSR6 X CSR26) X CSR2 X CSR27)]

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ABSTRACT

The shell ratio gives a satisfactory indication of the amount of raw silk that can be reeledfrom a given quantity of fresh cocoons under transaction. The calculation of shell ratio assistsin estimating the raw silk yield of the cocoon and in deriving an appropriate price for thecocoons. The percentage will change based on the breed of the silkworms, rearing andmounting conditions. Percentage rates are altered based on the age of the cocoons as the pupaloses weight as metamorphosis continues. The fifth instar larvae of bivoltine cross breed(double hybrid) [(CSR6 x CSR26) x CSR2 x CSR27)] of silkworm, Bombyx mori (L) wereexposed to the magnetic energy of various strengths (1000, 2000, 3000 and 4000 Gaussmagnetic field). The magnetization of fifth instar larvae was carried out on the first four days,for half an hour for each day before first feeding. The attempt reveals significant influence ofmagnetization of Bombyx mori (L) larvae on the shell ratio of the cocoons. The shell ratio ofthe cocoons spun by the fifth instar larvae of untreated control group was 19.427 percent. Theprovision of 1000 Gauss magnetic energy to the fifth instar larvae on the first four days, forhalf an hour for each day before first feeding was found the silk cocoons of 20.953 percent.The provision of 2000 Gauss magnetic energy to the fifth instar larvae on the first four days,for half an hour for each day before first feeding was found the silk cocoons of 21.112percent. The provision of 3000 Gauss magnetic energy to the fifth instar larvae on the firstfour days, for half an hour for each day before first feeding was found the silk cocoons of21.204 percent. The provision of 4000 Gauss magnetic energy to the fifth instar larvae on thefirst four days, for half an hour for each day before first feeding was found the silk cocoonsof 22.162 percent. Magnetization may have had influence on the increase in the levels ofamino acids followed by accelerated rate of silk synthesis in the fifth instar larvae ofsilkworm, Bombyx mori (L). Magnetic energy should be utilized as efficiently as possible forthe qualitative improvement in the shell ratio of the cocoons spun by the mature Larvae ofsilkworm, Bombyx mori (L) Race: Bivoltine Cross Breed (double hybrid) [(CSR6 x CSR26) xCSR2 x CSR27)].

Keywords: Magnetic Energy; Silk cocoons; Cocoon Shell Ratio; Bivoltine Cross Breed; Double Hybrid; [(CSR6 x CSR26) x CSR2 x CSR27)].

OPE 27

ANALYSIS OF PADDY SEED VIABILITY STORED BY NON-CHEMICAL METHODS IN CHIKKAMAGALURU, KARNATAKA

SUNIL KUMAR T V

Abstract

Storage of paddy seeds is an important stage in the agriculture process. Proper storage is the key factor to get maximum benefit from produced paddy in consumption, transportation and sowing even after long term storage. Use of eco-friendly non-chemical based storage system is essential in current dates in order to minimize the investment and maintains coast during storage. Following traditional based storage methods which observed will provide these benefits. In current study we analyzed some of those important storage systems in our study area and stored paddy were collected to check its viability and quality respect to (a) duration of storage time and (b) type of storage system. Study revealed that percentage of paddy germination was up to 70% which was stored for eight months and storage mycoflora (rhizopus, A.flavus, A.niger, curvularia.etc) infestation was moderate till nine months of storage.

Keywards: non-chemical storage, conventional storage, paddy storage, paddy germination, storage mycoflora, paddy.

OPE 28

EFFECT OF CLIMATIC FACTORS ON GROWTH OF *ALTERNARIA* ISOLATES FROM *SOLANUMMELONGENA*L.

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ABSTRACT

Genus *Alternaria* was first recognised by Nees in 1817.It belong to deuteromycetes having different species, which are destructive plant pathogen to the families such as solanaceae, cucurbitaceae, brasicaceae. Brinjal (*Solanum melongena* L.) crop is from solanaceae family grown in rabbi and kharip season in study area. It having nutritional and economical value. *Alternaria* cause early blight, fruit rot diseases of brinjal, which lose the quality and quantity of crop. The growth of pathogen is greatly influenced by various climatic factors like temperature, light, humidity etc. Understanding the effect of temperature and light on growth of pathogen will help in developing the effective management strategies, therefore present study was attempted to explore influence of different temperatures and light on five isolates of *Alternaria* sp. isolated from infected brinjal samples from Nashik district. The results indicated that five isolates of the *Alternaria* showed increase in growth at 25^{O}C temperature and at alternate cycle of 12 hr light and 12 hr. dark.

Keywords- Climatic factors, *Alternaria* sp., *Solanum melongena* L.

OPE-29

EFFECT OF SALICYLIC ACID AND EPSOM SALT ON GERMINATION AND GROWTH PARAMETERS OF *BETA VULGARIS* L.

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ABSTRACT
Beta vulgaris L. belongs to the family Chenopodiaceae, commonly called Beet. It contains 88% water,10% carbohydrates, 2% proteins, and a major source of vitamins, iron, and other minerals. In the present study, the treatments of salicylic acid Epsom salt were used to understand the effect on germination and the growth of beet. The various concentrations (2.5,5.0,7.5,10.0,12.5,15.0,17.5 and 20.0 $mScm^{-1}$) of Epsom salt were used for soil application and for foliar application the various concentrations of salicylic acid (0.4,0.8,1.2,1.6,2.0,2.4,2.8 and 3.2 mM) was used. In this experiment, germination percentage and the growth parameters like plant height, number of leaves, and leaf area were studied to evaluate the effect of salicylic acid (SA) and Epsom salt (EP) on beet plants. Among all these treatments, a significant increase in height was seen specifically at 1.2mM of SA at 120 DAG (days after germination) and a linear increase in height was observed at ECe 5, 7.5, 10 mSm^{-1} of EP at 120-days. as well as the Number of petioles increased significantly.
Keywords: *Beta vulgaris*, salicylic acid, Epsom salt, foliar spray, growth parameters.

OPE30

EFFICACY OF FUNGITOXICANTS IN VARIOUS CONCENTRATIONS CAUSING LESION DEVELOPMENT AGAINST *ALTERNARIA ALTERNATE* (FRIES,) KEISSLER CAUSING LEAF SPOT OF COTTON (*GOSSYPIUM HIRSUTUM* L.)

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ABSTRACT

Cotton (Gossypium L.) is one of the commercial fibre yielding crop of India .It occupies a premier place 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. So the present investigation was done in order to check the efficacy of fungitoxicants like Agrosan G.N;Aureofungin,Captan etc.on the pathogenic effect of *Alternaria alternata* in causing lesion development on Cotton leaves.For this ,fresh healthy leaves of same age having no disease symptoms were excised and collected in polythene bags.Fungitoxicants in dilutions 0.05,0.10,0.15… and 0.40 percent were inoculated by spraying with an automizer at the point of injury made .Afterwards leaves were inoculated by spraying with one drop of 0.001 ml of spore suspension at four points of leaf lamina and were kept in petri dishes in moist chamber over surface sterilized bent glass rods to avoid direct contact with moist filter paper. All sets were incubated at room temperature 25± 1°C .It was evident from the data that all the fungitoxicants ,used in different concentrations were better in performance in comparison to control.Out of the 24 fungicides and an antibiotic (Aureofungin) tested ,Agrosan G.N , Captan,Ceresam and Vitavax etc.proved to be most effective by not producing any pathogenetic effect.Other fungitoxicants viz.Brassicol,Calixin were found effective in producing light yellow lesions,while extensive brown spots were observed in the treatment with Bavistin.

Keywords : fungitoxicants,lesion ,*Gossypium*,automizer,spore suspension.

OPE-31

EVALUATION OF F_1 POPULATION OF RICE FOR DROUGHT TOLERANCE AND YIELD

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ABSTRACT

Rice a staple food for most of the Indian people. Nowadays, it is very challengeable to increase the production of rice more in presence of biotic and abiotic stresses. Among abiotic stresses, drought due to shortage of water and uneven distribution of rainfall is one of the major stresses to rice crop. Drought affects the rice crop at any stage of its growth particularly the reproductive stage which is the most sensitive stage for the drought which leads to lose of high yield. Very recently, some of the effective QTLs such as DTY1.1, DTY 2.1, DTY3.1, etc for drought tolerance at reproductive stage have been identified and introgressed into many popular high yielding rice varieties worldwide. In this study also, we have been developed F_1 population from a cross of ADT 37 x CR Dhan 801 harboring these major QTLs through conventional method. This population was evaluated in Pot and field condition for drought tolerance and yield according to IRRI scale. In case of drought, the range of the score was regarded from 0 to 9 for first three leaves of plants in pot and field trial. Here, we found the variations in the range of score in the first leaf of plant such as highly tolerant to highly susceptible in pot trial whereas in the field trial all first leaf were only highly tolerant and there was no variations in the score among them. In the screening of yield, the range of score started from 5 to 9 in pot trial whereas the score in the field trial was in the range of 3 to 9. Thus, the selection of drought tolerant and high yielding plants from pot trial is supposed to be more effective rather than field trial where there could be a chance of unpredicted climate condition.

Keywords: ADT 37, Drought tolerance, IRRI score, F_1 population and QTLs.

OPE-32

FLORISTICDIVERSITYOFSHRIRAMPURTAHASILOF AHMEDNAGAR DISTRICT (M S)

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ABSTRACT

The Shrirampur area is located in the Ahmednagar district of Maharashtra. The area is rich in vegetation shows more biodiversity of plant species. The present paper provides information regarding 51 plants belonging to 39 families survey from Shrirampur tahasil of Ahmednagar district (MS). Brief information about the botanical names, family and local names have been presented.

Keywords: biodiversity, botanical names, local names local names

OPE-33

CLIMATE CHANGE AND THE CRYOSPHERE: LOWER-BARUN GLACIAL LAKE AND ITS GLOF SUSCEPTIBILITY

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ABSTRACT
Glaciers are sensitive indicators of climate change. Shrinkage of the glaciers has direct impacts on formation and expansion of glacial lakes. Sudden glacial lake outburst floods (GLOFs) are a major threat to lives and livelihoods downstream as it can cause catastrophic loss.Multitemporal Landsat and Sentinel satellite imagery are used for the study. NDWI and manual digitization is applied for study of glacial lake. For glacier analysis manual digitization is carried out. Multi-criteria decision-based method is used to assess the GLOF susceptibilityand for the estimation of peak discharge and failure time, empirical model developed by Froelich (1995) is used. The average change in the lake area per decade is found to be 37.84% and overall, 85.58% change is observed in 40 years' time period from 1979 to 2018 AD. An average increase of 4.32-hectare area per year is observed. The shrinkage in the glacier area is around -0.49 sq km in average and has shrunk 8.02% in last four decade. The glacier retreat in Lower-Barun is found to be
0.20 % in a year in last four decade. The susceptibility index found to be 0.94, which suggests that the lake is very high susceptible to GLOF. The peak discharge of 24,402 m^3/s is produced when the breach depth is 64m and entire water volume is released, in 32m breach depth and 50 % water released, the peak discharge of 8,420 m^3/s is formed and in 16 m breach depth and 25 % water released condition, peak discharge of 2,905 m^3/s is produced. If GLOF event occurs, it can exert disastrous impacts to the livelihood and infrastructure in the downstream. So, it is necessary to examine such lakes regularly and mitigation measures to lower the GLOF susceptibility should be emphasized.
Keywords: *Lower-Barun; glacier; GLOF; Susceptibility; modeling*

OPE 34

IMPROVEMENT IN SEED GERMINATION PERCENTAGE AND PRODUCTIVITY OF *CORIANDRUM SATIVUM* L. THROUGH SEED PRIMING

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ABSTRACT

Coriandrum sativum L. belongs to family Apiaceae commonly called Coriander. It is a common green spice used in every part of India. In Maharashtra it is known as Kothembiri. Efforts are made to improve its rate of germination as the plant is temperature dependent. Present study was conducted to study effect of hydropriming on seed germination in *Coriandrum sativum* L. Hydropriming have resulted improvement in seed germination as well as it may help in reducing days to germinate and increase productivity by days with respect to non primed seeds

Keywords- *Coriandrum sativum L, hydropriming, germination, productivity*

OPE 35

INDUCTION STUDIES FOR CHLOROPHYLL PIGMENTS AND PROTEINS CONTENT IN *LABLAB PURPUREUS* (L.)SWEET THROUGH ETHYL METHANESULPHONATE AND GAMMA RAYS

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ABSTRACT

In the present investigation the estimation of total chlorophyll content, and protein content were estimated for the improvement of the nutritive value of the *Lablab purpureus* (L.) Sweet. The chlorophyll ‗a' and ‗b' content was estimated of the leaves, and protein content of the pods and seeds were estimated in the M_4 generations. The highest chlorophyll content was estimated in late flowering mutant and lowest in early flowering mutants. The highest protein content was estimated in dark green leaf mutant and lowest at the dwarf mutants. Promising results were observed in tall, spreading, dark green, luxuriant and early flowering mutants as far as bio chemical content is concerned.

Keywords:Mutation; EMS, Gamma rays, Mutant, Chlorophyll content; protein content

OPE-36

INTEGRATED PLANT NUTRIENT SUPPLY SYSTEM FOR SESAME–RICE- BLACKGRAM CROPPING SYSTEM-AN ECONOMIC ANALYSIS

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ABSTRACT

Existing cropping system of rice-rice-rice fallow blackgram the Cauvery delta zone is required enormous quantity of irrigation water. Further uneven rainfall coupled with delayed availability of canal water in the tail end are the major threaten. At this juncture an alternate crop of sesame was chosen to replace the first rice crop. The present study was conducted at Annamalai University experimental farm to evaluate the performance and its economics of the integrated plant nutrient supply with biocompost fertilization in sesame-rice-black gram cropping system for Cauvery delta zone of Tamil Nadu. . In sesame- rice -blackgram cropping system, the highest gross return of the Rs. 1,88,573 ha^{-1}, net return of Rs. 1,32,377 ha^{-1} and return per rupee invested of Rs.3.36 was associated with the application of 67% N as chemical fertilizer +33% N as biocompost. The least gross return of Rs.78,599 ha^{-1}, net return of Rs.28, 280 and return per rupee invested (Rs.1.56) was observed in control .From the above results, it was concluded that application of 67% N as chemical fertilizer +33% N as biocompost was found to be the optimum schedule for realizing higher productivity and economics of sesame- rice- rice fallow blackgram cropping system.

OPE-37

MEDICINAL USE OF TINOSPORA CORDIFOLIA (WILLD.) MIERS EX HOOK.F.& THOMS. AND ITS QUALITATIVE ANALYSIS OF ORGANIC COMPOUND. MIERS EX HOOK.F.& THOMS. AND ITS QUALITATIVE ANALYSIS OF ORGANIC COMPOUND

zeba ali shervani,

ABSTRACT

Tinospora cordifolia is known as Giloy and Guduchi, with significant importance in the traditional medicinal plant system. It is dioeciously plant. It is mostly used in the Ayurveda system. It is Known as the Rasayanas of medicinal system of the body and protect against infection. The plant is widely used for the treatment of various diseases such as diabetes, Jaundice, fever, infection, incorporating a wide range of pharmacological properties, such as antidiabetic, immunomodulation, antioxidant, anticancer, hepatoprotective and hypoglycemic values. These properties are enhanced by the diverse compounds such as alkaloids, dierpenoids, sesquiterpenoids, phenolics, glycosides, steroids, and polysaccharides, aliphatic and other miscellaneous compounds.

OPE- 38

ADDY CULTIVATING MARGINALISED FARMERS‟ CLIMATE CHANGE PERCEPTIONS, IMPACTS AND ADAPTATION STRATEGIES IN CHANDRAPUR DISTRICT,

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ABSTRACT
The study aimed to assess paddy cultivating marginalised farmers‘ perceptions of climate change, impacts, and adaptation strategies in Chandrapur district, central India. Purposive sampling was carried out to identify 70 marginalised farmers from the study area in the year 2020. A specially designed and developed questionnaire was used as a tool to elicit the information from the respondent. From the identified sample population, the maximum number of farmers (35.71%) are illiterate and don‘t have a cell phone (57.14%). They have borrowed money to carry out agricultural activities from one or other source specifically from moneylenders (84.28%) followed by government banks (37.14%). Climate change perceptions by these farmers are well understood and clear and reported rain pattern change (85.71%) and high/low temperature (74.28%) as an important one. Crop residue burning is considered a major (94.28%) agricultural activity responsible for climate change. Impacts of climate change on agriculture, in general, is in the order of crop growth reduced > production reduction > irrigation water scarcity > soil fertility reduction > poor quality yield > late/no seed germination. Impacts on paddy cultivation, in particular, are increased insect/pest attack, yield quality deterioration, and food production reduced. Quantity of surface water decrease is reported by 87.14% respondent. The cost of insecticide/pesticide used is increased in the range of 21-40% (38.57%). Impacts of climate change on livestock are pronounced and include heatstroke (82.35%), vector-borne diseases (61.76%), production loss (50%), and death due to heatstroke (35.29%). Adaptation strategies are poorly developed with a desire for a better weather forecast (97.14%) and changing cropping patterns (74.28%). Future adaptation strategies involved an emphasis on high-yielding crop varieties, crop diversification, irrigation water use change, water storage methods, etc. The climate change-induced problems faced by these marginalised farmers are well defined and different from other farmer categories and needs a holistic approach to overcome it. Sustainable adaptation strategies emphasize on climate smart agriculture is the need of the hour to pave the way for sustainable agriculture and sustainable livelihood. This may be perhaps the first study with this aim from the region.
Keywords: Central India, Chandrapur, Climate change, Climate smart agriculture, Marginalised farmers, Paddy cultivation, Rice.

OPE 39

ECONOMIC AND AGRONOMIC IMPACT OF CLIMATE CHANGE ON *ZEA MAYS* L.

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ABSTRACT

Climate Change over the years has affected humans directly and indirectly. It has impacted human and animal health, natural resources and biodiversity as a whole. The prominent reasons being the erratic climatic conditions which results in droughts in some regions and floods in others. The interrelation between agriculture and climate change has resulted in the declining crop productivity. Yield fluctuation would affect the economy. Agriculture is an important sector in India Therefore, the economic dynamics of crop production due to climate change is of paramount importance. This study broadly examines the ways by which the heat of climate change is going to affect the agrarian economy Globally countries are facing a challenge of food security. India also needs to increase food productivity to meet the demand of its ever-increasing population and strengthen crop resilience to manage the recurring adverse effects of the inevitable climate change. Along with the traditional crops, growing C4 crops that have evolved mechanism to mitigate the effects of high temperatures and other climatic conditions that helps them to survive in extreme conditions may be advantageous for both rural and urban farmers. This review is an attempt to understand the importance of C4 plants specifically Maize as an option to mitigate the climate change impacts on the economics of a farmer in particular and nation in general.

OPE 40

USE 0F DAMAGE EGGS IN POULTRY FEED – A SOLUTION ON ECONOMICAL LOSS OF POULTRY INDUSTRIES.

V.M. Jaysingpure.

ABSTRACTS

In a pandemic of Covid - 19 ,There is a locked down in a whole country. All transportation were stopped. In such a critical condition ,in poultry industry number of damaged eggs were stocked. The life of these damaged eggs are very few days .ie 2to 3 days. Within this 2to 3 days we can utilized it, before they are rotten .when all transportation ware stop ,it is big problem, how to utilized it .There is big economical loss of poultry farmer .The present study solve this problem of poultry farmer by using damaged eggs in poultry feed. It gives best quality feed having high protein and nutrition to the poultry birds.

Key words- poultry birds, Covid19,

OPE 41

IMPLICATION OF *MORINGA OLEIFERA* FOR CLIMATE CHANGE AND FOOD SECURITY

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Abstract

Since last few decades, climate change exerts numerous direct and indirect impacts on the agriculture and food sector. Agriculture is the most vulnerable to climate change and adversely affect the economic activity and food security in several parts of the world. To deal with this hardship , agricultural sector needs to undergo profound transformation by considering the synergy between climate change adaptation capacity and mitigation opportunities offered by the sustainable crop supporting the food security. In this context, , global agriculture sector should promote to cultivate the fast growing trees like *Moringa oleifera* to build more resilient agriculture and alternative for food security. Because, almost every part of this tree i.e. leaves, roots, flowers, pods, and seeds etc. can be efficiently included in different food matrices for enrichment of its nutritional profile. Also, its rate of CO2 absorption is multifold than any general vegetation .Thereby, this plant can regulate the carbon cycle and helps to minimize the CO2 gas from the atmosphere, which has been proved as the utmost significant contributor to the Greenhouse gases .This tree shows potential of sequestering more carbon with its all parts and effectively acts as carbon sink .This miracle tree can presents itself as an easy plant for agri-business, poverty mitigation and a climate smart choice of plant to be developed and promote for the benefit of present and future generations .Therefore, its worldwide cultivation ,adaptation strategies, promotion, plan to cope and curb will support to mitigate the global impacts of food insecurity and climate change.

Key word: *Moringa oleifera* ,climate change, greenhouse gas, carbon sink ,food security

OPE 42

CLIMATE CHANGE AND AGRICULTURE

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ABSTRACT

The Agriculture has been the main occupation of Indians. About 65% of population is engaged in Agriculture. Indian Economy is also dependent on Agriculture. The climate change is the burning problem for sustaining the crops and their yield level vis-à-vis quality of crop produce. The drought, flood, cold, heat wave, frost, ice fall, soil salinity, high temperature, pest/disease incidence are the serious issue in Agriculture due to climate change. At present rainfall patter is irregular, irratic, not specific to season. The green house gasses: carbon dioxide, nitrous oxide, methane are the main causes for rise in atmospheric temperature. The concentration of these gasses in atmosphere are carbon dioxide-360ppm, methane-1700ppb, nitrous oxide-310ppb. The rise in carbon dioxide concentration, deforestation are the cause of high temperature. During last decade atmospheric temperature during summer is more than 50^0C. Cultivation of rice continuously in flood/water condition and broadcasting of nitrogenous fertilizers on rice crops are the cause of rise in methane gas. The nitrous oxide is increase due to broadcasting of urea in flood rice field, burning of crop residues, longer time exposure of manure to atmosphere etc,.

Due to climate change reduction in yield of wheat crop due terminal heat, reduced grain filling in maize due to moisture stress and reduced yield due to heavy incidence of Army worm. Heavy incidence of caterpillar on soybean reduced the crop yield. Incidence of hopper on many crops and reduced quantity and quality of produce due to heavy rainfall are specific serious concern due to climate change. It is said that if rise in Temp. by 1^0C there is reduction in yield of wheat by 4-5 M. Ton and 5-6% due to terminal heat. Climate change also adversely affecting soil health like, more soil temperature, more evapo-transpiration, deficit soil moisture, reduced microbial content, more soil salinization, more mineralization and disturbances in the soil structure, texture and finally reduced soil productivity.

By 2030 India needs 50% more food and energy and 30% more water. Climate change may aggravate water scarcity. There may be next world war for water. Shining India getting less sunshine. Adaptation and mitigation are the strategy or solution for sustaining these issues and this is not easy not sufficient. Development of climate ready crops (eg. Wheat, rice, maize, soybean, chickpea, sorghum etc.), crops may be grown in high CO_2, high Temp., less water, low soil fertility, more pest/disease incidence etc,.These crops absorb more sunlight, better root system, draught tolerant, climate resilient, thermo & photo insensitive and tolerant to important biotic/abiotic stresses.,
Keywards - gene pyramiding ,etc development, new genotypes, crops.

OPE 43

IDENTIFICATION OF THE SPECIES OF GENUS POPULUS BASED ON WOOD MICROSTRUCTURAL STUDIES

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ABSTRACT:

Poplars are among the world's fastest growing species, which are widely been utilized in agro forestry plantation in India. The medium density wood of poplar is a lot higher demanding in several Industries for making pulp, ply, match, packing cases and use as light constructional timber. The current investigation depended on the assessment of 12 wood samples of the significant species of Populus viz. P. alba, P. ciliata, P. euphratica and P. nigra from erstwhile India, to assess similarities and dissimilarities among species based on wood anatomical features. Internationally acclaimed standard laboratory procedure was utilized to recognize the qualitative characters according to the International Association of Wood Anatomists (IAWA) terminology. For the determination of the quantitative features of wood, small radial chips were macerated following Shultz method. Photomicrographs were taken for the diagnostic features of each taxon. The selected Populus species had some similar qualitative wood anatomical features like growth ring present, simple perforation plate, intervessel pits alternate, vessel ray pits are much reduced border to apparently simple, pits round to angular, simple to minutely bordered fibre pits and body ray cell characteristic all procumbent with some dissimilar qualitative characters. In addition to qualitative anatomical features, quantitative anatomical like vessel diameter and frequency, size of intervessel pits and vessel ray pits and ray frequency, height and ray width showed significant differences among species. The key was setup in the interest of the dissimilar anatomical features that incorporate both qualitative and quantitative. The current investigation helps in recognizing the four species of genus Populus dependent on wood anatomical features.

Keywords: Populus Species, IAWA, Intervessel pits, axial parenchyma, disjunctive ray parenchyma

OPE 44

PREFERRED PHYSICAL PARAMETERS OF INDUSTRIAL AGARBATTI STICKS

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ABSTRACT:

Bamboos are significant non-wood forest resources found in the forest and non-forest areas, fast-growing, renewable, versatile, and low-cost natural resources. It belongs to the family Poaceae and is an essential component of many forest ecosystems. Again, it occupies an important place in the people's diverse phases of life and culture. The incense stick, also known as ―*agarbatti*‖ in India, ―*joss stick*‖ in China, is a thin bamboo stick covered in a substance used exclusively for religious purposes in almost every home in India. The right choice of parameters of the agarbatti sticks is the primary concern of the different stakeholders of the bamboo sector to maximise the production of incense sticks. The right choice would help maximise the income of the MSME units involved in the production of agarbatti sticks. Therefore, the paper evaluates the preferred parameters of the industrially produced incense sticks. The study was carried out in the state of Tripura, one of the North-Eastern states of India, in various bamboo species *viz., Bambusa polymorpha, B. vulgaris, B. cacherensis, B. tulda, B. Balcooa, M. baccifera, Dendrocalamus asper,* and *D.ongispathus following the likert scale.* The most preferred shape of the agarbatti stick was the mechanically produced *round sticks*, while the most preferred color of the sticks is *golden yellow*. Among other parameters, the most preferred are *8 inch* length and *1.3 mm* thickness. It is recommended that the species which can produce the maximum outturn in terms of mechanical production, the preferred thickness, and size should be used as a raw material for the agarbatti industry.

***Keywords*:** Bamboo raw material, Out-turn, Incense Stick, Likert scale, Index score

OPE-45

UTILIZATION OF PINE NEEDLES AS A NOVEL SOURCE OF ALPHA-CELLULOSE IN PAPER INDUSTRY

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ABSTRACT

Nowadays, the development of cellulose based derivatives are dramatically increase the benefits which are desirable in strength of paper and useful for many other applications such as in pharmaceuticals, paper industry and many more. Environmental pressure will continue to influence research into new strength chemicals and any new legislation creates opportunities for research groups to produce bio-based products. In India, Paper Industries are facing a severe scarcity of quality fibrous raw materials, so there is a need to develop some suitable alternative raw materials. The conversion of Lignocellulosic waste materials into cellulose based derivatives would alleviate a variety of strength related issues in paper making such as providing a greener approach to manufacturing. Pinus roxburghii Sarg.needles, is a lignocellulosic biomass in nature and is responsible for the major threat for forest fires in summer season as its leaf surface has a waxy coating over it which makes it highly inflammable. By considering these facts research has been initiated at Cellulose and Paper Division of Forest Research Institute, Dehradun with an aim to utilize this waste biomass for its better utilization and to explore a new source of raw material for strength additives in paper making. This study reveals about extraction of cellulose from pine needles, finding its suitability for its application as strength additive in paper making. Chemical analysis of pine needles shows the presence of 47% α-cellulose, 20% hemicellulose, 37% lignin and 70% holocellulose. High holocellulose content showed its suitability as a novel source for cellulose extraction and its chemical modification reactions. This investigation enhances the utilization of lignocellulosic raw materials in the manufacture of new products, brings out new technologies and innovative product applications in paper making.

Keywords: Pine needles, Cellulose, Waste, Pulp industries.

OPE -46

SOCIO-ECONOMICANDCULTURALFEATURESOFGUJJARS BAKARWALSANDPAHARIES:ACOMPARATIVESTUDY(JAMMUAND KASHMIR)

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ABSTRACT

Gujjars Bakarwals and Paharies are one of the largest ethnic groups of Jammu and Kashmir UT. Gujjars and Bakarwals constitute 11.9% of the total population of the state according to 2011 census, whereas Paharies constitute 8.16% (estimated) of the total population. These ethnic groups possess mainly tribal culture and practicing transhumance activities. Socially these ethnic groups are backwards as compare to other communities of the state, following the conventional way of living in wood or mud houses besides some houses are now made up of brick. Their cultural features also differs from each other but still their lies a bit similarities between them. Except Gujjars and Paharies the culture of Bakarwals is completely tribal in nature. Gujjars and Bakarwals speak Gojri language whereas Paharies community speaks Pahari language. In Jammu and Kashmir all the three communities are mostly followers of Islam but in rest of the country these are the followers of Hinduism as well as Islam. Their major concentration lies in the districts of Rajouri, Poonch, Reasi, Doda, Kishtwar, Baramulla, Kupwara, Anantnag, and Srinagar. Agricultural and livestock activities are the main economic source of these ethnic groups. Gujjars are transhumance in nature but from the last few years they are letting transhumance activities and are transforming themselves towards Sedenterization, whereas Bakarwals is a nomadic tribe which generally practicing transhumance activities and mostly the rearers of herds of goats, sheep, buffaloes and horses and dependent on them for their daily needs for survival. These livestock are backbone of their economy. Pahari ethnic group is just like Gujjars and their customs and traditions are bit similar to each other. They were nomadic in nature but with changing time they left transhumance activities and transformed themselves towards settled agriculturist, but still some Paharies practicing transhumance activities. Transhumance practice is the biggest impediment for those who want to ensure formal education for their children. Frequent seasonal migration and difficult terrain are the biggest obstacles in the education of these ethnic groups. Due to varied climatic conditions these communities adjusted themselves to different patterns of life and adjustment. These communities face various issues which have not been addressed or even reported adequately and objectively. The political socialization of these communities is not good as compare to other communities.

Keywords: Gujjars, Bakarwals and Pahari tribe, transhumance activities, livestock, Backwardness, society, Jammu and Kashmir

OPE-47

TRANSHUMANCE ACTIVITIES OF TRIBAL IMPACTED BY CLIMATIC CHANGE IN RAJOURI DISTRICT OF JAMMU AND KASHMIR UT

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ABSTRACT

The Gujjar, Bakarwal and pahari are ethnic groups living within the Rajouri districts. Majority of them perform their nomadic activities i.e. rearing of Goats, sheep, livestock. The impact from climatic changes with respect to its seasonal movement with the livestock which disturbs from last few years. Their economy based on livestock and agriculture activities, which is shattered by the droughts, unseasonal snowfall, hailstorms, and other climatic related problems in the area. Weather is important natural factor which determine the seasonal migration in many ways. During the seasonal movement of these nomadic groups they have to cross the pirpanjal range to reach the summer pastures in the Kashmir side. It is big challenge for them to cross the pirpanjal range, which is more dangerous in term of changing weather conditions. Many time there heavy rainfall, hail storm, which ends with the loss of their cattle. In this section the attempt has been made to analyses the impact of the changing climatic conditions on the transhumance practices of tribal.

Keywords: - Pahari, seasonal migration, livestock, nomadic, Gujjar, Bakarwal,

OPE-48

EFFECT OF ENVIRONMENTAL POLLUTANT ON HISTORICAL MOVEMENT

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ABSTRACT

Today every century is facing a huge problem of environmental pollutants. Environmental pollutants are chemicals that have ended up in the environment as a result of human activity and that hazardous to health. Pollution is the key factor in the degradation of a building and movement. The negative impact of pollutant emitted in to the atmosphere on material is enormous and offerirreversible.

***Keywords*:-** Pollutants, effect, movement, environment.

OPE-49

EFFECT OF PLANTGROWTHREGULATORSANDMETHODSOF APPLICATION ON GROWTH OF CORIANDER (*CORIANDRUMSATIVUM*L.)

SP Deokar and AP Wagh

ABSTRACT

The experiment conducted in factorial randomized block design with three replication and eighteen treatment combinations. There were two factors, main factor being methods of application of PGRs *viz*. seed soaked, foliar spray and seed soaked + foliar spray and sub factor was six concentrations of PGRs *viz*. GA3 (50, 75 and 100 ppm) and CCC (200, 250 and 300 ppm) growth parameters like plant height and number of branches per plant were influenced by M3 (seed soaked + foliar spray). The treatment combination M3P3 (GA3 @ 100 ppm as seed soaked + foliar spray) and M3P6 (CCC @ 300 ppm as seed soaked + foliar spray) recorded significantly maximum result in respect of plant height and number of branches per plant,respectively.

***Keywords*:** Coriander, Cycocel, GA3, Growth, Plant growth regulators, Methods of application

OPE-50

UTILIZATION OF PLANTS IN TRADITIONAL MEDICINE AT NEWASA TAHSIL (M. S.) INDIA

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ABSTRACT

Indigenous traditional knowledge about the utility of plant resources for different purposes is in practice since long. Plants have played an important role in medicinal uses to rural human being. Though observation and survey, human being have learnt that plants promote health and well- being. The use of these medicinal plants remedies is not only cost effective but also safe and almost free from serious harmful side effects. The rural village elders, tribal and farmers have tremendous knowledge about for human health problems started thousands of years ago and still part of medicinal practices by folks of various regions of Maharashtra. Therefore, survey of medicinal plants used by rural region of Newasa tahsil people was under taken. Analysis of collected data revealed that a total number of 40 plants species belonging to 38 genera and 32 families of flowering plants are used by people for medicinal purposes.

***Keywords*:** *Herbal Medicine, Rural People, Medicinal plants, Maharashtra*

OPE 51

EFFECT OF NUTRIENTS ON BIOMASS PRODUCTION OF *CERCOSPORA TECTONAE* A LEAF SPOT PATHOGEN OF TEAK (*TECTONAGRANDIS*L.F.)

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ABSTRACT

Cercosporatectonae was a potential pathogen of ***Tectona grandis***, was isolated from diseased ***Tectona grandis*** leaves from Nashik district and used for the present study. Pathogen was grown on the Czapek-Dox liquid medium substituting or adding different carbon, nitrogen to study biomass production. The growth as dry mycelial biomass was observed on the 8th day of incubation period.

A great extent of growth variation was observed on different carbon, nitrogen. Among the carbon source, lactose shows maximum biomass while sucrose (control) with minimum biomass. From nitrogen source nickel nitrate shows maximum and sodium nitrate (control) with minimum biomass was recorded.

Keywords: *Cercosporatectonae,Tectonagrandis,*Biomass, Pathogen.

OPE-52

CONSUMER'S ATTITUDE AND PURCHASE BEHAVIORAL INTENTION TOWARDS GREEN FOOD PRODUCTS

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ABSTRACT:

In the Indian scenario recently, the market of green food products (i.e. in general terms, organically grown food products), have become widely popular (19% of FMCGs market share), specially in the metropolitan cities of India, as they are perceived to be healthier, more nutritious, better tasting than non-organic foods. But despite the rising popularity, the purchase inclination for these green food products is not in tune. It has been asserted that although the concept of green/organic food is well recognized by most of the consumers' worldwide (Roddy et al., 1996), the percentage of consumers who actually buy organic food on a regular basis is very less (Grunert, 1993; Wandel and Bugge, 1997; Roddy et al., 1996; Fotopoulos and Krystallis, 2002). Similar rationale for conducting research studies on consumer's behavioural intention can be evinced in the Indian context also.

OPE 53

J.D.SALINGER SCHARACTERPORTRAYALINHIS FICTIONAL CREATIONS :- A CRITICAL STUDY

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ABSTRACT

This paper aims at focusing on character portrayal implied by J. D. Salinger in his fictional works. Many critics of American literature tried to peep into the innermost recesses of Salinger‘s characters to assess salinger‘s art of characterization. Most of his characters are usually witty and sensitive. They are trapped between two dimensions of the world: love & ―squalor.‖ The central problem in most of his fiction is not finding a bridge between these two worlds but bringing some sort of indiscriminate love into the world of squalor: to find a haven where love can triumph and flourish. Some characters such as the young , mixed-up Holden Caulfield , adopt indiscriminate love to aid them in their journey through the world of squalor, while others, such as Seymour Glass, achieve a sort of love , or satori , and are destroyed , in Seymour‘s case by a bullet through his head. Each of these characters is metropolitan in outlook and situation and is introverted: Their battles are private wars of spirit , not outward conflicts with society The characters‘ minds struggle to make sense of the dichotomy between love and squalor, often reaching a quiet peace and transcending their situation through a small act. They are also aware of the teenage feelings what they feel in themselves.

Jerome David Salinger, the author of one of the enduring classics of American literature, The Catcher in the Rye, is as famous for his flight from fame as for the one novel and thirteen short fictions that he produced before retreating into "seclusion‖ in 1953 on the 90-acre New England estate where he died on 27 January, 2010 aged 91. He gave voice to the rejection of materialism and regimentation that attracted the generation growing up in the United States after World War II. The Catcher in the Rye is one of the most widely read and influential postwar novels, and it entered the culture as a statement of youth‘s view of the complex world.

Keywards Holden Caulfield, Salinger's petulant, yearning .

OPE 54

PHARMACOGNOSTICAL AND PHYTOCHEMICAL SCREENING OF *BAUHINIA RACEMOSA* IN DIFFERENT SOLVENT EXTRACT

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ABSTRACT:

Since prehistorictimes, people investigate the nature particularly medicinal plants in search of new drugs. Medicinal plants are used by 80% of the world population for their essential health needs.The medicinal plants are very rich source of numerous pharmacologically active molecules. The scientists are currently focusing on the Phytochemicals to treat numerous ailments affecting the mankind. *Bauhinia racemosa*belonging to family Caesalpiniaceaeis widely used as religious purpose or as traditional medicine for treating various ailments. It has anti- inflammatory, antifungal, antimicrobial and antioxidant properties. The phytochemical analysis of Ethanolic, Hydroaclholic and petroleum ether extract was done.The Loss on drying ash value testing was done and which signify the purity and quality of drug and nature of phytocompounds present in the extract.The powdered of *Bauhinia racemosa* was extracted with different solventin the Soxhlet extractor or macerated. The residue yielded a greenish brown sticky mass obtained. The preliminary phytochemical analysis of the different extract showed the presence of tannins, alkaloids, flavonoids, glycosides and phenolic compounds.

***Keywords*:** Pharmacognostical study, extraction, phytochemical screening, total tannin content

OPE 55

BIODIESEL PRODUCTION FROM SOIL FUNGI

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ABSTACT

Concern for the increase in energy demand and the depletion of fossil fuel reserves as resulted in a rapid rise in crude oil prices, and therefore, securing alternative source of energy is urgently required. Soil sample was collected from nearby garbage area and the fungi with fast growth rate were isolated and again cultivated as pure culture on PDA medium. Identification of isolated fungal strain was carried out by observing the macroscopic and microscopic character of the fungi. Soxhlet extraction by using hexane was carried out for lipid extraction from the dried fungi sample. Among the 6 strain of fungi which were purer cultured for and used for lipid extraction, Strain F had the high amount of lipid content and high growth rate as compared to other strains.

Keyword:- Soxlet extraction, lipid extraction

OPE 56

CURRENT STATUS OF MACROBENTHOS DIVERSITY IN RELATION TO WATER QUALITY OF ASAN WETLAND

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ABSTRACT

Asan reservoir is a freshwater wetland located at the confluence point of Asan river and Yamuna Hydel canal adjacent to the Dhalipur village in Dehradun district of Uttarakhand. Incessant increase in natural and anthropogenic pressure leads the increase in water contamination level, which in turn deviated the water quality also make threat to the aquatic biodiversity and their distribution. The main aim of the present research work was to assessed the current status macrobenthos diversity in relation to important water quality parameters of Asan wetland. Macrobenthos species and major physicochemical parameters was collected from selected sampling zones of the Asan wetland for the period of one year during 2020-2021. Status, abundance and distribution of macrobenthos community was assessed with PAST software (version 3.0). The result of current research study evidently indicated that Asan wetland offers the natural habitation of three groups of macrobenthos included Annelida, Mollusca and Arthopoda. The species-wise ascendancy was in order of Annelida (9 genera) followed by Mollusca (6 genera) and Arthopoda(5 genera) identified from all selected sampling zones and amongst these Annelida was dominated both in qualitative and quantitative dominant. Some important habitat factors i.e. water velocity, water temperature, DO and BOD subsidized as main significant biological factors for macrobenthos species richness and their distribution in the Asan wetland.

***Keywords*:** Macrobenthos diversity, habitat ecology, Asan wetland, abundance, water quality.

OPE 57

DIVERSITY OF FRESH WATER ZOOPLANKTON AND PHYTOPLANKTON FROM

ARJUNSAGAR DAM,KALWAN NASHIK.(MAHARASHTRA)

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ABSTRACT

Water body contains a variety of Zooplankton and Phytoplankton.These organisms by their adaptability are present in all possible environmental condition and are used as an indicator of pollution. Phytoplankton community, structure, composition and species diversity in aquatic ecosystem are determined by several Physico-chemical parameters. Spatial and temporal variations in phytoplankton distribution are widely affected by the hydrochemical and physical factors. The influence of these factors on phytoplankton community alters species composition and their diversity in the marine ecosystem. Zooplanktondiversity is one of the most important ecological parameter in water quality assessment the biodiversity of Zooplankton in water bodies shows correlation with reference to their Physico-chemical factors shows, the attempt has been to evaluate the diversity of Zooplankton at Arjunsagar dam, Nashik.

Keywords: Zooplankton, Phytoplankton, Pollution,Physico-chemical Parameter,Indicatorsetc.

OPE 58

GEOLOGIC CARBON SEQUESTRATION: A WAY TO MITIGATE GLOBAL WARMING

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ABSTRACT:

Many activities of human life have changed the carbon cycle by increasing the amount of CO_2 produced. For example, power generating facilities, petrochemical plants, cars and trucks, industrial processes, and agricultural practices all produce CO_2 and release it into the environment. This increased amount of carbon dioxide produces green house effect which causes global warming. This CO_2 is sequestered naturally in oceans, plants, and soils which reduce global warming, but an increasing amount is making its way into the atmosphere. This CO_2 is either removed from the atmosphere or diverted from emission sources and stored in the ocean, terrestrial environments and geologic formations is called carbon sequestration. One of the carbon sequestrations is Geologic carbon sequestration in which carbon dioxide (CO_2) is trapped in the form of liquid and buried in deep geologic formations to prevent its release to the atmosphere and contribution to global warming. In this method CO_2 released from above processes is compressed to a fluid state, and injected deep underground into permeable and porous geologic strata. The technology for sequestering CO_2 is still being developed, but very few industry running carbon sequestration projects worldwide. For geologic sequestration places in India are basalt formations including inter bedded sedimentary beds, deep saline aquifers, unmineable coal seams. CO_2 storage in basalts and underlying sedimentary beds is best option. In Basalt rock, ions of sodium, calcium and iron consists of aluminum silicate containing, which combine with CO_2 to form carbonate minerals. This isolates CO_2 from the environment. The climate change and environmental conservation is the main issue of the world. The CO_2 storage in geologic form is increasingly being considered as a mitigation step of global warming. This manuscript describes processes for geological carbon sequestration as a step for mitigation of global warming.

***Keywords*:** Carbon sequestration, global warming, geological carbon sequestration, Basalt sequestration, Basins.

OPE 59

IMPACT OF CLIMATE CHANGE ON LAKES OF RAJASTHAN

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ABSTRACT

Climate change is one of the greatest global challenge which through a multitude of impacts poses a risk to our ecology, economy and society. Anthropogenic activities like burning of fossil fuels and deforestation leads to rise in atmospheric carbon dioxide and other greenhouse gases and consequential global warming. Being the largest state, Rajasthan falls in areas of greatest climatic sensitivity, maximum vulnerability and lowest adaptive capacity. Rajasthan has only about 1% of country‘s water resources (TERI 2011) and the average rainfall in the state is 574 mm as compared to the all India average of 1100 mm. State witnesses great peculiarities in temperature and rainfall pattern due to climatic changes and these conditions are likely to have catastrophic effect on already fragile water resource system of the state. Earlier studies indicated that evaporation accounts for over two-third increase in evapotranspiration for the state of Rajasthan and it has identified as one of the key impacts on water resources due to climatic change. Water loss from the surface water bodies in hot and arid regions, changes in air temperature and rainfall have direct effect on the physical, chemical and biological characteristics of lakes and indirectly they also modify the surrounding water shed either through shift in water flow pathways, landscape withering, catchment erosion, soil properties and vegetation.

OPE 60

COLLECTION PRACTICES OF HIMALAYAN MEDICINAL PLANTS (NARDOSTACHYS JATAMANSI): ANCIENT, AYURVEDIC, TRADITIONAL AND PRESENT APPLICATION

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ABSTRACT

Nardostachys jatamansi from the major natural resources base of the Indian indigenous health care tradition, the medicinal value of drug plant is due to the presence of some chemical substances in the plant tissues which produce a definite physiological action on living biological body. Jatamansi plants synthesize hundreds of chemical compounds for functions including defense against insects, fungi, diseases, and herbivorous mammals. Due to the global popularity of Ayurveda, there is a constant increase in demand for herbal drugs in the last few decades thus exerting huge pressure on natural resources. According to modern science, drugs possess highest potential during its collection period. The climate temperature, soil conditions, rainfall, duration of daylight, altitude, methods of cultivation, collection from the wild area, effect of lunar cycle, and methods of collection, processing, and storage have an impact on the secondary metabolites of the plant ultimately which affect the therapeutic efficiency of the drug.

OPE 61

SOME REPRODUCTIVE ASPECTS AND BIOCHEMICAL CONTENT IN FRESHWATER CRAB, *BARYTELPHUSA GUERINI*

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ABSTRACT:

The morphological changes in gonads were studied to assess the reproductive cycle of freshwater crab, *Barytelphusa guerini.* Studies on the seasonal variation in the biochemical content of gonads and hepatopancreas of, *Barytelphusa guerini* a locally available freshwater crab, of Shirsatwadi Lake were conducted for a period of one year. The gonad index values of *Barytelphusa guerini* showed that it is annual breeder. The biochemical content in different tissues was studied during different reproductive stages. Study showed that during maturation, biochemical content increased in the gonads and decreased in hepatopancreas. During preparatory phase values were higher in gonad and hepatopancreas. Remarkable variation in the biochemical content of different tissues has been observed during the study period. Changes in the biochemical content in all the tissues were observed to be statistically significant ($P<0.05$).

Keywords: *Barytelphusa guerini*, reproductive cycle, biochemical content, gonads, hepatopancreas.

OPE 62

SUSTAINABLE AGRICULTURE FOR COMBATING GLOBAL HUNGER

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ABSTRACT
The paper deals the issues of food insecurity, hunger, undernutrition, agriculture production, sustainable farming, environmental and regional issues. There are about 690 million people facing situation of chronic hunger and 135 million people gone through the crisis levels, or alarming condition of food insecurity. As per global hunger index about one-third countries in the world are facing under serious or alarming situation. There are more than 17 per cent countries of the world have been overcome from extreme alarming situation since 2012, it could be assessed as a positive sign; but pandemic reinforced the problem of hunger and undernutrition. The outbreak of COVID-19 has increased risk of global poverty from 26 per cent in 2019 (before pandemic) to 59 per cent in 2020. Food system also faced the loss of jobs (about 35 per cent) and livelihoods (about 34 per cent) of the people engaged in this sector. Global data reflects that agriculture sustainability index is improving, but we have to reduce food loss and waste to reduce food insecurity and associated problems as well as for sustainability of natural resources.
***Keywords*:** Food Habits, Food Security, Global Poverty, Undernutrition.

OPE-63

ANTITUMOR PROMOTING ACTIVITY OF INDOLE-3-CARBINOL IN MOUSE SKIN CARCINOGENESIS

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ABSTRACT

There has been growing interest in recent years in the potential of brassica vegetables(cabbage,cauliflower,Brussels sprouts etc) as vectors for the introduction of ant carcinogenic compounds in the diet. Indole-3- Carbinol , a major indole metabolite present in the cruciferous vegetables, has been found to inhibit various rodent tumors when administered prior to or during carcinogen exposure.In this study ,the antitumor promoting potential of indole-3-carbinolwas studied in a two stage mouse skin model of carcinogenesis.The animals were initiated with a single subcarcinogenic dose ofDMBA.After one week, 250 mu g of indole-3-carbinol was applied topically to each animal prior to promotionwith 5mu g TPA twice per week.Tumor development was significantly inhibited in indole-3-carbinol supplemented animals in term of cumulative numbers of tumors and average tumors per mouse. About 44% of male and 29% of female mice remained tumor free in thisgroup at the end of the experiment. A significant delay in the tumor induction time was also observedin indole-3-carbinol supplemented animals. This evidence suggests that indole-3-carbinol in the manner and dose given, inhibits the development of tumors in the two stage mouse skin model of carcinogenesis.

Keywords: Mouse Skin; Tumor promoter, Tumor initiator, Indole -3-Carbinol

OPE 64

DETECTION OF WATER POLLUTION INDICATORS AND OTHER MULTIDRUG RESISTANT PATHOGENIC BACTERIA IN THE DRINKING WATER SOURCES OF ALAPPUZHA DISTRICT AFTER FLOOD- A MAJOR THREAT

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ABSTARCT

Beginning on -15 August 2018, severe floodaffected Kerala, due to unusual high rainfall during the monsoon season. It was the worst flood in Kerala in nearly a century. The flood affected most of the drinking water sources of all affected places. The major source of pollution is the flood water which carried the sewage and deposited in drinking water sources. This work aimed for the detection, isolation and antibiotic sensitivity analysis of water pollution indicating coli forms and other multi drug resistant pathogenic bacteria from the drinking water sources of different Panchayath of Chengannur, Alappuzha District of Kerala after flood. Well Water samples collected from homes were evaluated for the presence of faecal coli forms by most probale number technique. The total number of colonies were detected by standard plate count method. Antibiotic resistance pattern of the isolates were studied by Kirbey Bauer agar disc and well diffusion method. The result indicated that most of the water bodies were polluted with faecal coli forms and other antibiotic resistant pathogens. *E.coli, Streptococcus, Klebsiella* were isolated from the drinking water sources of which some strains were found multidrug resistant.Present study showed a notable increase in the total coli form bacteria inthe well water after flood. Antibiotic resistant strains were observed from the water sample collected from various sites and this is alarming and serious threat to the human and animal inhabitants. Based on the results of analysis, it is suggested that detailed routine analysis of the drinking water sources, storage tanks and pipe lines and strict monitoring and awareness may be carried out for the public to access safe water for drinking and house hold uses.

Keywords: Bacteria, coli forms, multidrug resistant, indicator organisms, water pollution.

OPE-65

HUMAN-PEAFOWL CONFLICT AND MITIGATION MEASURES IN MUNDUR GRAMA PANCHAYAT, PALAKKAD, KERALA

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ABSTRACT

The Indian Peafowl (*Pavo cristatus*) is native to Indian subcontinent, which belongs to Least Concern (LC) category by IUCN and is protected under Schedule I of Indian Wildlife Protection Act. A short study was conducted to understand I) the density and distribution of Indian Peafowl, ii) to assess the crop damages by Indian Peafowl and iii) to develop mitigation measures for human-peafowl conflict in Mundur Grama Panchayat, Palakkad, Kerala, India. The density and distribution of Indian Peafowl were assessed using line transect and point count methods. Consumption of crops and damages offered by Indian Peafowl was observed by direct observation. Questionnaire survey was conducted with land owners to know about the economic loss of crops by wild species. About 221 individuals of Indian Peafowls were recorded in the study area during the study period. The population of Indian Peafowl is increasing rapidly and is distributed throughout the study area. Crop loss due to a variety of wild species were recorded in the study area. Indian Peafowl is the bird species which causes great crop damages among them. Even though farmers concerns about crop loss by Indian Peafowl, no precautions which negatively affect

Keywards -Ignoring,problem,crop

OPE-66

CLIMATE CHANGE AND ITS IMPACT ON FORESTS AND WILDLIFE.

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ABSTRACT:
Growth in population is leading to heavy industrial development and urbanization, which in turn is leading to emission of green- house gases. Green -house gases are prime reason for global warming and climate change. This climate change has triggered tremendous effects on man, environment and biodiversity. The current paper focuses on the major impacts of climate change on forest and wildlife. Threats like forest fires, growth of invasive species, storms and cyclone, loss of productivity are very common these days. Alternatively, it's leading to huge impact on wildlife. Less availability of food, water, unfavorable climatic conditions, high temperature, etc. are some major problems faced by wild animals and birds in the forest. In addition to infrastructural development, roads, highways, railways, dams, fragmentation of forests, wild animals are subjected to adverse effect of climate change. This is a big threat to the animals and plants which are threatened and endangered, hence biodiversity is at risk. Population control, reduction in green - house gases emission, controlling vehicular pollution and regulating modern lifestyle are key factors which can combat the problem of global warming and climate change. Strict and stringent laws and implementation of environmental ethics by people are essential elements. Improving and maintaining adequate forest cover is not only required for conservation of wildlife but also for better maintenance of ecological balance.
***Keywords*:** Global warming, climate change, forest ecosystem, wildlife, conservation.

OPE 67

SYNTHESIS AND CHARACTERIZATION OF ZINC OXIDE THIN FILMS FOR GAS SENSOR APPLICATIONS

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ABSTRACT:

Zinc oxide (ZnO) thin films were deposited onto glass substrates by chemical bath deposition technique. Zinc acetate is used as a source of zinc, and different proportions of ammonia solution are added and well mixed. The growth of zinc oxide films in bath solutions is taken place at 80°C. Surface investigations carried out by Atomic Force Microscopy (AFM) and X-ray Diffraction (XRD). Scanning electron microscopy (SEM) is used as the observation of surface morphology. According to UV / visible light (UV / Vis) spectrometer measurements given energy gaps (Eg), which are about 3.0 to 3.2eV. The gas sensing characteristics of these films are strongly influenced by surface morphology. Thus correlating the optical and surface morphology study the material is useful for gas sensing applications.

Keywords: Zinc oxide, SEM, Gas Sensor

OPE-68

EFFECTS OF CHANGE IN ENVIRONMENT ON SOCIETY AND HUMAN LIFE

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ABSTRACT:
The human life is largely dependent on environment. All the human activities and behaviours
have some or other connection to the environment. Any change in environment may affect our society and the effect visible in various things such as social, cultural and natural. The major effect of the environment change is human health including physical change, behavioural change and also psychological and economic change. The environment change may leave its adverse effects on human life. The environment change has resulted in leaving its effect on human health. The changes in eco system causes several health issues. It has drastically affected the human life. One can observe that birds and animals have tendency to adjust themselves to the changes in environment. However, human beings are severely affected by these changes. No doubt, the environment change is a natural phenomenon but human beings are also largely responsible for any such changes and subsequent calamities which happen due these changes. Various environmental changes such as air pollution, water pollution, wildfires and heat waves have significantly affected human life and human health in general. According to a report of WHO, about 1,50,000.00 people were being killed by various issues related to the environment change every year which is a grave concern. The human beings are largely responsible for such calamities. Most of the calamities happened in recent times are largely because of human interference in environment. Environment is always friendly with human beings.In fact, the whole of human life as well as animal life is dependent on environment. Any attempts to endanger this environment may cause disasters for the human beings and ultimately human life itself. Unfortunately, human beings are not ready to learn the lesson from their previous mistakes which may cause the ultimate doom of the whole human life. This research paper is an attempt to find out various effects of environment change on society and speciallyon human beings.

Keywords: *environment, society, human life, pollution, calamities, climate, nature,behavior*

OPE 69

STUDIES ON SOME PHYSICOCHEMICAL PROPERTIES AND HEAVY METAL FROM SEDIMENTS AND THE LEAVES OF *XYLOCARPUS GRANATUM* KOENIG FROM REVADANDA AND JAIGAD ESTUARY OF MAHARASHTRA COAST (INDIA)

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ABSTRACT:

Mangroves are commonly grown the intertidal zone and border lines of fresh water and marine water. The physicochemical aspects of soil and quantitative estimation of heavy metal from two sampling sites from Maharashtra state was done in the present study. Physical parameter like pH, and electric conductivity, organic matter and chemical parameters were measured. Six heavy metals were quantitatively estimated. Their presence in both soil and plant sample indicates that, mangroves acts as a sink of heavy metals in the coastal region Concentration of heavy metal is remarkable in the plant material of Revadanda estuary. Present investigation suggests that, *Xylocarpus granatum* can be considered as potential accumulator for the heavy metal like lead.

Keywords: Heavy metals, mangroves, soil, Bioaccumulation.

OPE-70

CLIMATE VARIABILITY, VULNERABILITY AND RESULTANT URBAN CLIMATE CHANGE IMPACT ASSESSMENT IN THE METROPOLITAN CITIES OF PUNE, SURAT AND JAIPUR: A COMPARATIVE ANALYSIS

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ABSTRACT

We live in an urban planet with a rapidly growing number of major cities particularly in the tropical world. As there is unprecedentedly high urbanization, the phenomenon of urban climate change is prominent in the major cities of the tropical countries. Recent trends of urbanization depict a massive urban growth particularly in the Asian developing countries. Indian Urbanization is alarmingly top-heavy. It has an evidence of over 100 million population in 10 major cities out of 10,000 urban centres today. There is a skewed urbanization in favour of large cities. Medium and small cities are growing only as a trickle down effect of the economy. Hence, India's 10 major cities comprise nearly 25 percent of the total urban population. Thus, the metropolitan and megacities are experiencing climatic instability and weather uncertainties. Urban centres have high intensity industrial, commercial and transportation functions along with high density residential areas. Resultantly, there is growing congestion with spurious and haphazard growth. Indian cities account for over 70 per cent of the greenhouse gas emissions particularly CO_2 emissions. Consequently, rapid urbanization is the root cause of global climate change. Anthropogenic emissions have largely aggravated the climate change induced environmental hazards. Thus, Climate change is characterized with the challenges of uncertainty, unpredictability and extremities.This paper attempts to assess the impact of climate change of the metropolitan cities of Pune, Surat and Jaipur on the urban economy, energy demand, and comfort level of inhabitants thereby identifying the problems of urban climate change, its environmental and livelihood challenges and the remedial measures to mitigate its intensity.

Keywords:*Urban Climate Change, Urbanization, Weather Extremities, Environmental hazards, Livelihood.*

OPE 71

DEVELOPMENT OF IRON AND FIBER RICH COOKIES

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ABSTRACT
Bakery Products like biscuits, cookies, bread, rolls, muffins, etc are highly consumed in India. Cookies are usually small, flat and sweet and there are various types like drop cookies, meringue cookies, Bar cookies, Sponge cookies.Iron fiber rich cookies are made from Oats and Aserio seeds. Aserio seeds are rich in iron, protein, calcium etc. Value for Aserio seeds per 100gm are Energy-30kcal, Iron-1.3mg, Carbohydrates-5.5gm, Calcium-81mg. It has high medicinal value which cures anemia, improves lung function etc. Oats is major sources of Beta –Glucan-the soluble fiber fractions, recognized as the main functional component of cereal fibers.Oats are rich in total lipids and also contain large proportion of unsaturated fatty acids.The Formulation was baked at 150ºC for 12-15 minutes in the OTG Oven with air circulation. The moisture content of cookies was measured using Hot Air Oven Method(4-5%). Thecolour of both sides of cookies was measured using Hunter's Lab ColourAnalyser. The study indicates that the Oats and Aserio seeds could be used in ready-to-eat bakery cookies as a source of iron and Dietary fibers.

***Keywords*:**Aserio seeds, Oats, Beta-Glucan, Medicinal, Baking

OPE 72

PADDY CULTIVATING MARGINALISED FARMERS‟ CLIMATE CHANGE PERCEPTIONS, IMPACTS AND ADAPTATION STRATEGIES IN CHANDRAPUR DISTRICT, CENTRAL INDIA

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ABSTRACT

The study aimed to assess paddy cultivating marginalised farmers‘ perceptions of climate change, impacts, and adaptation strategies in Chandrapur district, central India. Purposive sampling was carried out to identify 70 marginalised farmers from the study area in the year 2020. A specially designed and developed questionnaire was used as a tool to elicit the information from the respondent. From the identified sample population, the maximum number of farmers (35.71%) are illiterate and don‘t have a cell phone (57.14%). They have borrowed money to carry out agricultural activities from one or other source specifically from moneylenders (84.28%) followed by government banks (37.14%). Climate change perceptions by these farmers are well understood and clear and reported rain pattern change (85.71%) and high/low temperature (74.28%) as an important one. Crop residue burning is considered a major (94.28%) agricultural activity responsible for climate change. Impacts of climate change on agriculture, in general, is in the order of crop growth reduced > production reduction > irrigation water scarcity > soil fertility reduction > poor quality yield > late/no seed germination. Impacts on paddy cultivation, in particular,areincreased insect/pest attack, yield quality deterioration, and food production reduced. Quantity of surface water decrease is reported by 87.14% respondent. The cost of insecticide/pesticide used is increased in the range of 21-40% (38.57%). Impacts of climate change on livestock are pronounced and include heatstroke (82.35%), vector-borne diseases (61.76%), production loss (50%), and death due to heatstroke (35.29%). Adaptation strategies are poorly developed with a desire forabetter weather forecast (97.14%) and changing cropping patterns (74.28%). Future adaptation strategies involved an emphasis on high-yielding crop varieties, crop diversification, irrigation water use change, water storage methods, etc. The climate change- inducedproblems faced by thesemarginalised farmers are well defined and different from other farmer categories and needs a holistic approach to overcome it. Sustainable adaptation strategies emphasizeon climate smart agriculture is the need of the hour to pave the way for sustainable agriculture and sustainable livelihood. This may be perhaps the first study with this aim from the region.

Keywords:Central India, Chandrapur, Climate change, Climate smart agriculture, Marginalised farmers, Paddy cultivation, Rice.

OPE 73

METHANE EMISSION FROM BUFFALO IN THE PLAIN AND HILLY REGION OF NEPAL

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ABSTRACT

Livestock constitutes an integral component of the Nepalese agricultural sector. Methane (CH_4) emission from livestock is confined to enteric fermentation and manure management. This study presents the first estimate of CH_4emissions from buffalo in Nepal using country-specific emissions factors (EFs). The study was carried out using the IPCC Tier 2 methodology. Morphological and feed characteristics data of buffalo were collected from field surveys. Buffalo Adult Male (BAM) had the highest body weight ranging from 452±50 kg in the Plain region to 437±47 in the Hill region. Similarly, the weight of Buffalo Calf (BC) ranged from 91±4 kg in the Plain region to 77±5 kg in the Hill region. For different age groups of buffalo, enteric methane EFs ranged from 19±4 to 71±8 kg CH_4head^{-1} year^{-1} and manure methane emission factors ranged from 1±0.2 to 4.7±0.6 kg CH_4head^{-1} year^{-1}. The estimated enteric and manure methane EFs of buffalo in the Plain and Hill region was not statistically different ($p>0.05$). Net CH_4 flux from enteric fermentation was 218.4 Gg year^{-1}and manure management was 14.29Gg year^{-1}.So; the total CH_4flux from buffalo in Nepal was 232.22 Gg year^{-1}.

Keywords: Buffalo, morphological characters, greenhouse gas, emission factor

OPE 74

EFFECT OF FOOD PROCESSING INDUSTRY ON ENVIRONMENT

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ABSTRACT
Developing countries like India; it is common to site industries without environmental impact assessment. In this study the impacts of two food processing industries on land use and land capability, noise and vibration, environmentally sensitive areas and visual quality as environmental elements were investigated. The impacts of the industries on land use and land capability, noise and vibration, environmentally sensitive areas and visual quality included: displacement of agricultural production, quarrying activity and fishermen; loss of forestry and pasture lands; cracks on buildings near or adjacent to the industries due to vibrations from heavy machines; noise pollution from processing machines leading to hearing loss/impairment; reduced shell-fish yield; increased commercial and social activities; and distortion of visual content and coherence. The need for environmental impact auditing and the importance of impact auditing as a project management tool were highlighted. It was concluded that the food processing industries do have positive and negative impacts on the environment and recommendations towards alleviating negative impacts were made.
Keywords: Food processing, pollution, environment,

OPE-75

A FORMULATION AND NUTRITIONAL EVALUATION OF SUPPLEMENTARY FOOD(PANJIRI)

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BSTRACT

Supplementary foods were formulated from locally available foods such as wheat flour, soybean flour and chick pea flour using household technologies like blending and roasting. The proximate composition of product used for preparation of supplementary food fortified with 10% skimmed milk powder contained higher amount of protein and other nutrients. They contained proteins (16.2 to 21.1%), fat (1.9 to 4.5%), fiber (1.28 to 1.78%), ash (0.7 to 1.40%) and carbohydrates (67.66 to 77.2%). Also showed that soy flour / chickpea flour alone or in combination, both increased the amount of protein significantly. Soy flour fortification was considered the best because it is rich in protein with good product acceptability. The total energy expressed in terms of Kcal per 100 g of product varied from 350.7 to 395.8. The various minerals viz., calcium, phosphorus and iron were found to increase on supplementation 10% skimmed milk powder. Different kinds of products were made with and without fortification of 10% skimmed milk powder and subjected to sensory evaluation for various sensory attributes. The present investigation was carried out to formulate a product for poor people to fulfill their nutritional requirements at lower cost

OPE-76

ROLE OF EXOGENOUSLY APPLIED STRESS PROTECTANTS IN PLANTS UNDER FLUORIDE STRESS

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ABSTRACT

In recent year, increasing level of fluoride (F^-) in water, soil and air has become a most toxic for living organisms including human, microbes and plants. Excess F^- increases toxicity through fluorosis disease in human and cattle particularly in endemic areas. In plants, accumulation of F^- causes chlorosis, oxidative stress, inhibition of water and mineral uptake, enzymes activities, seed germination, growth and yield by changing the hormonal level and gene expression. Some plants have innate ability for survival in endemic areas by maintaining low level of intra cellular F^-, high level of antioxidants, osmolytes, stress proteins and hormones.

Exogenously applied various stress protectants such as plant growth regulators (PGRs), mineral chemicals and other compounds mitigate the toxicity by regulating various metabolic pathways.Gibberellic acid 3 (GA), Salicylic acid, spermidine and spermine (polyamines), melatonin (Mel),glycine betaine (cytosolute) and sodium metasilicate (silicon) play protective roles in plants under F^- stress. Binding of F^- with Ca (a signalling molecule) reduces its level in cell and alters different signalling pathways. Ca compounds viz $Ca(OH)_2$, $Ca(NO_3)_2$, and $CaCl_2$ play important role in the protection by reducing F^- uptake and improving metabolic pathways through gene expression. Use of silver nanoparticle (AgNP) and silicon nanoparticles (SiNP) nanotechnology, is effective approach for reduction of toxicity F^- in plants. These stress protectants improve seed germination, growth, defense system (osmolytes, antioxidants, glyoxalase) through gene expression, advanced study should be focused on metabolic pathways and molecular mechanisms of the tolerance.

***Keywords*:**Antioxidants; Cytosolutes, Fluoride accumulation; Growth; Hormones..

OPE-77

SOLUTE- SOLVENT INTERACTIONS: H_2SO_4 + H_2O SYSTEM AT 308.15 K

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ABSTRACT

The densities (ρ) and apparent molar volumes (Φ_v) of H_2SO_4 + H_2O system in the concentration range 1.0 moldm^{-3} to 9.0 moldm^{-3} were determined at 308.15 K. The values of Φ_v for all the concentration range was found to be positive which shows that there exist strong solute- solvent interactions in the present system. Further Masson's equation have been taken into consideration in which the large positive value (20.6cm^3 mol^{-1}) of limiting apparent molar volume (Φ_v^0) confirms the above nature of interactions. The present study can be useful in the field of green chemistry as we can predict the nature of interactions taking place in between the components forming the solution.

OPE 78

NOVEL SYNTHESIS, STRUCTURAL AND MICROBIOLOGICAL INVESTIGATIONS ON COMPLEXES OF TRANSITION METAL WITH THIOSEMICARBAZONE LIGANDS

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ABSTRACT

The Present study describes the synthesis, spectral and microbiological investigations on the complexes of Nickel(II) aryl thiosemicarbazones having the general Composition $[Ni(L1)_2Cl_2]$, $[Ni(L2)_2Cl_2]$.All the synthesized thiosemicarbazone ligands and their Ni(II) complexes have been characterised by elemental analysis, melting point determination, FTIR, UV-visible spectral analysis. The synthesized ligands and their new metal Complexes have been screened in vitro for antibacterial activity against *Escherichia coli*, *S. aureus* and *Bacillus subtilis* bacteria.

Keywords: Microwave, Thiosemicarbazone, Antibacterial.

OPE 79

ANALYSIS OF FLUORIDE CONTENT OF GROUND WATER IN AND AROUND INDUSTRIAL AREAS OF NAGPUR

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ABSTRACT

Nagpur is one of the major cities of central India and the second capital of Maharashtra. Natural water bodies such as river Kanhan, Ambajhari and Gorewada tank are the ready sources to meet the water demands of the city. The requirement of water has been rising due to growth in population, migration and commercial activities. Groundwater remains the only option to rely on for such a growing urbanpopulation.

Anthropogenic activities cause pollution of the surface and groundwater. Quality of water for public health is a major concern need to be examined.

In the present study, critical analysis and assessment of the groundwater in and around the industrial areas of Nagpur have been taken up to evaluate its suitability for domestic purpose. Twelve groundwater samples were collected during pre and post monsoon season in three consecutive years from 2010 to 2012 from industrial areas of Kalmeshwar, Butibori and Hingna covering open wells and tube wells. The obtained results were compared with the Drinking Water Standards to know the potability of water.

In certain areas it was observed that the fluoride levels of groundwater are much higher than the normal standards. The present study reveals that the highest value of fluoride content was found to be 7.42 mg/l in summer 2011 near Ankush industry at Kalmeshwar and the lowest was noted 0.51 mg/l in winter 2011 at Digdoh, Hingna.

Keywords: Assessment, fluoride, groundwater, industrial areas, Nagpur.

OPE 80

ENVIRONMENTAL RISKS OF NANOMATERIALS

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ABSTRACT

Nanomaterials are generally defined as materials that are less than 100nm (<100nm) on at least one dimension. Nanomaterials can be 3 dimension (3D) particles of any shape or size, they can be thin films (2D) like or fine rods (1D) type. Engineered nanomaterials are almost tenth the size of human cell and are widely being used in almost every sector of human life including electronics, engineering, medicines, space, etc. Their behaviour and nature basically depends upon their small size, which translates into a large surface area, and this provides greater opportunity to interact and integrate with the environment Thus toxicity varies directly with the size.Nowadays nanomaterials are considered as emerging environmental pollutants and contaminants. Physiochemicaland biological transformations makes them vulnerable to interact with environmental pollutants, which can cause high risk to the biodiversity. Fullerenes and carbon nanotubes (CNTs) are used in plastics, batteries, fuel cells, water purifiers, sensors, and in many other fields and are found to be highly hazardous to the human health and habitat. Another class of nanomaterials composed of metal oxides like TiO_2, ZnO, CrO_2, MoO_2, Bi_2O_3etc.which have great application in cosmetics and automobile industry are found to be highly dangerous for the environment. However, a number of methods like chromatography,spectroscopy,centrifugation, filtrationare available to determine their concentration, size distribution and characterisation in the environment with the help of which their emission can be detected and controlled. Today we are at the optimal level to study the impact of nanomaterials on the human health and environment. The proliferation of nanotechnology has evoked discussions over the safety of these materials to the biodiversity and environment.

Keywords:*nanomaterials, environment, potential risk, characterisation, analysis*

OPE 81

IMPORTANCE OF PHYTOCHEMICALS IN SOME INDIAN MEDICINAL PLANTS

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ABSTRACT

Phytochemicals are naturally occurring substances which are present in the plants and shows biological and therapeutic significance by playing very important role in the plants metabolism to protect themselves from various kind of pathogens. The secretion of these compounds varies from plant to plant and it also vary in quantity in different kind of plants. Sometimes they can be harmful and sometimes they can be very useful. The drugs from plants are easily available, less expensive, very efficient and rarely have any side effect. Even in this modern era, in most of the regions, traditional medicines are made from medicinal plants. These medicines prepared from plants are Eco-friendly, Bio-friendly and also requires relatively very less quantity of chemicals. A latest report by World Health Organization (WHO) has estimated that 80% of the world's population depends on traditional medicine for their treatments.

OPE 82

MICROWAVE ASSISTED SYNTHESIS SPECTRAL, CHARACTERIZATION AND ANTIBACTERIALSTUDY ON COMPLEXES OF Mn(II) WITH PYRIMIDINE DERIVATIVE LIGANDS

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ABSTRACT
This study describes the synthesis, spectral and antimicrobial investigations on the complexes of Manganese(II) with Pyrimidine derivative ligands.The Mncomplexes have been characterize on the basis of elemental analysis, infrared, electronic spectra and magnetic susceptibility studies. Antibacterial activities of these ligands and complexes have also been reported on *S. aureus* and *E.coli* microorganisms. The diffuse reflectance spectrums of the complexes show bands in the region around 17636 cm^{-1} to 26881cm^{-1}, assignable to $^6A_{1g} \rightarrow {}^4T_{2g}$, $^6A_{1g} \rightarrow {}^4E_g$, $^4A_{1g}(4G)$ transitions. These are also typical of tetrahedral environment around the Manganese metal. The magnetic moment (5.79-5.92 BM) of the complex indicates high tetrahedral environment. The green method of synthesis of complexes have found easily, appropriate and eco-friendly.

Keywords: Microwave, amide, Mn (II), Antimicrobial

OPE 83

USE OF AZUR-C-NITRILOTRIACETIC ACID AS A NEW SENSITIZER-REDUCTANT SYSTEM FOR ENHANCED SIMULTANEOUS SOLAR POWER CONVERSION AND STORAGE BY PHOTOGALVANIC CELL

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ABSTRACT
A solar cell, or photogalvanic cell, is an device that converts the energy of light directly into electricity by the photogalvanic effect, which is a physical and chemical phenomenon. The present study of the PG cells based on so far unexplored Azur-C-Nitrilotriaceticacid as a photosensitizer-reductant couple in the sodium hydroxide alkaline medium has shown greatly enhanced cell performance over published results. On the basis of the effect of various parameters of performance of the cell, a tentative mechanism for photocurrent generation has been proposed. The maximum photo potential, photocurrent and power of this cell were **3***47* MV, *7*0 μAand 19.84 μW. The observed conversion efficiency was 0.19% and the storage capacity of the cell was 38 minutes in dark. The effects of different parameters on electrical output of the cell were observed and a mechanism has been proposed for the generation of photocurrent in photogalvanic cell.

Keywords: Azur-C, Nitrilotriaceticacid, Fill Factor, Conversion Efficiency, Storage Capacity

OPE 84

COMBATING CLIMATE CHANGE EFFECTS: A CASE STUDY OF CONVERTING KITCHEN WASTE TO BLACK GOLD

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ABSTRACT

Climate change is the global phenomenon of climate transformation characterised by the changes in the usual climate of the planet that are especially caused by human activities. As a result of unbalancing the weather of Earth, the sustainability of the planet's ecosystems is under threat and so, the future of the humankind and the stability of the global economy. The impacts of climate change include warming temperatures, changes in precipitation, increases in the frequency or intensity of extreme weather events and rising sea levels. These impacts threaten our health by affecting the food we eat, the water we drink, the air we breathe and the weather we experience. To combat effects of climate change on environment, raising individual awareness and responsibilities are very important. The present study explores the efforts of individual students to learn segregation of waste at home and use kitchen waste to make compost fertilizer. About 30 students, along with their families enthusiastically took up the task of home composting and turning into rich compost or black gold. This has not only enthused students with confidence to do positive action towards environment but also reduced hundreds of kilograms of kitchen waste from the landfills. Further action demands making of a Green Brigade of students who can take this initiative further.

Key-words: Home composting, Kitchen waste, Waste segregation.

OPE 85

SHORELINE CHANGES ANALYSIS USING REMOTE SENSING AND GIS IN JAMBUSAR COASTAL TRACT, TALUKA OF BHARUCH, GUJARAT.

Sarita Singh

ABSTRACT

Shoreline are one of the most dynamic features on the surface of earth. Constantly changing due to many forces acting on them both from the landward side and the ocean side. Envisaging the changes on the coastal landforms is very important for integrated coastal zone management and a tough task too due the large scale measurement and monitoring of the area. Remote sensing and GIS have been found the convenient way to investigate the changes on this area and the multi date satellite images available from LANDSAT AND GOOGLE helps in demarcating and reviewing the changes and analysing the shifting of the shoreline.

In the present study we are monitoring the changes in the Jambusar coastal area of stretch up to 60Kms of distance starting from the mouth of the Mahi River and ending to the mouth of the Dhadhar River in state of Gujarat. LANDSAT 8 images from 1998 to present date 2020 have been used to understand the changes or shift in the shoreline of this area. Approximately 23 years gap has been used to assess the changes in the area. The result suggests not drastic changes in the shoreline change, but with time there has been lot of landuse changes. We conclude that in future this region might suffer from salt water intrusion.

OPE 86

AN EFFICACIOUS SYNTHESIS OF α-HYDROXY PHOSPHONATES USING A NEW CATALYST: LI_2CO_3

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ABSTRACT

α-hydroxy phosphonates are potentially bioactive compounds which exhibit interesting pharmaceutical activity such as antibacterial, antifungal, anticancer, antihypertensive etc.A highly efficient and convenient protocol has been accomplished for one pot synthesis of α-hydroxy phosphonates using aromatic aldehyde, diethyl phosphite in presence of eco-friendly catalyst Li_2CO_3 at ambient temperature by grinding method. The use of cheap, radially available and easy to handle Li_2CO_3 makes method more simple, reliable and practical.

Keywords- cheap, radially available, simple, reliable.

OPE 87

STUDIES ON EXTRACTION OF ANTHOCYANIN FROM EGGPLANT PEEL AND ITS APPLICATION IN VALUE-ADDED PRODUCT

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ABSTRACT

Fruits and vegetables are important source of various nutrients like vitamins, minerals, bioactive compounds; etc.Natural colour pigments are gaining importance worldwide due to their potential health benefits and attractive colours. Anthocyanin, a bioactive compound is extracted by different methods, but in this work conventional solvent extraction is considered as the most suitable/potential method for eggplant. Major anthocyanin found in eggplant is nasunin. Purification of the crude extract is done by using macroporous resins Amberlite XAD4 employing adsorption and desorption. This natural pigment from eggplant peel can be incorporated into varieties of food products and development by using eggplant flesh flour which increases its nutritive value, attractiveness and acceptance towards consumers. This work mainly emphasizes on extraction method of anthocyanin, its purification and development of new product with incorporation of colour in it.

Keywords: Anthocyanin, Extraction, Purification, Product Development, Eggplant

OPE 88

NUTRITIONAL ANALYSIS, PHYTOCHEMICALS COMPOSITION, ANTIOXIDANT AND ANTIBACTERIAL ACTIVITY OF WILD EDIBLE PLANTS USED BY THE GADDIS-A TRIBAL COMMUNITY OF WESTERN HIMALAYAS

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ABSTACT:

The food security issues and its relevance in rural areas have been often neglected. Wild edible plants have been playing a major role in livelihood security among the tribal communities of Western Himalaya. The present study aimed to examine the nutritional properties, phytochemical analysis, antioxidant and antibacterial activity of five underutilized wild edible plants viz. *Pyrus pashia*, *Oxyria digyna*, *Zanthoxylum alatum*, *Oxalis corniculata*,and *Elaeagnus umbellata* that are consumed by the Gaddi community of Bharmour region of district Chamba, Himachal Pradesh. These edibles showed the appropriate amount of nutritional composition i.e. carbohydrate, protein, sodium, potassium, crude fibre and fats. These plants have the various phytochemicals such as phenol, flavonoids, ascorbic acid, tannin, terpenoid, carotenoid, tocopherol, alkaloid and phytate. Methanolic extract of these edibles showed the radical scavenging property using ABTS, DPPH and FRAP assay. Antibacterial activity of the methanolic extract of studied plants suggested that *Escherichia coli* was the mainly resistant strain to plant extracts comparison to the *Staphylococcus aureus.* The results of study showed that these wild plants are well sources of protein, carbohydrate minerals and vitamins that can give nutrition, food security, health and curative benefits.

Keywords: Antibacterial, antioxidant, Nutritional, Phytochemicals, Wild edible.

OPE 89

MARKETING STRATEGIES USED FOR PROMOTING FILM TOURISM

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ABSTACT

In India Entertainment is the industry that has successfully created a image of destination. Film is a entertainment platform. Film tourism is a promotion of destination through film.Tourist visit the destination and get attracted towards the destination which is being highlighted through television, webseries, movies, serials. National Examples like ―Bombay‖ is featuring in Kerala Yeh jawani hai deewani was shot in Manali.,‖Bajirao Mastani‖ in Rajasthan etc. These article focusing on marketing strategies and Marketing P's through film.

OPE-90

POST COVID TOURISM PROSPECTIVE AND CHALLENGES IN INDIA WITH SPECIAL FOCUS ON INDIAN CULTURE AND SOCIETY

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ABSTRACT

The focus of this study is the assessment of the Future Perspectives and Challenges of Covid-19 pandemic in the tourism and hospitality sector in India which has led global panic due to present situation .In March 2020, the World Health Organization (WHO) declared the novel Corona virus, or COVID-19, a global pandemic following its identification in Wuhan, China in December 2019.As per the WHO report, this pandemic has resulted in over 4.3 million confirmed cases and over 549,000 deaths till 9 July 2020. Scope of this work is to study the effects of Covid-19, current events, and assessment through the interpretation as it is essential to investigate how the industry will recover after Covid-19 and how it can be sustainable.The secondary objective of the present study is to Find Out the solutions based on the key insights observed from different source.

***Keywords*: -** Tourism, Covid-19, Tourism Future, Pandemic, Vaccine Tourism, MICE, Hospitality, Indian Tourism.

OPE-91

ENVIRONMENTAL IMPACT OF TOURISM IN INIDA

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ABSTRACT

Tourism is one of the biggest and fastest growing sectors in the global economy and has significant impact on environment, culture, society and also on economy both positively and negatively. The unfavourable impact that tourism can have on the environment both undermines the basic resource for tourism can have in coastal areas and heavily affects other non-tourist economic activities. There is a need to minimise the various impacts which badly affects tourism sectors by proper tourism planning, managing and undertaking in a way that is environmentally sustainable, socially beneficial and economically feasible. Focus should be given more on Ecotourism and proper planning on balanced use of resources. The negative impact of tourism development can gradually destroy environmental resources on which it depends. The objective is to see the impact of tourism both positively and negatively on the environment and to find out the direct impact of tourist activities in the respective tourism areas. Tourism has the potential to create beneficial effects on the environment by causal to environment protection and conservation. The relationship of tourism with the environment is complex. It involves many activities that can have unpleasant environmental effects. The main purpose of the paper is to review various environmental impacts of tourism and the effects of tourism on various natural resources, environmental pollution and on physical environment.

Keywords: Tourism, Environmental Impacts, Ecotourism

OPE 92

PULSES CULTIVATING MARGINALIZED FARMERS' CLIMATE CHANGE PERCEPTIONS, IMPACTS AND ADAPTATION STRATEGIES IN MARATHWADA REGION, INDIA

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ABSTRACT

Pulses cultivating marginalized farmers' climate change perceptions, impacts and adaptation strategies in the Marathwada region of Maharashtra state, India were carried out in 2020. Four administrative blocks were identified where pulses are cultivated as a major crop. The study population comprises 90 male and five female farmers. A specially designed and developed questionnaire was used as a tool for eliciting the information from the respondents. Maximum (95.78%) farmers depend upon rainfed pulses cultivation and

>50% belongs to below poverty line. Climate change perception reported includes rain pattern change (89.47%) followed by an increased drought incidences (88.42%), and high temperature (62.1%). Seasonal changes were also reported by them. A decrease in forest vegetation cover was also reported (54.73%). Agriculture residue burning is perceived as the major cause of climate change. Major impacts of climate change on soil include moisture reduction (61.05%) whereas, on the water, it is quantity (94.73%). Insect/pest attacks increased was reported by all farmers followed by productivity reduction (93.68%). Heatstroke was identified as a major (100%) impact on livestock followed by death due to it (50%). Monsoon season has maximum (93.75%) adverse impacts on livestock. About 77% farmers showed willingness for climate change adaptation and it was in the order of harvest (88.42%) > during irrigation (80%) > post-harvest (77.89%) > crop growth (76.84%) > during sowing (70.52%). Climate change perceptions are in accordance with the existing scientific evidence. Furthermore, impacts encounter by these farmers are pronounced and well distinct. These farmer needs to be made aware of climate smart agriculture adaptation measures thus to pave the way for sustainable agriculture which will ensure a sustainable livelihood.

Keywords: Climate change, Marginalized farmers, Marathwada, Pulses

OPE 93

CAUSES AND EFFECTS OF URBAN SPRAWL IN AGARTALA CITY, INDIA.

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ABSTRACT

Urbanisation is a worldwide phenomenon; it is rapidly taking place all over the world. Unrestricted growth of urban areas results in urban sprawl. The study area is also experiencing urban sprawl over the years. Agartala city is the rapidly urbanising capital city of a small North Eastern state of India, Tripura. The city is the second most populated and one of the fastest growing city in the North Eastern region of India.. The city extends from 23º45´ to 23º55´ N of latitude and 91º15´ to 91º20´ E of longitude. Population of the city was 400004 according to 2011 census. Causes and effects of urban sprawl found in the city are established on the responses of city residents which was collected through primary survey. Secondary data was collected from available sources and the data was analysed with the help of appropriate methods. Urban development is important and for urban growth necessary measures should be taken to ensure the well being of the residents as well theenvironment.

Keywords: Urbanisation, Urban Sprawl, Causes and Effects.

OPE 94

CLIMATECHANGEANDITSEFFECTONENVIRONMENTFOODAND SOCIETY

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ABSTRACT

Climate change is one of the biggest human challenges facing the world. Climate change affects human health and wellbeing through more extreme weather events and wildfires,decreases air quality and diseases transmitted by insects food and water.Climatic condition play a significant role ispeople lives and can in interfere with live in multiple ways.

Keywords: Climate Change, Society, Food, Public Policy, Effects, Social Science, Agriculture.

OPE -95

RELATIONSHIP BETWEEN CLIMATE CHANGE AND LITERATURE: AN ANALYTICAL STUDY

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ABSTRACT:

At present we are facing the threat of impending ecological disaster and this new consciousness has captured the attention of scholars. It has made people realize that, Nature is heading towards its catastrophe and it is time for us to change our attitude towards it and consciously take care of it.

Postcolonial Studies today reflect the study of Geography and Socio-economic conditions, Power Economics, Ecocriticism, Politics, Religion and Culture and how these elements work in relation to colonial hegemony and how they will help to resolve our present issue of climate change.

Caught in the midst of this world-wide challenge, new methods and tools have currently been employed to explore this very new critical arena. Research is going on highlighting on the complexities of climate change both as a scientific and a cultural phenomenon. Several authors have represented climate change as a global, networked and controversial phenomenon, and this in turn has not only led to the study of Environmentalism, Ecocriticism, Green Studies, etc. ushering in a slight shift from the earlier concept of mere admiration of the gracious beauty of Nature embracing a new understanding of the local in relation to the global, but also of shouldering the responsibility of preserving it with a mission to save Mother Earth and civilized life. As a result, many literary works have environment as a setting exploring its impact on plot and character, producing unconventional narrative trajectories.

This paper is a humble attempt to briefly survey the origin and development of the need of ‗Ecocritical Studies', ‗Green Studies' , ‗Nature Studies', ‗Cli-fi', etc. helping one to understand the deep relationship existing between the study of Literature, Climate Change and Man's association with Nature.

Keywords:Postcolonial Studies, Environmentalism, Ecocriticism, Cli-fi

OPE 96

CLIMATE FLUCTUATIONS, DECAMPMENT AND SUBJUGATION IN AMITAVGHOSH"S *GUN ISLAND*: A CLIMATE FICTION

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ABSTRACT
Every book writers achieve decorative images and symbols from the beauty of climates like rain and spring. A text is not a one piece art. Every critical phase create a new genre in literature. The twenty-first century has a set of novelty writers and their school—climate fiction, a serious modern fiction. The aims of this narrative are to show the human concern for the future of the earth and to increase their socio-political consciousness.The contemporary writers merge the monotonous life of the protagonist with the outside environment to mark the effect of human activities upon the Earth.Every work of AmitavGhosh is a literary report from the eye of the storm. His writing is a blend of family, history and science; which focus on the violent reactions of non-humans. *Gun Island*, the ninth novel of Ghoshstarts with the mystery of Sundarbans and in contrast, ends with the enlightenment in Sicily. This paper reviews the origin and development of climate fictionand critically scans the adversities of non- humans due to climate emergency. The intensity of the article is to study the consequences of human actions during migration.

Keywords: Anthropocene Fiction, Global Warming, Colonialism, *The Great Derangement*, Animal Migration, Trafficking, and Promotions.

OPE -97

RE-THINKING CLIMATE CRISIS: SOCIO-ECOLOGICAL PERSPECTIVES IN IAN MCEWAN‟S *SOLAR*

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ABSTRACT

Climate Fiction is a contemporary literary genre that deals with both global warming and climate change. This genre does not necessarily follow the speculative nature. Works of this genre may take place either in the present world or the near future. It is hard to alienate fiction from human life and their struggles. Man‘s life is inevitably linked with nature and environment. So writers of climate fiction show their deep commitment towards environment and society. This genre particularly highlights the result of abuse to social injustice and environment which leads to the deprivation of both social systems and ecology. Ian McEwan‘s *Solar* (2010) describes global warming through the interior monologue of the anti-hero Michael Beard. But the heroic character, Tom Aldous devotes his life to climate sustainability. This paper highlights the struggle between climate change and mankind. In this article, Ian McEwan‘s *Solar* is critically analysed through the lens of Amitav Ghosh‘s *The Great Derangement: Climate Change and the Unthinkable.*

Keywords:ecology, climate change, global warming, solar, environme

OPE -98

CONSUMER PURCHASE INTENTION TOWARDS ECO-FRIENDLY MENSTRUAL PRODUCTS

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ABSTRACT

As environmental pollution is increasing each day, it is vital to have sustainable consumption. In India, the pollution generated through menstrual waste is high. Disposing of menstrual waste enters the solid waste stream, contaminates the water sources, burning of pads creates pollution. These are some of the ways menstrual waste is affecting the environment. Although government initiatives and companies have come up with sustainable eco-friendly products, there is not much awareness among the consumers.Hence, the study aims to understand whether female consumers aged 15-50 years are aware of eco-friendly menstrual products and to investigate how the factors such as moral attitude, price and environmental consciousness are influencing the purchase intention of consumers in relation to eco-friendly menstrual products.

Keywords- Eco-friendly menstrual products, Purchase Intention, Consumer Behaviour, Environmental consciousness.

OPE-99

IMPLICATION OF WQI AND BENTHIC MACROINVERTEBRATES BASED INDICES FOR POLLUTION ASSESSMENT OF RIVER NARMADA IN JABALPUR REGION

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ABSTRACT
Water is the most important natural resource in the world, has the unique property of dissolving & carrying in suspension a huge variety of chemical and hence water can easily become contaminated. Traditionally physico chemical analysis of water will help to know the water quality at the time of sample collection. The benthic macroinvertebrates fauna of river is most suitable biological parameter of water quality. The present research has been focused on Narmada river basin and specifically in three selected sampling sites in Jabalpur region : Bargi Dam, Gwarighat and Bhedaghat. Total 24 sampling have been done in the duration of 2 years (2015-2017). Samples were collected as per standard sampling technique during morning between 8-9 am and evening 5-6 pm. Samples were collected from different methods for physico-chemical analysis (Temperature, pH, Turbidity, Conductivity, BOD, DO, COD, TDS, Total Hardness and Chloride) as well as biological monitoring. Biological samples were identified using keys and books by ZSI. Indices were calculated namely WQI for abiotic factor and saprobic index, HBI, B-IBI for biotic factors. In the present study highest value in Gwarighat while minimum in other stations. WQI value was found to be 64.106 and 59.674 in Ist and IInd year respectively in all seasons at all sampling sites. WQI value was decreased in IInd year which shows water in 1st year was of poor quality than IInd year study. A total of 758 individuals of 55 families belong to 18 orders and 4 phylum. 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. To compared 4 biotic indices 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. The calculation results for Hilsenhoff biotic index revealed very poor to good biological condition of water, in all the study Sites, slightly divergent from least disturbed condition.

Keywords:Narmada, Water Quality Index, Benthic Macroinvertebrates, Family, Pollution

OPE 100

STUDIES ON IMPACT OF DISTILLERY EFFLUENTS ON SOIL AND GROWTH CHARACTERISTICS OF SOME TRACHYSPERMUM AMMI (AJWAN) PLANT.

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ABSTRACT

Distillery industries are high income paid as well as high pollution loaded industry. In Maharashtra, there is maximum number of distilleries producing alcohol which is about 180.28 Lac liters per year. It is also estimated that about 17 liters of waste water is released for every liter of alcohol. The distillery effluent reaches rivers, wells and affects the quality of surface, ground water & Soil. The effluent affected water & Soil may have certain impact on growth characteristics of *Trachyspermum ammi* (Ajwan) medicinal plant and mycobial diversity.

The distillery effluent was collected from sugar industry and preserved at 20°C until used. The initial physicochemical parameters of distillery effluent were studied by standard method. The seeds of *Trachyspermum ammi* plant were sterilized using 0.1% of mercuric chloride solution to remove the microbes after thorough wash. For biochemical tests, using five soil pots whose dimension are 30cm height x 20cm width. Red soil was collected without any contamination by distillery factory effluent and sieved (4mm mesh). About 4kg of soil was taken in separate pots. Five different concentrations (viz., 0%, 25%, 50%, 75%, and 100%) of effluent were prepared and poured into each pot. Control was also maintained and irrigated with tapwater.

The physicochemical parameters of the distillery effluents are very high which affect not only the *Trachyspermum ammi* plant growth but decreases the fertility of the soil. The investigation was carried out with different concentration of effluent for seed germination, growth, seed myocflora and dry matter of *Trachyspermum ammi* plant. It is concluding that distillery effluent is harmful for the *Trachyspermum ammi* plant growth. From the experiment it was found that control effluent gives 99% of seed germination, but when the concentration of distillery effluent increases it decreases the seed germination, growth, dry matter and seed mycoflora of *Trachyspermum ammi* plant due to high organic and inorganic pollutant contains. The high physicochemical parameter of effluent reduced the fertility and productivity of soil

Keywords:Distillery effluents, concentration, *Trachyspermum ammi*plant .pollutants.

OPE 101

OBSERVATION OF CLIMATE CHANGE AND SKIN DISEASES ALONG WITH VITAMINA DEFICIENCY AND SCLERAL, SCLERALMELANOCYTOSIS AMONG RURAL PRESCHOOL CHILDREN IN MAVAL TEHSIL, M/S, INDIA.

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ABSTRACT

A health survey of preschool children was carried with the aim of climatic change and general health of preschool children in rural areas of Maval Tehsil. Clinical observation and examinations were carried out undertrained surveyors. During survey 629preschool children were examined for various health issuesin relationdue to climate change. The survey revealed skin diseases (4.9%), Prevalence of VitaminA deficiency (8.73%) with night blindness (1.33%), xerophthalmia (1.3%), Bitot's spots (3.8%)and conjunctival xerosis (2.3%). The other health issues such as Scleral melanocytosis (2.7%) were observed.

Keywords:Climate change, Preschool children, Skin diseases, Vitamin-A deficiency, Bitot's spots,Scleral melanocytosis.

OPE-102

RECOVERY OF CARBON DIOXIDE FROM THE AT MOSPHERICAIRWITHDIRECTAIRCAPTURE TECHNOLOGY

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ABSTRACT

CO_2 is the most common greenhouse gas, accounting for approximately three-quarters of all emissions. CO_2 which contributes to global warming is continuing to climb. It can last for thousands of years in the atmosphere. CO_2 is recovered from the atmosphere using a direct air capture (DAC) method. Air contactor – a massive structure modeled after industrialized cooling towers – kicks off the operation. CO_2 is continually captured from atmospheric air and delivered as a purified, compressed gas using DAC technology. Sodium hydroxide interacts with CO_2 to form sodium carbonate, which is a stable caustic solvent. This carbonate is heated to produce a gaseous CO_2 stream that is extremely pure. CO_2 can be permanently retained in deep geological formations, resulting in negative emissions, or it can be used in food processing or mixed with hydrogen to make synthetic fuels. Although certain industries, like aviation and heavy industry, are hard to decarbonizes, carbon removal technologies can balance these emissions and help the transition go more quickly. This paper mainly focuses on the process of recovery of CO_2 from the atmospheric air. The performance of DAC was carried out in this study. Although certain industries, like aviation and heavy industry, are hard to decarbonizes, carbon removal technologies can balance these emissions and help the transition go more quickly.

Keywords:Direct air capture, Carbon dioxide; Green House Gas; Global warming;

OPE-103

STUDY OF PARTICULATE MATTER (PM10 AND SPM) DISTRIBUTION IN AMBIENT AIR OF JODHPUR, RAJASTHAN

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ABSTRACT

Growth in population, industry, number of vehicles and improper implementation of emission standards have contributed towards making the air quality worse. Air quality of Jodhpur was analyzed by recording Suspended Particulate Matter (SPM) and Particulate Matter-10 micrometer (PM10), for 24 hour, each month at two sites- Shastri nagar (residential area) and HI area Basni Phase II (industrial area) from June 2019 to March 2020, along with meteorological parameters like relative humidity, wind speed and rainfall. The residential sampling site recorded highest SPM 231.75µg/m^3 to lowest 25.42µg/m^3 in month of June 2019 and September 2019 respectively. Highest PM10 was recorded being 153.22µg/m^3 and lowest being 19.89µg/m^3 in month of January 2020 and September 2019 respectively. Industrial sampling site recorded highest SPM being 665.14µg/m^3 to lowest 150.07µg/m^3 in month of June 2019 and September 2019 respectively. At same site PM10 highest value 686.27µg/m^3 wasrecorded in the month of March 2020 while lowest value of 152.59µg/m^3 was recorded in the month September 2019. Correlation analysis revealed that PM10 is negatively correlated with relative humidity, wind speed and rainfall at both sampling station during study period. The value of exceedance factor was found to be 0.95 and 2.66 for residential and industrial site respectively. The above findings (PM10 average of study period) was higher than the Revised National Ambient Air Quality Standards (NAAQS) 2009 given by Central Pollution Control Board (CPCB) at industrial site but at residential sampling site it was found to be within the standards.

Keywords: Jodhpur, air pollution, particulate matter, SPM, PM10, exceedance factor, CPCB

OPE-104

ZOOPLANKTONIC DIVERSITY OF GUDA BISHNOIYAN POND, JODHPUR

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ABSTRACT

Zooplanktons play key role in the food web by controllingphytoplankton production besides acting as bioindicator. The present study assessed the zooplanktons abundance and diversity of Guda Bishnoiyan pond near Jodhpur, by collecting monthly samples from three stations, A, B and C, filtering 50 lts of water, from June 2019 to March 2020 along with limnological parameters, free carbon dioxide, salinity and turbidity. Free carbon dioxide ranged from 0 to 5ppm, while salinity ranged from 0.14ppt to 6.62ppt, and turbidity ranged from 1.1 to 186 NTU during the study period. The study revealed the highest population of these organisms in month of June 2019 at all the three stations A, B, C being 222083 /lt, 63887/lt, and 68610/lt respectively. Lowest number was recorded in the month of October 2019 being 11.11 /lt and 46.66/lt at station A and B, while at station C it was recorded in July 2019 being 11.11/lt. Out of the four groups studied (rotifers, cladocera, copepodas, and ostracoda) twelve genus were found during the study period. Correlation analysis with limnological parameters showed that rotifer have positive correlation with all three limnological parameters. Copepods and ostracods showed nearly no correlation with free carbon dioxide and salinity, but ostracods showed negative correlation with turbidity. Cladocera showed negative correlation with all three limnological parameters. Rotifers were found to be a dominant group (pooled data of all three stations) during the study period and the order of dominance of the groups was found to be – rotifers (62.37%) > copepods(16.99%) > cladocera (13.02%) > ostracods (7.6%).Average value of Shannon -Wiener index , Simpson index, species richness index, species evenness and Simpson dominance index were found to be 0.95, 0.47, 0.65, 0.68, and 0.53 respectively (pooled data of all three stations), which indicate towards heavily polluted status ofpond.

Keywords: Zooplankton, limnological parameters, diversity indices, Guda Bishnoiyan, Jodhpu

OPE-105

IMPACT ON THE FUNGAL COMMUNITY LIVING ON OUR LAND DUE TO PETROLEUM SOIL POLLUTION

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ABSTRACT:

Soil is generally a natural habitat of micro-organisms and tree plants in which most micro-organisms live in communities such as bacterial viruses and fungi etc.At present, many human activities have resulted in many complex problems, of which soil pollution is a serious problem, so many reasons are responsible for soil pollution such as industrialization, urbanization, natural disasters, etc. Besides these, petroleum units are also an important cause of soil pollution. The waste materials and petroleum products that increase hydrocarbon pollution in the soil thus harm the fungal community present in the polluted soil, so petroleum polluted soil has seen a tremendous increase in some fungi species such as Aspergillus Penicillium and Fusarium, these species of fungi can digest the hydrocarbons present in the soil. Therefore, in the future these fungi species can be used to reduce the rate of hydrocarbon pollution from petroleum polluted soil, that is, the rate of soil pollution can be reduced.

Keywords: *Habitat, Petroleum Hydrocarbon, Penicillium, AspergillusFusarium.*

OPE-106

"ENVIRONMENTAL SIGNIFICANCE OF THE MICROALGAL (CHLOROPHYCEAE) DIVERSITY AND ITS CULTIVATION FOR BIOMASS USING WASTE WATER"

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ABSTRACT:

The present study was carried out to study the diversity of microalgae and its cultivation governed by its physico-chemical parameters from the lakes of Davangere district, India. Overall, 108 genera were documented including 29 from chlorophyceae members (31%). Among them, S*cenedesmus* Sp., *Chlorella* Sp. *and Chlorococcum* Sp. werefrequently encountered with high relative abundance and species number from the seven study area. Based on the diversity indices, the chlorophyceae diversity was considerably high in Bathi lake (21%), followed by in Devarbelekere (18%) and Ayankere (14%) as these lakes were enriched with phosphate, nitrate, sulphate and organic constituents. Shanthisagara Lake (8%) was documentedleast with highD.O and low nutrient constituents. Statistical analysis indicated that nutrients such as PO_4^-, NO_3^-, Cl^-, Mg^{++}, SO_4^-, DO, pH, temperature, and turbidity were the most important factors regulating the variation in the structure of the chlorophyceae community. The predominant isolates S*cenedesmus* Sp., *Chlorella*Sp. *and Chlorococcum* Sp.were cultivated using Food Waste Hydrolyzed Broth (FWHB) and Arecanut Husk Waste (AHW), with later giving a biomass of 1.04 gm/L, 1.35 gm/L and 0.914 gm/L respectively. The mean nutrient (PO_4^- and NO_3^-) uptake was observed more in*Scenedesmus* Sp. followed by *Chlorella* Sp.and*Chlorococcum* Sp.Our study suggests thatmicroalgae (Chlorophyceae) play a significant role as an ecological indicator and its application for remediation of the aquatic ecosystem. Further, its biomass could serve as a feed stock for biofuel and biotechnological application.

Key words: *Microalgae, Davangere district, Bio-indicator, Phycoremediation, Biomass.*

OPE-107

IMPACTS ON AIR QUALITY INDEX IN THE INDUSTRIAL TOWN OF ASANSOL (WEST BENGAL, INDIA) DUE TO COVID-19 LOCKDOWN

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ABSTRACT

The lockdown phase associated with COVID-19 pandemic initiated in full swing on and from 25th March, 2020 as preventive measures against the spreading of Coronavirus. The objective of this study is to analyse the status of air quality of before and after lockdown in Asansol city which is second largest city of West Bengal, India and also known as ―coal mining city‖. Secondary data of five parameters like CO, SO_2, NO_2, PM2.5 and PM10 have been collected from Central Pollution Control Board, India. The result shows significant decrease of five parameters from 42.4 % (CO) to 63.4 % (NO_2) due to close down of all industrial and transport activities during lockdown period. Based on different investigation a green belt development plan for this polluted city has been suggested for sustainable air quality management.

OPE-108

A REVIEW OF DISASTERS IN INDIA DURING 1980 – 2010

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ABSTRACT

The Indian subcontinent has witnessed many Disasters over the years. Disasters are on the rise around the world due to unpredictable climate change. India has not been spared the consequences of this global climate. This study examines the tragedies that befell India from 1980 to 2010. During this period various types of disasters have threatened the lives and property of human beings and other living beings. This study has been used to monitor disasters in India and to understand the frequency and location of disasters. The author observes that floods and earthquakes are the leading causes of disasters in India, and that almost all parts of India have been affected by one or more natural disasters, and that the frequency of disasters has increased as urbanization and industrialization have led to climate change.

Keywords: Disasters, Climate Change, Floods, Earthquakes

OPE-109

ANTHROPOGENIC INFLUENCE ON WATER QUALITY AND PHYTOPLANKTON DIVERSITY OF GANGA RIVER AND ITS MAJOR TRIBUTARIES: A CASE STUDY OF UPPER GANGA BASIN

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ABSTRACT

Water quality plays a significant role in assessing the diversity, distribution and abundance of phytoplankton assemblage structure in any freshwater ecosystem. The quality of freshwater body is swiftly deteriorating due to numerous anthropogenic events and diverse emancipations from the continuous upsurge in population growth, industrialisation and urbanisation. The main aim of present experimental study was to guesstimate the impact of anthropogenic pressure on water quality and phytoplankton dynamics along the catchment basin of upper Ganga. The water quality and plankton diversity of a upper Ganga basin was studied for the period of one year between 2020-2021 in eight sampling stations. Some important physico-chemical parameters like turbidity, DO and BOD exhibited a minor increase in sampling stations 7 and 8. Multi-correlation was calculated between important water quality parameters and phytoplankton diversity. About 31 genera of phytoplankton were recorded. Five groups of phytoplankton were recorded as Bacillariophyceae (14 genera) followed by Chlorophyceae (11 genera), Myxophyceae (4 genera), Euglenophyceae (1 genera) and Xanthophyceae (1 genera). Variation in Dissolved oxygen directly influenced the diversity, distribution of phytoplankton's and also displayed positive correlation with each other. Lastly, it can be concluded that various municipal activities including various construction activity impact the water quality and biodiversity. Still, these categories of actions to be checked habitually and can be controlled.

Keywords: Water quality, phytoplankton diversity, anthropogenic, upper Ganga basin.

OPE-110

GROUND WATER QUALITY ASSESSMENT IN VILLAGES OF CHAKA BLOCK, ALLAHABAD(PRAYAGRAJ), U.P. (INDIA)

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ABSTRACT

Groundwater is important assets of any life support system. It is not only fulfil the basic need for human existence but also essential input for all the development activities. The present research was conducted in different villages of Chaka block of karchana Tehsil, Allahabad (Prayagraj), U.P. The important physico-chemical parameters such as pH, electrical conductivity (EC), Turbidity, Alkalinity, total dissolved solids (TDS),total hardness and magnesium hardness. Experimental results show the water on comparing the results against drinking water quality standards laid by BIS. The water parameters Alkalinity, Chloride are within the permissible ranges of Bureau of Indian standards (BIS) at all sites except total hardness, Magnesium hardness and turbidity.

Keywords:Groundwater, Drinking water, Water Quality, Pollution

OPE 111

IMPACT OF COVID-19 ON ENVIRONMENTAL CLIMATE, PEOPLE

LIVELIHOOD, AND THEIRHEALTH

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ABSTRACT

Covid-19 pandemic shows many impacts on the environment are observed or could also be anticipated because the pandemic has limited to ourEnvironmic activities, consumption and movement, pollutant emissions and natural resources use have slowed, and therefore the rate of environmental change has fallen in most areas. But CO2 concentration within the atmosphere still rises and there's the increased use of plastics, notably in packing. Activities to conserve ecosystem and biodiversity are restricted resulting in a rise in illegal waste dumping hunting and logging, for example. As people lose their livelihoods, increased poverty will likely cause more people to show to unsustainable harvesting of natural resources. The lockdown has led to the postponement of important negotiations on global environmental governance within the expected global climate change and biodiversity

–super year‘.‘.The lockdown has several years affected life and livelihood across rural India. Agriculture and allied sectors employ quite half the workforce within the country. A majority of India's farmers (85%) are small and marginal farmers with but two hectares of land. quite 9 million active fishers directly depend upon fisheries for his or her livelihood. Tribal communities are among the foremost vulnerable in terms of food and nutrition security as seen in National statistics. Going forward, one can foresee many challenges as farmers and farm laborers began to rebuild their lives and livelihoods. Informal economy workers are particularly vulnerable because the bulk lacks social protection and access to quality Healthcare and have lost access to productive assets without the means to earn an income during lockdowns; many are unable to feed themselves and their families. For most, no income means no food, or, as best, less food and fewer nutritious food. The pandemic has declared decimated jobs and therefore the place and many livelihoods in danger. As breadwinners lose jobs, fall ill, and die the food security and nutrition of many women, and men are under threat, with those in low- income countries. Guaranteeing the security and health of all agri-food workers from primary producers to those involved in food processing transport and retail, including street food vendors also as better incomes and protection, will be critical to saving lives and protecting Public Health, people‘s livelihood, and food security.

Keywords: pandemic, biodiversity, environmental, climate,lockdown

OPE-112

WATER POLLUTION IN SANGLI- MIRAJ- KUPWAD MUNICIPAL CORPORATION AREA

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ABSTRACT

Sangli Miraj Kupwad Muncipal Corporation is largest municipal corporation in South Maharashtra and serves a population of 0.65 million with Geographical Area 118.18 Sq.km and tropical climate. We can observe different types of pollution over this study area like water, air, soil, noise pollution as one of the growing city surrounded with agricultural land. The major water bodies selected for study purpose are Lake near RTO office,Bharat Nagar Talav,Miraj Odha,Ganesh talav,Kali khan,Krishna River. The major causes of water pollution to these selected water bodies are sewage, agricultural runoff, solid waste disposal and agricultural runoff. There are numerous evidences of health effects of polluted water bodies. The Sewage treatment plant of 27MLD with primary and secondary treatment is proposed. As on today, the implementation work of this plan is in progress.

OPE-113

WOUND DRESSING MATERIAL USING GYMNEMASYLVESTRE LEAF EXTRACTAND THEIR BIOLOGICAL ACTIVITY

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ABSTRACT

Wound healing is the method of restore that follows wound to the skin and other soft tissues. Next injury, an inflammatory reaction occurs and the cells below the dermis begin to enlarge collagen (connective tissue) production. Presently, the epithelial tissue (the outer skin) is regenerated. Traditionally, *Gymnema Sylvestre* (Asclepiadaceae), commonly famous as –gurmar‖ for its divided material as sugar destroyer, is a reputed herb in the Ayurvedic system of the drug. The phytoconstituents responsible for sweet suppression action include triterpene saponins well-known as gymnemic acids, gymnemasaponins, and a polypeptide, gurmarin. The herb exhibits a wide collection of therapeutic properties as a helpful natural medicine for diabetes, besides being used for arthritis, diuretic, anemia, osteoporosis, hypercholesterolemia, cardiopathy, asthma, constipation, microbial infections, indigestion, and anti-inflammatory. *G. Sylvestre* has good quality prospects in the treatment of diabetes as it shows helpful effects on blood sugar homeostasis, controls sugar cravings, and promotes regeneration of the pancreas. this study aims to form a wound dressing material from ethanol extract of *Gymnema Sylvestre* included in sodium alginate formation of a hydrogel. *Gymnema Sylvestre* has been reported to possess the anti-microbial, anti-oxidant activity, and in-vitro release activity contributing towards wound healing properties. Hence these herbal products can be created as potential wound dressing materials with important wound healing properties in near future.

Key words: wound dressing, *Gymnema Sylvestre* , hydrogel, anti-oxidant activity, Microbial infections

OPE-114

ASSESSMENT OF BODANDCODREMOVALFROMDAIRY INDUSTRY WASTEWATERUSING*CHLORELLASP.*MICROALGA ISOLATEDFROM GANGA RIVER, HARIDWAR,INDIA

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ABSTRACT

Dairy industry wastewateris rich in suspended matter and other nutrient contents such as proteins, lipids, lactose, polysaccharides, etc.Dairy wastewater contains a high amount of organic and inorganic pollutants such as highbiochemical oxygen demand (BOD), chemical oxygen demand (COD), nitrogen and phosphorous, etc. which may cause significant damage to the receiving environment if discharged without proper treatment.Thus, efficient and biological treatment of dairy industry wastewater has become an emerging research area in recent times. Therefore, this study was conducted to assess the phycoremediation efficiency of *Chlorella sp.* isolated from the Ganga river at Haridwar, India. The experiments were conducted under controlled environmental conditions using different treatment concentrations of dairy wastewater (0,50, and 100%), operating temperatures (20, 25, and 30 °C), and light intensity (2000, 3000, and 4000 lx). The best conditions for phycoremediation experiments were optimized using a central composite design (CCD) of response surface methodology (RSM). As revealed from the optimization results, it was concluded that isolated *Chlorella sp*. was capable to remove significant contents of BOD (93%) and COD (84%) along with a maximum biomass production of1.704 g/Lusing 64.17% of dairy industry wastewater, 24.98 °C of reactor temperature, and 3492.41 lx of light intensity, respectively. Therefore, the finding of this study suggests that *Chlorellasp.*can be effectively used to treat dairy wastewater along with significant production of algal biomass which can be further used for the generation of low-cost biofuels and other materials.

Keyword: Dairy wastewater; phycoremediation, environmental pollution, nutrient richness,*Chlorella sp.*

OPE-115

GREEN APPROACHMANAGEMENT OF WASTEBY REDUCE RECYCLING AND REUSE

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ABSTRACT:

Today the world facing a largest problem in day to day life. The one of the biggest problem is pollution. The major problem of pollution is health problem due to water, air, and soil pollution. There is increase in urbanization in developed and developing country. Due to this pollution increases by the wastage materials without proper treatment on it. It can be control by with the help of suggestions of government agencies,panels, NGOs, social workers and ideas of industry experts to improving the systems. It gives us suitable information for the management of waste innovations to find out the scope for the improvement in the waste management for the wellbeing of human life.

Keywords: Waste Management, Recycle, Reuse.

OPE-116

ASSESSMENT OF NUTRITIONAL STATUS OF CHILDREN LIVING IN SLUM AREAS OF AGRA

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ABSTRACT

Background: Undernutrition continues to be a major cause of poor nutritional status and mortality among children in developing countries. It accounts for about half of all child deaths worldwide.Slum population is increased about 3% in 2011 census (26.31%) in compare to 2001 census (23.5%) in India.Anthropometry is the most useful tool for assessing the nutritional status of children.Objective: The present study was planned to assess the nutritional status of children by using the anthropometric measurements.Methods: The present study was conducted in slum areas of Agra. Sample was selected between the age group of 6-12 years by using the random sampling technique. Data was collected through modified standardized schedule. Anthropometric measurements namely height and weight were recorded. IAP growth standards were used to categorize undernutrition status.Results: Total sample size was 115 children. Majority of the subjects were male children 68 (59.13%). As per IAP guidelines, Majority of children 57 (49.56 %) were moderate undernourished followed by 25 (21.73%) children were mild undernourished. Least percentage of children 12 (10.43%) were severely undernourished.Conclusion: From the present study, we can conclude that there is a high prevalence of moderate undernourished children. It can be controlled by using the nutritional awareness approach including nutrition education, nutritious low cost recipe development, food preservation methods, and kitchen garden and properhygiene practices.

Keywords: slum area, undernutrition, anthropometric measurements, children

OPE-117

BIOCHEMICAL CHANGES IN *PITHECELLOBIUM DULCE* (ROXB.)BTH. FRUIT DURING ITS SUCCESSIVE STAGES OF DEVELOPMENT

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ABSTRACT

Pithecellobium dulce (Roxb.)Bth.is an underutilized fruit plant. To encourage use of the underutilized fruits and come upon the need of nutritional fruits the following work has been carried out for their nutritional analysis. For that morphological and physic-chemical parameters such as Length, Diameter, Volume, Moisture, Ash, pH and total acidity of fruits has been Measured. The Biochemical changes in carbohydrates, proteins and phenols have been observed during the development of the fruit. pH is High at ripened stage while total acidity is high at pre-ripened stage. Moisture is high at the young stage while ash content is high at ripened stage. Chlorophyll a and band total chlorophyll is high at maturity while carotene and anthocyanin is high at ripened stage. Reducing sugar is high at ripened stage, non-reducing sugar high at young stage and total sugar and starch is high in ripened stage. Proteins and phenols are high at ripened stage. Amylase activity is high at maturity and Invertase activity iss high at premature and Catalase activity is high at ripened stage. Also the histological observations are made during the successive stages of development.

Keywords:*Pithecellobium dulce*, underutilized fruits, developmental changes.

OPE-118

CONTRIBUTION OF WILD EDIBLE FRUITS TO NUTRITIONAL SECURITY

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ABSTRACT

In view of an increasing threat of climate changes and extreme weather conditions, there has been a burden for increasing agriculture and food supply to the growing population. Along with climate changes, due to changing food habit people are suffering from micronutrient deficiencies. In this context, wild edible plants are far important, as these plants are highly nutritious and keep the potential to adapt with different climatic conditions. Present paper reports, ethnobotanical use and nutrient analysis of 10 wild edible fruits commonly consumed by tribal people of Nashik district. All the examined fruits are found to be rich source of macro elements as well as microelements. *Mucuna prurians* showed the highest protein16.03% and nitrogen 2.94 % content.Iron content ranges from 5.55mg/100gm to 77.45mg/100gm and the highest content found in *Capparis zeylanis*. *Cucumis setosus* showed the highest content of phosphorus, sulphur and boron 509.8%, 70.04mg/100gm and 2.3mg/100gm respectively. *Cordia dichotoma* showed the highest content of potassium 3.55%. Ethnobotanical study revealed that some of these edible fruits may be used as food security, medicine as well as economic growth.

The study highlights the need to conserve wild edible species and use as a supplementary source nutrients for nutritional security and food soverginity.

Keywords: Wild edible fruits, Ethnobotany, Nutritive values, Food potential

OPE-119

MORINGA OLERICA MULTI-NUTRIENT FOOD SOURCE FOR MALNUTRITION: A REVIEW ARTICLE

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ABSTRACT

The Current food system – production, transportation, packing, storage, retail, loss and waste, feeds the majority of the world population and supports the live hoods of over 1 million people. However, an estimated 821 million people are currently under nourished, 151 million children's under five are stunted, 613 million women's and girl saged15 to 49 suffer from iron deficiency. To overcome to this problem Moringa is rich in nutrition owing to the presence of a variety of essential phytochemicals present in its leaves, pods and seeds. In fact, Moringa is said to provide 7 times more vitamin C than oranges, 10 times more vitamin A than carrots, 17 times more calcium than milk, 9 times more protein than yoghurt, 15 times more potassium than bananas and 25 times more iron than spinach. The review explores Moringa phytochemical constitutes and its medicinal properties.

Keywords:*Moringa,* malnutrition, phytochemical superfood

OPE-120

THE ROLE OF WILD VEGETABLE IN HUMAN DIET

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ABSTRACT

Wild vegetable (WV) are an important source of food for the tribes residing in Kalsubai-Harichandragarh wildlife Sanctuary. The area is occupied by large numbers of tribe‘s viz. Mahadev-koli, Thakars, Bhils and Ramoshies. The present paper deals with the various wild vegetable plants used by tribes of Kalsubai Harishchandragarh wild life sanctuary. During the present study 22 species of plant have been studied . Micronutrient deficiency is a universal problem. Which presently affects over two billion people worldwide, resulting in poor health .wild vegetables have been the mainstay of human diets for centuries. They can be harvested from backyard gardens, animal houses or agricultural fields. Important micronutrients such as vitamin and minerals needed to maintain health .

Proximate parameters moisture, ash, fat ,fiber, protein, carbohydrate ,and major minerals Ca, Na, K ,trace elements Fe ,Co are evaluated in the selected wild vegetables using the standard food analysis techniques.

OPE-121

ASSESSMENT OF NOISE POLLUTION IN URBAN AREAS OF PRAYAGRAJ (ALLAHABAD) CITY, UTTARPRADESH

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ABSTRACT

Noise is also considered the most dangerous pollution like air and water pollution.Along with water and air pollution, noise pollution is also emerging as a new threat to the residents of the city. Noise pollution caused by vehicles which is affecting the environment and quality of life directly and indirectly. Noise pollution can be considered as one of the main concerns of the world, especially in urban areas. Vehicular traffic is one of the major sources of noise pollution in urban areas. In the present study, the monitoring of noise level was carried out for the assessment of noise pollution levels at selected sites Chowk, Jhonstonganj and Civil lines during January, 2017 in Prayagraj (Allahabad). The monitored data were used to calculate various noise parameters, namely percentile noise level L_{10} and L_{90}, equivalent constant level (L_{eq}), noise pollution level (Lnp). The L_{10}were observed in the range between 78.00-90.68dB, 73.40-91.70dB, 78.24-89.74dB and L_{90}60.80-72.82dB, 54.94-75.54dB, 63.06-74.66dB with L_{eq} values 74.59-87.36dB, 70.15-88.20dB, 74.69-86.23dB and Lnp values 91.79-105.30dB, 88.61-105.92dB and 89.71-102.23dB respectively at Chowk, Jhonstonganj and Civil lines. The results of the study revealed that most of the times L_{eq} values were higher than the permissible limits as per CPCB standards. The higher values of Lnp indicate the possibilities of physiological and psychological problems caused by noise pollutions at various places in Prayagraj (Allahabad) city.

Keywords: Noise, Pollution, Health, Urban pollution, Vehicles

OPE 122

A SURVEY-BASED ANALYSIS OF THE EXTENT OF INVOLVEMENT OF NON-ESSENTIAL ALUMINUM METAL IN OUR LIVES FOR ITS RISK ASSESSMENT

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ABSTRACT

Aluminium (Al) is the one of the most abundant metal in the earth's crust and is omnipresent. Despite of being a nonessential metal in body, we are consuming or absorbing it via various sources. Aluminium exposure via medicines, cosmetics, food, water, aluminium cookware, foil and various aluminium based industrieshave allowed the aluminium to reach our system through various routes. Simultaneously aluminium is found to be responsible for Alzheimer‘, neural toxicity, osteomalacia, anemia and breast cancer. Aluminium can be eliminated from our body via urine or feces. However, too much load of aluminiumcan be the matter of concern and Unfortunately, cumulative effect of all these sources together have not been considered. The present study is a survey-based analysis via google form, which reflects the need to cut down our aluminium sources and spread the awareness about the same. The alternatives to reduce aluminium exposure were also suggested in thepaper.

Keywords: Aluminium, Survey, Food

ENVIRONMENT

SECTION

POSTER PRESENTATION

PPE-1

IDENTIFICATION OF PROMISING TRANSGRESSIVE SEGREGANTS IN CHICKPEA (*CICER ARIETINUM* L.)

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ABSTRACT

Chickpea is the second most important pulse crop in the world after dry bean. This crop has high productivity and holds prominent position in the international food grain trade. The aim of this study was to identify transgressive segregants for yield and yield components under the climate change in F_2 population of cross Vijay x BDNG-2015-3 in chickpea. Three generations of chickpea of the cross Vijay x BDNG-2015-3 were evaluated at Botany Section Farm, College of Agiculture, Dhule (Maharashtra) during *Rabi*, 2017. The field experiment was arranged in a randomized block design (RBD) with three replications. In most of the transgressive segregants, better parent yield was transgressed with transgression of one or several other characters. In general, highest proportion of transgressive segregants were recorded for grain yield per plant (20) followed by 100-seed weight (16), number of seeds per pod (14), number of pods per plant (13), plant spread (13), number of primary branches per plant (13), number of secondary branches per plant (13) and plant height (12). In most of the transgressive segregants, better parent yield was transgressed simultaneously with transgression of one or several other characters. Simultaneous transgression of grain yield per plant in association with plant height, number of primary branches per plant, number of secondary branches per plant, plant spread, number of pods per plant and 100-seed weight was observed more frequently. It was concluded that either grain yield per plant is dependent on this character or there may be linkage drag, so that genes responsible for these characters move together. The most promising transgressive segregants observed in F_2 generation of a cross Vijay x BDNG-2015-3 were needs to be evaluated further under different climate region and different sowing dates for funneling desirable recombinant for early, normal and late sowing under different climate regimes.

Key words: Transgressive segregation, Recombinants, Segregants, Chickpea.

PPE-2

RESPONSE OF *PENNISETUM GLAUCU* (L.) R.BR.CULTVATED ON ORGANIC MANURES AND BIOFERTILIZER

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ABSTRACT:

Pennisetumglaucum (L) R.BR cultivated on organic fertilizers like Vermicompost andNeem Cake, BiofertilizersAzotobacter and Phosphate solubilizing bacteria and NPK with respect to Control. Vermicompost (VC) and Neemcake (NC) available in local market were used to conduct the experiment at the rate 4444 kg ha-1. BiofertilizerInoraAzobacter and Inorabiophos as well as Vrakshamitra were used at the rate 10 kg, 10kg and 26 kg ha^{-1} respectively. Seeds were sown in the research plots of size 1.5x1.5 m. at the rate of 10 kg ha^{-1}. Total biomass is calculated at 70 DAS. DM kg ha^{-1} was recorded highest in VC followed by NPK, BIO, NC and lowest in CON. DM was statistically significant in VC and NPK. Chemical analyses of plant shown Nitrogen kg ha^{-1} and Total Crude protein kg ha^{-1} ,TRSkg ha^{-1}, P, K ,were recorded highest inVC.

Keywords-Pearmillet ,Organic manures, Vermicompost,Neem cake, Biofertilizers,*Pennisetumglaucum*

PPE-3

COMPARATIVE STUDY OF GROWTH AND DEVELOPMENT RESPECT TO THE SUPPLEMENTARY PROVIDED FOOD FOR GROWING CHICK OF POULTRY BIRDS

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ABSTRACT-

The present study was carried out to evaluate importance of bivalve molluscs as poultry supplementation. For this evaluation a poultry birds were provided different experimental formulation of whole crushed bivalve molluscs *Lamellidens marginalis* (L) along with shell and all white grain such as rice, wheat, maiz, sorghum. The effects of these formulations were analyzed by growth parameter of growing chicks of poultry birds.

Growth rate of experimental chicks on weight basis was recorded which were kept in different cages named as experimental and control groups for 30 days of experiment in the laboratory condition, which were observed day-by-day intervals. The comparative study of growth and development respect to the supplementation provided food for growing chicks of poultry birds. Simultaneously reading was taken on the basis of weight gain along with health of growing chicks in the cages, were setup in the laboratory condition. This study showed significant results in growth and development performance in chicks of poultry birds.

Key Words: Chicks of Poultry birds, *Lamellidens marginalis* (L), Feed formulation, Weight gain

PPE-4

ANALYSIS OF GENETIC VARIABILITY IN M_2 GENERATION OF COWPEA [*VIGNA UNGUICULAT* (L.)WALP.]

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ABSTRACT

Cowpea [Vigna unguiculata (L.) Walp.]known as ‗Labia' and in Marathi known as Chavali It belongs to family Fabaceae . Cowpea is one of the most important pulse crop in India .It contains carbohydrates , proteins, fats , vitamins and minerals . The seeds are major source of dietary protein in most developing countries.

The seeds of Cowpea var. Phule Pandhari (9708) were treated with 0.050%, 0.075%, 0.10% and 0.125% and Ethyl methane sulphonate and another lot of seeds were exposed to different doses 20 kR , 30 kR , 40 kR and 50 kR of gamma rays.Statistical analysis of phenotypic coefficient of variation (PCV) and genotypic coefficient of variation (GCV), heritability (h2) and genetic advance (GA) for Plant height, Number of pods per plant, Length of pod, Number of seeds per pod, 100 seeds weight was carried out. Induced variability was calculated in following treatments of EMS and gamma rays in seven different yield-contributing traits of Cowpea in the M2 generation. Plant height showed maximum phenotypic coefficient of variation (31.9670) followed by number of pods per plant (17.2426), 100 seed weight (14.4367),length of pod (6.3240), number of seeds per pods (5.3409).

Key Words – Cowpea, EMS, PCV, GCV etc.

PPE-5

GENETIC VARIABILITY, HERITABILITY AND GENETIC ADVANCE STUDIES FOR SEED YIELD AND YIELD CONTRIBUTING TRAITS IN SOYBEAN (*Glycine max* (L.) Merrill).

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ABSTRACT

An experiment was conducted at the experimental farm of ―All India co-ordinated Research Project on Soybean,‖ Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani during *kharif*, 2018 with a view to study the genetic variability, heritability and genetic advance for yield and yield contributing traits in soybean. 125 soybean germplasm accessions along with five national checks and three local checks were included in the present investigation.

Phenotypic coefficient of variation was higher in magnitude than the genotypic coefficient of variation in respect of all the characters. Number of branches per plant, number of pods per cluster, seed yield per plant, 100 seed weight, number of pod clusters per plant and number of nodes per plant shown high phenotypic and genotypic coefficient of variation. While, plant height and number of pods per plant exhibited moderate phenotypic and genotypic coefficient of variation. Oil content, seed yield per row, days to maturity and days to first flowering recorded low phenotypic and genotypic coefficient of variation. Heritability in broad sense was higher for almost all the characters particularly days to maturity, plant height, days to first flowering, 100 seed weight, seed yield per row, number of pods per plant, number of pod clusters per plant, number of nodes per plant, oil content and seed yield per plant. While, number of pods per cluster and number branches per plant showed moderate heritability. Genetic advance as percent of mean was highest for plant height, number pods per plant, number of pod clusters per plant, seed yield per row, number of nodes per plant, 100 seed weight, seed yield per plant and days to first flowering. The traits oil content and number of pods per cluster had low genetic advance as percent of mean. High heritability coupled with high genetic advance as percent of mean was observed for plant height, number of pods per plant, number of pod clusters per plant, seed yield per row, number of nodes per plant, 100 seed weight, seed yield per plant and days to first flowering.

Key words: Genetic advance, heritability, soybean, variability, yield.

PPE-6

IMPACT OF PHYSICAL FACTORS ON FUNGAL POPULATION OF SEEDS

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ABSTRACT

Agricultural cereal production depends on the quality of seeds stored under controlled conditions until the next growing season. Some of the crops can maintain 50% seed germination at least for two years under dry conditions of storage. Important factors that can influence seed quality under storage are the climate of the location in a specific geographical area. Moreover, for appropriate seed storage, proper drying of seed to a desirable moisture content , seed packing and protection from rain , dust, snow, rodents and insects , seed-borne pathogens and gaseous atmosphere of storerooms are crucial. All these factors affect seed germination. Appropriate conditions for seed storage largely depend on the period of time the seeds must to be stored. Usually, the seeds deteriorate in the field or get damaged during harvest or drying, so that low-quality seeds are often placed under storage. The quality is reduced further in poorly ventilated, damp and hot warehouses. Healthy seed are important for the production of healthy crop. Seeds are responsible for disease transmission. It happens either in the field or in the post harvest storage condition. Seed get deteriorated which cause great economic loss. It is imperative to focus on seed health which is detrimental to reduce the production cost and considerable yield losses to sustain the food security. Seed maturity, storage containers and storage periods are very important for the increases of fungal incidence. The present study attempt has been made on the effect of storage condition and storage period, on the fungal biodiversity of seeds. Different seed varieties of maize, wheat and jowar were collected from various places of Marathwada region. Maximum populations of fungi were found on maize followed to jowar and wheat. *Aspergillus, Fusarium, PenicilliumAlternaria* and *Rhizopus* genus showed higher incidence as compared to other fungi It is observed that maximum incidence of fungi occurred on the seeds stored in polythin bags and maximum count of mycoflora were recorded on eight months of storage period.

Key words: Maize, Wheat, Jowar varieties, seed born fungi, biodiversity, storage container storage period

PPE-7

ROLE OF EXOGENOUSLY APPLIED STRESS PROTECTANTS IN PLANTS UNDER FLUORIDE STRESS

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ABSTRACT

In recent year, increasing level of fluoride (F^-) in water, soil and air has become a most toxic for living organisms including human, microbes and plants. Excess F^- increases toxicity through fluorosis disease in human and cattle particularly in endemic areas. In plants, accumulation of F^- causes chlorosis, oxidative stress, inhibition of water and mineral uptake, enzymes activities, seed germination, growth and yield by changing the hormonal level and gene expression. Some plants have innate ability for survival in endemic areas by maintaining low level of intra cellular F^-, high level of antioxidants, osmolytes, stress proteins and hormones.

Exogenously applied various stress protectants such as plant growth regulators (PGRs), mineral chemicals and other compounds mitigate the toxicity by regulating various metabolic pathways. Gibberellic acid 3 (GA), Salicylic acid, spermidine and spermine (polyamines), melatonin (Mel), glycine betaine (cytosolute) and sodium metasilicate (silicon) play protective roles in plants under F^- stress. Binding of F^- with Ca (a signalling molecule) reduces its level in cell and alters different signalling pathways. Ca compounds viz $Ca(OH)_2$, $Ca(NO_3)_2$, and $CaCl_2$ play important role in the protection by reducing F^- uptake and improving metabolic pathways through gene expression. Use of silver nanoparticle (AgNP) and silicon nanoparticles (SiNP) nanotechnology, is effective approach for reduction of toxicity F^- in plants. These stress protectants improve seed germination, growth, defense system (osmolytes, antioxidants, glyoxalase) through gene expression, advanced study should be focused on metabolic pathways and molecular mechanisms of the tolerance.

Keywords: Antioxidants; Cytosolutes, Fluoride accumulation; Growth; Hormones..

PPE-8

OPPORTUNITY AND CHALLENGE:BAMBOO BASED AGROFORESTRY SYSTEM

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ABSTRACT

Bamboo is one of the fastest growing plants which have ability to survive in a wide range of climatic and edaphic conditions, know to be as ―The Green Gold‖ of the 21th century. There are 124 species, belonging to 23 genera, found naturally or under cultivation. The main genera in India are: *Arundinaria, Bambusa, Cephalostachyum, Chimonobambusa, Gigantochloa, lndocalamus, Melocanna, Naohouseaua* etc. Bamboo is propagated through the rhizomes, seed and culms cuttings. Bamboo based agroforestry system is a good option for sustainable land use management in India. Bamboos require 4 to 5 years to yield first harvest depend upon the species. Agroforestry system can be raised for enhancing the socio-economic and ecological conditions. They can be used as intercrops for enhancing productivity, wind break, leaf for fodder, permaculture, thorns for fencing etc. studies suggests that cash outflow of 30,550/ha to 48,000/ha can be drawn from 7th year onward. Well managed bamboo based agroforestry system can be beneficial to the farmers for fetching regular income and up lifting their living standard. Therefore, the bamboo based agroforestry system has economic and environmental advantages rather than sole crop; the system could be one of best alternative livelihood options for farmers.

***Keyword*:** Bamboo, Agroforestry, Economic, Livelihood

PPE-9

LEVEL OF POPULATION RESOURCES IN AHMEDNAGAR DISTRICT OF MAHARASHTRA STATE, INDIA.

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ABSTRACT:

This research paper depends on the secondary source of information; this information is taken from Ahmednagar District census 2011. To study the level of human resources in Ahmednagar district, six factors have been considered namely, population growth, population density, educational facilities, literacy, sex ratio and health facilities. Ranking and mean method is used to level these elements. Level of population resources are mainly made up of three types, the first less than four, five to eight and nine to thirteen respectively name of level are progressive, moderate and low development. The level population resource is calculated according to the tehsil wise of Ahmednagar district, there are total 14 talukas in this Ahmednagar district.

***Keywords*:** Human Resources, Population, Ranking, Characteristics.

PPE-10

BEE KEEPING INDUSTRY IN INDIA

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ABSTRACT

In this review paper the development of beekeeping in Maharashtra and India Beekeeping is also known as apiculture is an interesting hobby and an ideal agro-based subsidiary enterprise providing supplementary and sometimes major income to the people in the rural areas. A bee keeper-apiarist may keep bees in order to collect honey and bee wax for the purpose of pollinating crops or to produce bees for sale to other bee keeper‘s. apiary is place where bees kept beekeeping is subsidiary level occupation and entrepreneurs available for to convenced farmers about how these business is beneficial in commercial point of view. Main purpose of beekeeping is pollination purpose and not for honey, pollen and wax only. So, future of beekeeping will may bright when famers get knowledge. In Maharashtra courses running last from 20 years but still studied not popularised and failures seen due to lack of practical knowledge. For beekeeping species like *Apis dorsata* least number of skilled workers available now, hence still no breeds developed in India and no one do this challenging work on such broods, farmers have phobia about bees stinging. After Independence, the government of India took policy decision to receive various traditional village industries and an all India Khadi and Village Industries Board (KVIB) was formed in 1954.These institute gives training for newly aspirant learners. Beekeeping programme was implemented successfully few names mentioned as Kolhapur Gokulchirgoan MIDC companies. This training gives facilitating feature of beekeeping equipment‘s, provides bee boxes and frame hives. Cities like Kolhapur, Sangali where farmers attract towards apiculture as a side business and it is well popularised, but our city like Ahmednagar farmers have no idea about programmes of Apiculture still hence no one aware and interested they laugh when educated peoples discuss with them on such topics. We should need to diversify the farmers by conveying and sophisticating them about beekeeping as a commercially valuable and one of the benefiting programme for human health and wealth, eco- friendly. Tomorrows bright future of these beekeeping, learning and teaching programmes in the hands of youths like us.

Keywords :- Beekeeping, Business, Farmer, Honeybee.

PPE-11

KEY INITIATIVE FOR FOOD INDUSTRY IN INDIA

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ABSTRACT

India is 2nd largest producer of food and can emerge as a major –food basket of the world‖. Rising income, globalization and shifting consumer preferences offer a tremendous scope for tremendous jump in both production and processing. Different government affiliated agency responsible for promotion and regulation of food processing sector in an efficient manner. These mainly include Ministry of Food Processing Industries, Mega Food Park, Supply chain, Market Intelligence, Agri Export Zone, and Foreign Direct Investment etc.

Keywords*:* MegaFood Park, AEZ, Food processing Industry**.**

PPE-12

PHYTOMEDICINAL SEQUENTIALLY OF THERAPEUTIC FLORA MAKE EXPLOIT OF ETHNIC"S WORKING CLASS OF SATANATAHSIL NASHIK DISTRICT.

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ABSTRACT:

The present paper deals with the Phyto medicinal used by the ethnic peoples of Satana District Nashik (MS) India. The information is collected from tribal people of Baglan. By future personally to the Vaidus and medicine man.By taking interviews during the year 2019-2020. They conventionally use the plant possessions as medicine. This awareness is percolates from age group to age group. They use therapeutic plants as a medicine on widespreaddisease But outstanding to deforestation, thrashing of biodiversity and unsystematicmanagement of wild and expected resources many expensive herbs are at the phase of extinction. A total of twenty medicinal plants species scattered in twenty three families are familiar. The accepted ethno medicinal plants were mostly used for to cure various common diseases, infections and general failing.

***Keywords*:**Phyto medicinal plants, Vaidus, failing

PPE-13

PHYTOCHEMICAL ANALYSIS AND ANTIMICROBIAL ACTIVITY OF SALICYLICACID(SA)ANDJASMONICACID(JA)TREATEDPLANTSOF ACALYPHAINDICA.LINN.

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ABSTRACT:
AcalyphaindicaLinn.belongs to Euphorbiaceacefamily,distributed inthe world wide.Itismajorsource ofbioactive compounds.In the present work, wetryto assess thephytochemicalandantimicrobialactivityofSalicylicacid(SA) andJasmonicacid(JA)treatedAcalyphaplants.Plantsweretreatedwithaloneand differentconcentrationcombinationsofandJA.After55daystreatedplantleaves were used forextractions. Methanol and Chloroform extractionswerepreparedby Soxhletmethodand antimicrobialactivitycarriedoutbyusing agarwelldiffusion method.Theextractionswereevaluatedagainstongram positiveandnegative bacteria and fungi like Bacillus subtilis,Escherichiacoli,Proteusvulgarius, Salmonellatyphi,Pseudomonasaeruginosa,Aspergillusniger,Candidaalbicansand Fusarium oxysporum.Inthiswork,wereportSA and JA treated plantmethanol extractswereshowedpromisingsecondarymetabolites,antibacterialandantifungal activitywhencomparedtocontrolplants.Especially,alone 400µM JA treated plantswereshowedmoreactivityagainstBacillussubtilis(21mm)andcombination ofSA&JAtreatedplantsareshowed high activityagainstBacillussubtilis(18mm), Pseudomonasaeruginosa(12mm),Salmonellatyphi(19mm),Escherichiacoli(14mm), Proteusvulgarius(23mm)andCandidaalbicans(21mm)respectively.Theresult indicatedthat,combination of SA and JA treated plantmethanolexractswere a major source of bio activecompounds,which are lead stohigh antimicrobial activity against bacterial and fungal cultures,when compared to alone and combination of SA and JA treated chloroformextractions.

Keywords:Acalyphaindica.L,Agarwelldiffusionmethod,Antimicrobialactivity.

PPE-14

TAXONOMIC EVALUATION OF NEW MAMMALIAN NEMATODE PARASITES *HEREPATOSTRONGYLUS* (BAYLIS,1931) FROM *VARANUS INDICUS*

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ABSTRACT

The genus Herpatostrangylus was erected by Baylis,1931 to accommodate two species of Herpetostrangylus pythonsis and Herpatostrangylus varani.The worm is filiform very coiled cuticle is striated ,mouth is surrounded reduced lips,There are three lips with papillae,oesophagus muscular and posterior slightely dilated ,male which have dorsal lobe bursa ,spicule equal ,gubernaculum is triangular.The present study worm was having sharief in possessing the gubernaculum right spicule provided with spurlive projection .

PPE-15

A REVIEW ARTICLE ON "THE ROLE OF ORGANOMAGNESIUM IN THE SYNTHESIS OF PYRIDYL-THIAZOLE"

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ABSTRACT:-

The present review attempts to bring out some important and significant developments of pyridyl-thiazole heterocyclic compounds in pharmaceutical sector, in the world of thiopeptide antibiotics, in the area of luminescence and pyridyl-thiazole as a Ligand in coordination chemistry in recent years. The general purpose of this article is to give an exhaustive and clear picture in biheteroaryl, thiazole-pyridyl bond formation as well as its application in the synthesis of natural products, pharmaceuticals, catalyst, ligands and materials. Accordingly, this review aims to systematize the current information in this field and provide some perspectives about some cross coupng reactions using Grignard Reagent.

Keywords **:-**Biheteroaryl, Luminescence, Antimicrobial activity, Fatostatin, Micrococcine P1

PPE-16

ASSESSMENT OF SURFACE WATER QUALITY OF PERUMBA RIVER, KERALA

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ABSTRACT

River Perumba is one of the significant freshwater rivers in the Malabar region of Kerala. A study was conducted during February 2017 to assess the Physico-chemical properties of the Perumba river water. Samples collected from four different locations, and the distance between the sampling site was almost equal along the stretch of the river (51 km in length). The sampling sites were Perumbadavu (Site 1), Mathamangalam (Site 2), Thottamkadavu (Site 3), and Kandankali (Site 4). Subsequently, analyzed the crucial parameters like pH, temperature, EC, TDS, Turbidity, TSS, TS, DO, Acidity, Alkalinity, Hardness, Cl $NO3^{-}$, $PO4^{3-}$, $SO4^{2-}$, F^{-}, Ca^{2+} and K+. Made correlation matrix of Physico-Chemical parameters using statistical correlation, followed by analyzing results. There was a high, moderate, and low degree of positive correlations between the parameters and negative correlations. EC, TDS, Turbidity, TSS, TS, Hardness, Cl^{-}, and $SO4^{2-}$ were high in Site-3 and Site-4 of River Perumba and found high phosphate concentration in Site-3. The water was salty in site-4, intermediate in site-3, and the remaining site-2 and site-1 were freshwater. Seen moderate values for potassium in the first three sites and suddenly increases up at the river mouth (site4), along with higher calcium content in Perumba River at site 4. Found a high degree of correlation (0.3-0.9) between EC and TDS and obtained a moderate degree of correlation (0.5-0.75) between pH and TA, TDS and TA, TA and TH. River Perumba is experiencing severe problems such as saline water intrusion from the sea, increasing hardness due to extensive shrimp cultivation, and high turbidity due to wastewater discharge from the urban settlement. The analysis result indicates the deterioration of the river due to various anthropogenic activities, changing climatic and environmental conditions, and pollution.

Keywords: Correlation Matrix, Physico-chemical parameters, River water, Statistical correlation

PPE-17

CLIMATE CHANGE – A GLOBAL PROBLEM

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ABSTRACT

In the present context ,not only India but the whole world is facing a serious problem of climate change, which can not only be felt in a large area, but its impact is visible in the whole world, which is also a burning issue of the present. To deal with this problem, all the countries of the world will have to work together, otherwise its consequences will be widely seen in the near future and the existence of some big cities, some island may also end from the map. Glaciers are melting and the sea level is rising, seeing that the situation in the near future can be terrible. Climate change along with natural causes as well as human causes, global warming, greenhouse gases, carbon dioxide, methane gas and chlorofluorocarbons gas.Due to climate change, natural calamities like floods, droughts (rainfall irregularities), hurricanes are seen every day and there is a decrease in biodiversity, according to the Intergovernmental Panel on Climate Change (IPCC) the target of 1.4 degree Celsius temperature. To meet global emissions needs to be reduced by 45% and the Climate Change Framework Conference (UNFCCC) in its National Level Report to achieve the Paris Agreement's goal to keep global temperatures at 1.5 ° C by the end of the century Called for the adoption of several ambitious climate action plans for the international treaty The main objective of the Kyoto Protocol is to prevent climate change caused by global warming and to reduce greenhouse gas emissions caused by man-made CO2 emissions. India was ranked 10th (63.98 out of 100) in the Climate Change Performance Index (CCPI) Index-2021 and in the Index 2019, India was ranked ninth with a score of 66.02.

Keywords:- climate, UNFCCC, CCPI, IPCC

PPE-18

IN SILICO ANALYSIS OF GENES RESPONSIBLE FOR ENHANCING BIOFUEL POTENTIAL OF *CHLORELLA PYRENOIDOSA*

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ABSTRACT

In present scenario alarming energy crisis and environmental protection are major global issues. In this direction there is need of serious attempts to search for renewable and environmentally safe energy resources. Microalgae are known as third generation biofuels as they algal cells are ―oil rich‖ energy packets that provide 10-100 times more biomass energy than other traditional crops. In stress conditions, the production of TAG (Triacyl glyceride) enhances which help microalgae to overcome stress conditions. In present study, the expression patterns of lipid biosynthesis-related genes in both photoautotrophic conditions and heterotrophic conditions in Chlorella pyrenoidosa were studied. The sample of algal oil was analyzed spectroscopically to evaluate its biodiesel suitability. Expression level of several genes viz. rbsL, me g6562, accA, a ccD, dgat g2354, dgat g3280 and dgat g7063 which encode corresponding enzymes or sub units of malic enzyme, ACCase and diacylglycerol acyltransferase in the de novo TAG (triacyl glycerol) biosynthesis pathway are highly related to lipid accumulation during shift from heterotrophy into photoautotrophy and might be act as target genes for genetic modification in order to increase biofuel potential of algal species.

PPE-19

INVESTIGATIVE REPORT ON SICKLE CELL ANAEMIA FROM SAKRI TAHSIL.

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ABSTRACT:

Sickle cell disorder is a group of diseases caused by a point mutation at sixth position in the beta globin chain, valis substituting glutamic acid due to which in deoxygenated state, shape of erythrocytes change to Sickle shape and also the fragility of cell membrane increase. In India it is more common in central and Southern parts of the country. It is the second most common hemoglobin apathy, next to thalassaemia in India. In 1952 Lehman and Catbush reported the presence of the in India among the tribal of Nigeria Hills for the first time. This was largely because most of the subsequent reports spread a misconception that the sickle gene in India was confined to the tribal population are some scheduled caste only.

PPE-20

MENTAL HEALTH WITH MUSIC IS IN YOUR POCKET...

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ABSTRACT

After listening this‘ save earth save planet slogan the first thing which comes in your mind is to save trees and the fresh water on the Earth…..Music , A common sound for all living creatures. In recent years, there have been a lot of studies coming up which show how music not just affects humans but all the living creatures in the universe. Some of them include 'The effect of music on plants'. According to a study in Annamalia University , the balsam plants were found to have grown faster when exposed to music, as compared to a control group of plants that had no music exposure during the same time period. Subsequently, the researchers concluded that the violin had the most significant positive impact on the growth of the plants. A decade later , another study was conducted by Dorothy Retallack, in which ,some plants were exposed to classical music and others to rock music. Surprisingly, plants exposed to rock music grew away from the speakers unlike the ones which were exposed to classical music for they grew towards and intertwined with themselves

PPE-21

ANTICANCERANDANTIOXIDANTPROPERTIES OF CACTUS(OPUNTIAFICUS-INDICA)

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ABSTRACT

Inthisreviewpapertheextensionofmemberofplantfamilycactaceae,whichinclude127generawi th 1750 known species. The name "Cactus " originally used by Theophrastus for spiny plant.Mostofthecactiliveinextremelydryenvironmentsandtheyhavethickned,fleshypartsadap tedtostorewater. Many cacti have short growing seasons and long dormancies. Cactus (opuntia) is being used for many years as common vegetable and as medicine by native AmericansandMexicans.Cactuspearcontainpectin,carotenes,phenoliccontent,ascorbicaci d,allofwhichhaveantioxidantactivity.Duetohighcontentofflavonoids Cactusarereportedtohav eanti-cancerandantioxidantproperties.Thisconsidered as a weak poison and used as medicine for treatmentofinflammation and also used as detoxification agentforsnakebite.Currentlyavailablepreventiveagentsarelimitedandtheagentsarecostlyw ithmoresideeffects.Naturalproductsuchasgrapeseed,greenteaandcactusarereportedtohave anticancereffectsandhencetheyareusedinchemopreventionofcancer.Theextractofcactusfr uitArizonashowsanticancereffectinculturedcellsandinanimalmodel.Arizonaextracteffectiv elyinhibitedcancercell growth and expression of tumor related gene. It also affected cell cyclecancerousG1anddecreasingG2andSphases.TheaqueousextractofCactuspearusedat sixconcentration(0,0.5,1,5,10or25%)totreatcancercellsfor1,3or5days.Cancerchemopreve ntionisnewapproachincancerpreventioninwhichnaturalremediesareusedinnormalandhig hriskpopulation.Retinamide(4HPR)iscurrentlyusedaschemopreventionagents.Themecha nismoftheanti-cancerandantioxidanteffectsof cactuspear(opuntiaficus- Indica)needstobefurtherstudied. "Nature itself is the best physician "

Keywords:*Cactuspear,cellcycle,chemoprevention,detoxification,ascorbicacid,carotene.*

PPE-22

ROLE OF GRAM PANCHAYAT IN CHILD SURVIVAL

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ABSTRACT

The 73rd amendment of the Indian provides for the devolution of powers and responsibilities to Panchayati Raj Institutions (PRIs). This amendment provided that the PRIs would have 29 subjects (item no. 25, 11th schedule, Article 243 G)including maternal and child health care in rural areas. The amendments of rural local self-government bodies providedthe responsibility to plan,implement and monitor developmental activities as perthe needs of local people. In the above context, role of PRIs have been envisaged. Pradhan as a PRI member, have crucial role to play in implementation of child care services and ensure child survival. The Pradhan is expected to coordinate with Anganwadi centre, sub centre and health sub-centre, PHC. Pradhan is the chairperson of the VHSNC and expected maintain close contact with ANM, ASHA, AWW for the effective implementation of mother and child health (MCH) care services. He along with other PRI members GPM etc are also expected to monitor and facilitate the programmes and schemes including MCH being implemented.

AWC runs number of activities for MCH care like nutrition, immunisation, health check-up, referral services etc. Home Based New Born Care (HBNC) a flagship programme of Ministry of Health and Family Welfare is under implementation and ASHA is the main vehicle to implement it. PRI member‘s active involvement have a potential to improve the child survival and care. They have a say in the community, many a time the community does not respond to health workers like ANM, ASHA, ANM, but Pradhan being an authority in the village has a greater influence among the people and can help in effective implementation of the child care services. He also implement MGNREGA, which may help the parents of children to improve their livelihood. But fund functions and functionaries have not been devolved. There are numerous challenges, which need to be addressed.

PPE-23

IMPACT OF EDUCATIONAL PROGRAMME ON RURAL WOMEN ABOUT HAZARDS OF POLYTHENE

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ABSTRACT:

People use in our day today life plastic in excessive quantity threat causes environment pollution. Which creates lots of health problem, so its need aware the people hazards of polythene.Objectives of the study were to study the personal, economic and social characteristics of the rural women, to design implement educational programme for rural women about hazards of polythene,to study the effect of educational programme on rural women and to establish relation between dependent and independent variables. Experimental design of social research (without control) was be used in conducting this investigation where in before and after evaluation of the change in knowledge and attitude of participants was be assessed. The data for study was collected from rural women, 60 women Kamnapur village and 60 women Naya Akola. Total 120 samples were randomly selected for the study. Over three fourth respondent (60 percent) found to possess the before knowledge and two third of respondent (18.33%) was after hazards of polythene , knowledge to a medium level. With was noted to be maximum as compared to other categories followed by little over (15%) before (70.83 %) after knowledge of respondents possessing high level. By and large it could be summarized that the majority of the respondent had better after knowledge about hazards of polythene. At post- test stage. 37,05percent 54.16 percent and 08.33percent respondent belonged to highly favourable, favourable and unfavourable attitude level respectively. The 0bserved pre-test practise level was medium in 50.83percent respondent and low and high in different 23.33 and 6.94 respondents. The level of knowledge and attitude about hazards of polythene education programme on rural women were positive influenced education through developed education material.

Keywords: Educational programme,rural women,harzards of polythene,Impact

PPE-24

FLUORIDE CONTENT OF WATER AND FOOD IN FLUOROTIC VILLAGE AND PREVALENCE OF SKELETAL FLUOROSIS

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ABSTRACT

The major part of fluoride ingested in areas endemic to fluorosis is water, although some food materials contribute considerable amount to total intake. The present study was carried out to assess accumulation of fluoride in cereals, pulses and vegetables grown in fluoride endemic area of the Chandrapur district, Maharashtra, India. This study reports fluoride accumulation was found to be variable in collected food samples (Wheat, Sorghum, Red Gram, Soybean, Bengal Gram, Red Chilly, Brinjal and Tomato). Maximum fluoride concentration was found in Red Chilly (1.7 ± 0.3633) and minimum in Wheat (0.2 ± 0.0605), where fluoride concentration in water samples was found to be 5.99 ppm with overall 19.53% prevalence of skeletal fluorosis.

Keywords: Fluoride, Cereals, Pulses, Vegetables, Chandrapur District, Maharashtra.

PPE-25

A STUDY OF HAZARDOUS WASTE AND ITS IMPACT ON HUMAN HEALTH

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ABSTRACT

The Urban spread, population growth, rise in living standards, and industrialization has resulted in waste creation in developing countries. Many solid waste sources contribute to hazardous waste which poses many pollution problems. A material is said to be waste when it is discarded without looking to be compensated for its intrinsic value. These wastes may cause hazard to the human health or the environment (soil, air, water) when not properly treated, stored, transported or disposed off which has paid attention both at the international level and at the level of individual countries. Currently in India though hazardous wastes, emanations and liquid wastes are regulated, and the solid wastes often are disposed offcarelessly posing health and environmental risk. In view of this, management of hazardous wastes including their disposal in environment friendly and economically viable way is very important and therefore suggestions along with the better strategies are made. Among all of the categories of the wastes, solid waste contributes a major share towards environmental degradation.The purpose of this study is to understand hazardous waste and its impact on human health and to address hazardous waste issues.The results revealed that hazardous waste, when incorrectly treated, processed and disposedoff creates air pollution,reduction in water supply and the spread of human diseases. It makes cities untidy and dirty, affects people's health, harms flora and fauna, and hampers the economy of thecountries.

Keywords: Hazardous waste; Treatment; Disposal; Management; Regulations; Waste minimization; Remediation

Keywords: Hazardouswaste; Treatment; Disposal; Management; Regulations; Wasteminimization; Remediation

PPE-26

CURRENT ASPECTS OF WOMEN ENTREPRENEURSHIP

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ABSTRACT:

Women Entrepreneurs may be defined as the women or a group of women who initiate, organize and operate a business enterprise. Patriarchy, cultural and social attitudes exist all over India and they are the main obstacles to keep away women from Entrepreneurship. Women are increasingly becoming conscious of their existence, their rights and their work situations. India‘s female labor force participation (FLFP) rate has remained one of the lowest in the world. Today women entrepreneurs represent a group of women who have their way for exploring new avenues of economic participation. With the help of numerous government assistance schemes like government policies, programmes and institutional support keen for encouraging women entrepreneurship. Despite all the social hurdles, Indian women stand tall from the rest of the crowd and are applauded for their achievements in their respective field.

The main objective of the research paper is to study status of women entrepreneurship, problems of women entrepreneurs, India‘s female labor force participation and government schemes and assistance for encouraging women entrepreneurship. The study is mainly based on secondary data and related materials and observations.

Keywords:Women Entrepreneurship, Female Labour Force Participation, NAYE etc.

LIFE SCIENCES SECTION ORAL PRESENTATION

OPZ-1

DIVERSITY OF AVIFAUNA IN AND AROUND MANDA TUKUM LAKE OF MUL TEHSIL OF CHANDRAPUR DISTRICT

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ABSTRACT

Freshwater lakes are important types of wetlands which play a vital role in the diversity of birds worldwide. Avian species distribution of a particular area is influenced by limnological characteristics of prevailing water bodies in the area. In this context the present study was carried out to document the diversity of avifauna in and around Manda Tukum Lake of village Manda Tukum, located in Mul Tehsil of Chandrapur district. Since no data pertaining to avifauna of this region is available it was decided to prepare a checklist of birds of this area during 2017-2019. Based on the observation made over a period of time a wide variety of birds were found to inhabit the lake and its vicinity nearby. Based on our studies it is found that about 65 species of birds were present in the lake and its peripheral areas. The maximum species were sighted during the winter season followed by summer and monsoon season respectively.

***Keywords**:* Manda Tukum lake, Mul tehsil, Avifauna, Checklist, Chandrapur district.

OPZ-2

MICROBIAL SURFACTANT: EMERGING TRENDS AND PROMISING STRATEGIES

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ABSTRACT

Many toxic constituents have been introduced into the environment through human activities. These are constituent's danger to human health when they are eventually or directly in contact with soil particles. Microbial surfactants are active compounds that are produced at the microbial cell surface or excreted, and decrease surface and interfacial tension. Microbial surfactants are attractive much curiosity due to their latent advantages over their synthetic complements in many fields on both sides of environmental, food, biomedical, and other industrial applications. As to the use of microbial surfactant for aggressive hydrocarbon pollution in marine biotopes, itwould appear to be possible in the case of pollution occurring in closed systems (e.g. tanks), and encouraging results have been obtained. In distinction, its use to treat pollution in marine open environments is much more hypothetical and could only be applied to very limited coastal areas. Microbial surfactant applications in the environmental industries are promising due to their biodegradability, low toxicity, and effectiveness in enhancing biodegradation and solubilization of low solubility compounds. In agriculture, microbial surfactants can be used for plant pathogen elimination and for increasing the bioavailability of nutrients for beneficial plant-associated microbes. Microbial surfactants can widely be applied for improving agricultural soil quality by soil remediation. The recent developments discussed here would not only give an overview of pertinent parameters for economic microbial surfactant production but would also bring to front multiple strategies that would open up new avenues of research on microbial surfactant production. This would go a long way in making microbial surfactants a commercially successful compound of the recent period.

Keywords: microbial surfactant, Bioremediation, Agriculture, Microbial enhanced oil recovery (MEOR)

OPZ-3

MITIGATION OF HEAVY METALS FROM THE SOIL THROUGH *IN-VITRO* AND *IN-VIVO* PRODUCED PLANTS OF *IMPATIENTSBALSAMINA* L.

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ABSTRACT:
In this research Heavy Metal extraction capacity or phytoremediation capacity of *Impatiens balsamina* L. was assessed. Here, two different approaches *In-vitro* and *In-vivo* were used for the production of plantlets. *In-vitro* approach involved tissue culture approach and *In-vivo* direct through media (soil, cocopeat, mosses). Seeds were used for the production of plantlets. After 30 days of seedlings development all the plantlets which are produced through *In-vitro* and *In-vivo* approaches and plants were transplanted in the pots and treated with two metals Lead and Cadmium in the form of Pb $(NO_3)_2$and Cd $(NO_3)_2$. Different concentrations were selected for Lead200mg, 400mg, 600mg, 800mg/Kg and for Cadmium 5mg, 10mg, 15mg, and 20mg/Kg. Each pot was filled with 5Kg of soil. The metals were given directly through root zone of plants in solution form. After incubation time of 75 days mature and treated plants were collected and each and every part of every concentration treated plants were collected and AAS (Atomic Absorption Spectroscopy) was assessed. As compare to In-vivo produced plants In-vitro produced plants has more capacity to accumulate Lead and Cadmium.
Keywords:*In-vitro* approach, *In-vivo* approach, Lead, Cadmium, *Impatiens balsamina* L., Phytoremediation.

OPZ-4

A SURVEY ON PREVALENCE OF CESTODE PARASITES IN FRESHWATER FISHES FROM WAKADI DAM DISTRICT PARBHANI (M.S) INDIA

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ABSTRACT

The present investigation deals prevalance of three cestode parasites viz. Silurotaenia sp., Gangesia sp. and Circumonchobothria sp. which are collected from the intestine of a freshwater fishes like *Rita hastata, Wallago attu* and *Mystuscemballus armatus* at different collection sites of Wakadi dam district Parbhani (M.S.) India during Jun 2017 to May 2018 and Jun 2018 to May 2019 respectively during the different season. The result of investigation was based on the different aspects like season, presence of food and predators in the dam to find the infection in the above mentioned species Silurotaenia sp., Gangesia sp. and Circumonchobothria sp. After gone through the investigation following result was recorded. All three season shows different graph of infection i.e, in summer season 40.33%, followed by winter season 36.27 %, whereas infection was low in monsoon season 26.78%, the results of present study clearly indicate that high prevalence was recorded with high intensity in summer followed by winter whereas infection was lowest in monsoon. These major changes found due to the environmental factors and feeding habitat of fishes that influences the seasonality directly or indirectly.

OPZ-5

A *TEREDOLITE* REPORT FROM FULLER"S EARTH OF KAPURDI FORMATION, BARMER BASIN, WESTERN RAJASTHAN, INDIA

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ABSTRACT

We document the first report of *Teredolite* of the Eocene age at Bhadkha, SavadhanokiDhani, and Kapurdi village from Fuller's Earth of Kapurdi Formation, Barmer Basin, Western Rajasthan, India. The study area is situated 20 km far from Barmer city on the Barmer-Jaisalmer highway NH-68. *Teredolite*wood-boring trace fossils generated by marine bivalve of the Teredinidae (Teredo) and Pholadidae families, *which are related to clams and oysters.* Groups to extend to short, club-like to cylinders in the wood ground, uniformly tightens from the foundation of the essential chamber to the gap; neck district isn't isolated from the chamber. Feeding and dwelling traces are the behavior of *Teredolites* produce by wood-boring suspension feeders or bivalves (*Teredo*). Based on the presence of foraminifera, Mollusks, and this report, The Kapurdi Formation of Barmer Basin suggests a marine palaeontological environment.

Keywords*:Teredolite*,palaeontological environment, *Fuller's Earth,* Kapurdi Formation, Barmer Basin.

OPZ-6

METABOLIC RECOGNITION OF GLYCOGEN IN INDONAIA CAERULEUS

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ABSTRACT:

The environment and biological conditions have notable impact on the metabolic activities in all organisms. Glycogen is the main source of energy and its metabolism mostly get affected by influence of the environmental condition, especially the warmness. Taken into consideration the environmental impact on the metabolic activities of an organism, we report here the site-specific variations inglycogen content of freshwater bivalve*Indonaia caeruleus*collected from two diverse sites of Godavari Riverat Kaigaon near Aurangabadhaving 55-60 mm shell span i.e.,from upstream and downstream habitat of Paithan near Aurangabad for determination of changes in the glycogen content during summer season.For biochemical analysis of glycogen,100 mg tissueof the mantle, hepatopancreas, gonad, foot, gills, anterior adductor muscles and posterior adductor muscles was used for the analysis.Glycogen was determined by using sulphophospho-vanilline method proposed by Barnes and Blackstock. The results are expressed as mg. glycogen content per 100 mg of wet tissue.The data analysed shownin the form of table.

Keywords:Metabolic, site specific, hepato-pancreas, fresh water bivalves, mantle.

OPZ-7

IMPACT OF EPIDEMIOLOGY ON FEMALE AND MALE INFERTILITY: A CROSS- SECTIONAL STUDY

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ABSTRACT

Background - 15% of the world population is suffering from infertility, while 10 to 14% estimated in India. Female and Male infertility is a multifaceted problem with social, economic and cultural level. Delaying in childbearing by the couple, increasing a number of Age-related fertility problems included stress. As in result, infertility includes personal suffering, psychological effects, clinical depression and sexual dysfunction specially for female partner. Objective- The aim of the present study was to explore the main risk factors associated with male and female infertility .Methods- A couple wise questionnaire has been designed to collect the data be related to the causes of infertility, period of infertility, education, occupation and life styles, medical conditions (Medical history and present status), reproductive behaviour, habits and state of mind besides socio-demographics measurements. Results- Advance age, BMI, Habits (Alcohol, smoking), Lifestyle (Occupation, Stress), Diet, Education, Contraceptive, Menstrual abnormalities besides Anthropometric measurements has been included in questionnaire plays a very significant role to understand the causes of female infertility. While semen fluid abnormalities, Genetic factors, Vascular abnormalities, BMI, Excess stress, Past medical history and anti- spermatogenesis factors are the main reasons of male infertility. Conclusion- Changing of lifestyle, Diet, identifying and controlling chronic diseases, rapid and suitable treatments can increase the chance of fertility process.An educated and higher income groups can look for medical counselling to resolve the infertility related problems while an uneducated does not seek for it. Managed medication, minor surgical operations, laparoscopic procedures, hormonal therapy can be done for infertility treatment.

***Keywords*:** Female and Male infertility, Epidemiology

OPZ-8

INFLUENCE OF ULTRAVIOLET RADIATION ON THE LIFE PHASES OF FISH: A REVIEW

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ABSTRACT

Present levels of Ultraviolet Radiation (UVR) signify a important hazard to numerous fish species. The first studies on the special effects of UVR on organisms were made on fish at the commencement of the twentieth century, and the topic has been continuing uninterruptedly until the present-day. Here, we review the described injurious things of ultraviolet radiations in fish at diverse lifecycle phases, including embryo, larvae, juveniles and adults. The most apparent negative things during the early development stages are an growth in mortality and occurrence in developmental deformities, with the skin and gills the most pretentious tissues in larvae. Growth decrease, damage in body form, and behavioral, physiological and metabolic variations in juveniles/adults occur underneath short- or long-term UVR connection. The skin in juveniles/adults experiences deep morphological and functional changes, even after acute exposure to UVR. Damage of molecular and cellular processes was showed in all progress stages by cumulative the levels of DNA damage, apoptosis and altering tissues‘ antioxidant status. The diverse photo-protective mechanisms to manage with excessive UVR exposure are also revised. Presently, stratospheric ozone dynamics and climate alteration interact strongly, enhancing the potential contact of fish to UVR under water. Due to these environmental changes, fish are exposed to new and composite connections among UVR and environmental stressors, which possibly disturbs fish growth and survival. Understanding the ability of fish to manage and acclimatise to these environmental variations will be vital to assess the probable influence in fisheries and alleviate ecological difficulties.

***Keywords*:** UVR, fish species

OPZ-9

PREVALENCE OF GASTROINTESTINAL PARASITE IN GOATS IN TULJAPUR REGION, MAHARASHTRA, INDIA

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ABSTRACT
Coccidian infections studied in the Tuljapur region in Osmanabad District during the period of one year (June 2013 -May 2014). 206 fecal samples of goat were collected from different villages. Total samples examined out of which 155 Samples are positive and there percentage is 74.79 %. The relative prevalence of the goat analyzed.
Keywords: Protozoa, coccidia, oocysts ,fecal samples, goats.

OPZ-10

BIODIVERSITY OF FRESH WATER MACROPHYTES OF BHANDARDARA LAKE OF AKOLE TALUKA, DISTRICT-AHMEDNAGAR (MAHARASHTRA)

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ABSTRACT

The aquatic plants those are grown in or near water are called as macrophytes. The macrophytes are of three types floating, submergent and emergent. The present investigation of aquatic macrophytes of Bhandardara dam of Ahmednagar district showed 39 aquatic macrophyte species from 30 different families and 21 different genera. Aquatic macrophytes comprises a diverse group of organisms including angiosperms, ferns, mosses, liverworts and some macroalgae that occur in seasonally or permanently wet environments. Aquatic plants play an important role in aquatic systems, where they provide food and habitat to fish, aquatic organisms and wildlife. In the present study presence of aquatic macrophytes were undertaken during June 2018 to May 2019. Macrophytes play an important role in dam ecology. They have been investigated as possible indicator of water quality (Unni, 1986, Chaphekar and Mhatre, 1981). The productivity of dam is often dependant on terrestrial leaves, grasses and aquatic plants. They form the base of food chain.

Keywords – Bhandardara dam, ecology, macrophytes.

OPZ-11

PREVALENCE OF TRICARBOXYLIC ACID GENES IN GIANT VIRUS COMMUNITY

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ABSTRACT

The Giant viruses are viruses having large and unique genomes. The viruses have incorporated metabolic genes from their eukaryotic hosts. We wanted to understand the prevalence and distribution of genes involved in the Tricarboxylic Acid metabolism pathway in the giant virus community. Our regular conventional and variants of blast programs were unable to pick up hits with signatures of the TCA genes in the community. Using Hmmscan and Hmmsearch methods and searching in a user constructed database of giant virus genomes we were able to detect the presence of some of the TCA genes in the giant virus community. We then mapped the absence or presence data on a previously available phylogenetic tree of giant viruses. We report that the plant infecting giant viral families like Mimiviridae, Phycodnaviridae and Pithoviridae are showing a higher representation of genes coding for the TCA cycle. We also found that Lipoamide dehydrogenase gene is the most prevalent and present in almost all the viral families. The presence of this gene in giant viruses has so far not been reported in any literature.

Keywords: Giant viruses, metabolism, lipomide.

OPZ-12

ADHATODAVASICA:ABOONCOMPANIONOFDOMAIN

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ABSTRACT

We all are taught about uniqueness of our planet Earth and have learned about using it‘s resources. *Adhatoda vasica*, made one more possibility to achieve success in cure of patients suffering from different respiratory disease such as bronchitis, cough, common cold, asthma. It is not a matter of chance because environmental factors of our home planet are tremendously accelerating the growth and promoting the birth of plants such as *Adhatoda vasica* as well as it‘s metabolites. Favourable environment gives an ability to visualise the future of medicine with this shrub, so would be helpful for the treatment of numerous disorders. Adhatoda is that one medicinal plant which has a potential to cure those who are allergic or not comfortable with other options of medical science. The gifted shrub grows in the lap of nature and provide a revolutionary contribution in the modern world. Changing environment results to change the various forms of life and so plants from several years ago. It‘s a big need of conserving our environment and narrow focusing on balancing ecosystem with infrastructural development. Today it is considerable requirement to conserve maximum forest lands and promote afforestation to decor our planet so that our coming generation would not face lack of such precious gifts of nature.

Keywords: *Adhatoda vasica*, bronchitis, respiratory disorders, afforestation.

OPZ-13

APPLICATION OF FORENSIC ENTOMOLOGY FOR THE CALCULATION OF ELAPSED TIME OF DEATH OF THE CARCASSES OF WILD ANIMALS IN M.P

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ABSTRACT

Human menace and squeezing wilderness becomes unpleasant for sustenance of wildlife conservation programme in the living planet. Extinction of threatened species of wild animals, retaliate killing of big cats and out breaks of deadly infectious diseases are some of the alarming factors for exploring alternative techniques to overcome the hazards in protected forest areas. Forensic entomology is the study of behavior, life cycle and succession pattern of the arthropods to collect the scientific evidences for the criminal practices. For this study, 40 wild animal carcasses in the period of 2017-2020 were examined and around 30-35 maggots which were infesting the carcasses were collected from each animal. The maggots were then subjected to morphological and molecular identification to determine the prevalent blowfly species in Central India which infests the wild animal carcasses. The morphological identification was done by the slides which were prepared by subjecting the maggots to the alcohol dehydration series. For molecular identification of the maggot species, from each sample DNA was extracted using DNeasy Blood and Tissue kit and amplified for the Cytochrome oxidase subunit I (COI) gene using commercially available specific primers. The PCR products were sequenced unidirectional and the sequence were aligned using BLAST. The maggot stage was calculated with the help of the slides for the calculation of elapsed time of death.The study shows 5 species of Blowflies are prevalent in MP and morphological and molecular identification shows *Chrysomya rufifacies* accounted for 11 cases (27%), *Chrysomya megacephala* for 10 cases (25%), *Hemipyrella ligurriens* for 8 cases (20%), *Chrysomya nigripes* for 6 cases (15%) and *Lucilia illustris* for 5 cases (13%). Seasonal variations were also taken into account and accordingly the maximum PMI (Post mortem Interval) was calculated was 144 hours and minimum was 24 hours. The study is really important for collecting the scientific evidences against the wildlife crime.

Keywords: Blowfly, Maggots, Species identification, Wildlife, Forensic entomology.

OPZ-14

BIOCHEMICAL ANALYSIS OF SOFT BODY TISSUES OF FRESHWATER MOLLUSC, *LAMELLIDENSMARGINALIS* FROM JAYAKWADI DAM IN MAHARASHTRA

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ABSTRACT

In the present study, fluctuations in biochemical constituents in soft body tissues of *Lamellidensmarginalis* found in Jayakwadi Dam near Aurangabad (Maharashtra) was observed during different seasons. As environmental condition changes, it shows an effect on biochemical constituents in the tissues like mantle, hepatopancreas, foot and gonad. Protein is found maximum in gonads (11.628 mg) throughout all the three seasons, whereas mantle shows minimum (3.139 mg) values of protein. There is great fluctuation in the values of glycogen present in all the four body tissues during different seasons (14.437 to 4.768 mg). During summer season, maximum glycogen is found in gonad, whereas during monsoon, maximum glycogen is found in foot. During winter season, maximum glycogen is observed in mantle and foot. Similarly, mantle and foot shows maximum amount of lipid during summer season and gonad shows maximum values of lipid (9.287 mg) during monsoon and (7.268 mg) during winter seasons.

Keywords:*Lamellidensmarginalis*, protein, glycogen and lipid.

OPZ-15

CULTIVATION OF *PLEUROTUSFLORIDA* BY STANDARD PROTOCOL AND STUDY OF THE TEMPORAL CHANGES IN TOTAL PROTEIN CONTENTS OF THIS OYSTER MUSHROOM RELATIVE TO GROWTH OF ITS FRUITING BODY

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ABSTRACT

Proteins are the essential components of protoplasm, forming the physical basis of life. Proteins are very important for growth and repair of the body and are of prime biological importance. Their acute deficiency in the food causes retardation of the physical and mental growth. Deficiency of proteins causes PEM (Protein Energy Malnutrition) diseases in infants like marasmus and kwashiorkar. Mushrooms are rich in protein and constitute a valuable source of supplementary food. Use of mushrooms can contribute positively in facing the challenge of world-wide food shortage, originating with rapidly expanding human population. *Pleurotusflorida* (locally known as the Dhingri mushroom) is an edible mushroom having excellent flavour and taste. The present work deals with the cultivation of *Pleurotusflorida* by standard protocol and study of the temporal changes in overall protein contents with respect to growth of the mushroom. Biochemical analyses show the gradual decrease in protein contents per unit mass from lower growth stages of mushroom to higher ones over time and its reasons. This change is attributed to the increase in intercellular spaces and water contents in between these spaces over time, thereby reducing the number of cells per unit area irrespective of overall increase in number of cells in the fruiting body.

Keywords: Dhingri mushroom, PEM, *Pleurotusflorida*, Protein, Temporal gene expression

OPZ-16

ISOLATION, IDENTIFICATION AND STUDY OF BIOREMEDIATION POTENTIAL OF HEXAVALENT CHROMIUM RESISTANT BACTERIA AND IT"SCO-RESISTANCETOOTHER HEAVYMETALSANDANTIBIOTICS.

Victoriya Manoranjitham and JayapradhaRao.

ABSTRACT

Tanneries, though very significant to the Indian economy, are always a threat to the environment due to the various tanning operations practiced in the industry. Trivalent chromium mostly used in the mineral tanning methods can transform into toxic hexavalent chromium which when gets released into the environment, pollutes it and poses a threat to the health of the surrounding residents. Remediation of such environment is the need of the hour and science – based biological methods such as enhanced microbial degradation or phytoremediation has gained importance.

A hexavalent chromium resistant bacteria was isolated from tanneries polluted soil in Dharavi – one of the leather clusters of Maharashtra. The organism was found to be tolerant upto 50ppm of hexavalent chromium. The organism's morphological and biochemical characteristics were studied. Sequencing of the 16S rDNA of the isolate followed by BLAST search revealed the organism to be *Kosakoniara dicincitans*. The bio-remediating capability of the organism was explored by DPC assay and Atomic absorption spectroscopy and the organism was found to reduce upto 98% of the hexavalent chromium ions. Also, the growth kinetics of the isolate under the stressed and non-stressed conditions of chromium, it's tolerance to other heavy metals and it's resistance to various antibiotics were studied.

Keywords: Chromium resistant, *Kosakoniaradicincitans*, bioremediation, DPC assay, Atomic absorption spectroscopy.

OPZ-17

MANAGEMENT OF STORED GRAIN PEST USING ENVIRO-FRIENDLY BIO PESTICIDES

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ABSTRACT

The present work describes analysis of patent literature to explore past development and future prospectus in field of biopesticides. The work majorly focused on use of bio pesticide against stored grain pest. Management of stored grain pests like *Tribolium* spp. , *Sitophilus spp*.etc. is difficult as these pest develop insecticide residence frequently also global climate change accelerated reproduction, development and activity of stored product insect pests. For stored pests pesticides are generally applied directly to the grain which increases the exposure to non-target organism like humans. Biopesticdes are comparatively safe alternative to synthetic pesticides. Patent data provides one of the good indicator of commercially important and innovative developments in given fields. Patent database like Lense, Espacenet, Google patents are used for search, 109 relevant patents were analyzed. Result shows Phytochemical (33 patents) are major source of biopsticides followed by Microbes (31),Gene based Plant incorporated pesticides (27), while Bio-waste (6) and Nanotechnology (4) based biopesticide is upcoming areas for biopesticde against stored grain pests. Mode of action for thesesbiopesticdes in pests shows, major pesticides are stomach poisons (61) followed by Growth and development hampering like IGR, Chitin synthesis inhibitors(20), newly filled patents claimed Energydepleting mode of action. Patents filling activity forbio pesticides for stored grain pest was started in 1990, from year 2012 (16 patent) filling shows steady increasing graph, which shows constant growth in filed. Many big playres like Bayer crop sci (39 patents), Dow Agrosci.(12) are actively filling and developing product also many Government funded agency ((16)also actively innovating in this filed which suggest good commercial future for biopesticdes. This work gives insight in Biopesticide commercial as well as scientific development. General trends shows newer technology like Nanotechnology, polymer science, genetic technology like siRNA, RNAietc are increasing scope and accuracy of biopesticide development.

OPZ-18

MASS CLONAL PROPAGATION OF *MUCUNA PRURIENS* (FABACEAE) AND ASSESSMENT OF ITS PHYTOCHEMICAL AND ENVIRONMENTAL PRESERVENCE PROPERTIES.

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ABSTRACT

Mucuna pruriens, an essential remedial plant growing in the bushes, hedges and dry deciduous forests throughout India. It is thoroughly used in traditional homoeopathic medicine system of India for the treatment of male virility and neurological diseases. It is documented that *M. pruriens* comprises L-3,4-dihydroxy phenylalanine (L-DOPA) a neurotransmitter precursor, used for the cure of Parkinsons disease. Although all plant parts such as leaf, stem, seed and root of *Mucuna* have been promulgating to possess medicinal properties and these properties has been evaluated in various contexts, comprising for its aphrodisiac, anti-epileptic, antivenom, anti-diabetic, anti-neoplastic and anti-microbial activities.Apart from its medicinal properties, in many parts of the world, *M. pruriens* is utilized as an essential fodder, untilled and green compost crop in world scenario. These plants are additionally utilized as a very successful green fertilizer to add up to the fundamental issues of soils or as a cover crop as bioherbicide to preserve the environmental services of soil .Traditional techniques of propagation of this plant are restricted to seedstherefore germination rate and viability of seeds are very poor and also constitute problems because of allergic characteristics that give rise uncurbed itching, the contemporary methods of asexual propagation are Micropropagation that has manifest to be advantageous for in vitro propagation for *Mucuna pruriens*for commercial utilization of valuable plant-derived drugs.Seeds restrain a wide range of phytochemical elements such as alkaloids, glycosides, saponins, reducing sugars, and tannins, which lay out a path to explore it for its wider applications. In this review process of micropropagation and phytochemical properties and environmental preservence properties of *M. pruriens* are summarized.

Keywords:*Mucuna pruriens*, Aphrodisiac, Parkinsons disease, Anti-epileptic,antineoplastic,bioherbicide,antivenom,etc.,

OPZ-19

MENSTRUATION AND COVID-19 VACCINATION: SOCIETAL APPROACH TO SOCIAL MEDIA INRESPONSE

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ABSTRACT

Menstruation and menstrual practices are still clouded by taboos and socio-cultural restrictions. And amidst the Covid-19 pandemic yet again a new surge of bias approach towards vaccination during menstruation has now come across. It is this lack of knowledge that fuels myths which ostracize and humiliate women during their monthly cycles. Women face discrimination, harassment, and are looked down upon because of menstruation, as it is seen as a form of weakness rather than a necessary biological function. Several social media platforms are now flooded with viral content which somehow is trying to mislead the masses. It has been noted that unnecessarily this has to chaos. The current study will throw light on grey areas of our so called aware society who still falls prey to wrong notions and create chaos to worsen situation more.

Keywords:menstruation, pandemic, rumors, social media.

OPZ-20

PHYTOCHEMICAL CONTENT, ANTIOXIDANT POTENTIAL & CALLUS CULTURE OF *STEVIA REBAUDIANA*

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ABSTRACT

Stevia rebaudiana is of huge importance because their leaves contain bioactive compounds, which are of great importance. It includes several important polyphenols that may exhibit antioxidants, anti-antidiabetic and other therapeutic uses. In this study, leaf extracts of different varieties of *Stevia rebaudiana* (SA 178, SA 17, SA 12, HEAM) were obtained from aqueous, methanol and ethanol. The phytochemical content (like phenolics, flavonoids), antioxidant activity (DPPH, ABTS, FRAP, RNS) and carbohydrate hydrolyzing enzymes like α-amylase and α-glucosidase inhibitory were investigated. Among all varieties used, aqueous extract of SA 178 showed the highest phenolics (18.69±0.021 mg GAE/g DW), flavonoids (3.91±0.004 mg QE/g DW) and FRAP (56.66±0.01 mmol of Fe^{2+}/g DW) content. With respect to the antioxidant activity quantified by DPPH, ABTS and RNS, the lowest IC_{50} values obtained were 10.84±0.52, 15.74±0.27 and 151±0.03 µg/ml, respectively. Additionally, the aqueous extract also showed the highest α-amylase and α-glucosidase activity with the lowest IC_{50} values of 1.15±0.010 and 0.42±0.01 mg/ml, respectively. A strong correlation between phytochemical content and antioxidant capacities with R^2 values of >0.9 was obtained. Based on the results obtained, the SA 178 variety can be suggested to be used as a potent source of natural antioxidants. Thus, SA 178 variety was used for *in vitro* cultivation using different combinations of phytohormones and MS medium supplemented with 1mg/L BAP and 2mg/L NAA showed the highest callus induction rate of ~90%. This *in vitro* cultivation was performed to ensure consistent quality and content of phytochemicals from *Stevia.*

Keywords: Antioxidant, *in vitro*, natural sweetener, phytochemicals, *Stevia*.

OPZ-21

UTILIZATION OF THE METHANOL MACERATIVES OF PRE-PUPAL STAGES OF THE BLACK SOLDIER FLY, *HERMETIA ILLUCENS* L. (DIPTERA: STRATIOMYIDAE) FOR INHIBITION OF BACTERIAL GROWTH.

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ABSTRACT
The attempt of the studies was carried with the aim of determination of the inhibition of the growth of three bacterial species (*Salmonella typhimurium* L., *Escherichia coli*L. and *Pseudomonas aureginosa* L.) through the use of whole-body extractives of pre-pupal stages of the black soldier fly, *Hermetia illucens* L. (Diptera: Stratiomyidae). The whole-body extractives of pre-pupal stages of the black soldier fly, *Hermetiaillucens* L. (Diptera: Stratiomyidae) was prepared through the method of maceration. Completely Randomized Design (CRD) was followed for the experimentation. The attempt of experiments was consisting of six groups of the treatment with three replications each. The groups of the treatment in the attempt include six different concentrations of whole-body extractives of pre-pupal stages of the black soldier fly, *Hermetiaillucens* L. (Diptera: Stratiomyidae) (50 mg per Lit.; 100 mg per Lit; 150 mg per Lit.; 200 mg per Lit.; 250 mg per Lit. and 300 mg per Lit.). The antibiotic compound: chloramphenicol (thirty micrograms per disc- paper) was served as a positive control. The dimethyl sulfoxide was served as negative control. The zone of inhibition of the growth of bacterial species, *Salmonella typhimurium* (L.) through the use of extractives of pre-pupal stages of the black soldier fly, *Hermetiaillucens* L. (Diptera: Stratiomyidae) with concentration of 50; 100; 150; 200; 250 and 300 ppm in the present was 7.28 mm; 7.91 mm; 9.13 mm; 10.49 mm; 11.73 mm and 12.03 mm respectively. The zone of inhibition of the growth of bacterial species, *Salmonella typhimurium* (L.) through the use of antibiotic compound: Chloramphenicol was 14.76 mm. The zone of inhibition of the growth of bacterial species, *Escherichia coli* (L.) through the use of extractives of pre-pupal stages of the black soldier fly, *Hermetiaillucens* L. (Diptera: Stratiomyidae) with concentration of 50; 100; 150; 200; 250 and 300 ppm in the present was 7.13 mm; 8.92 mm; 9.74 mm; 9.86 mm; 10.03 mm and 10.88 mm respectively.

Keywords: Antimicrobial Proteins (AMPs); *Hermetiaillucens*L.;*Salmonella typhimurium* L., *Escherichiacoli* L. and *Pseudomonas aureginosa* L.

OPZ-22

CLIMATIC STRESS ON CULTURED *SCYLLA* SP.: IMPACT ON LIVELIHOOD AND PUBLIC HEALTH IN WEST BENGAL

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ABSTRACT:

Scylla sp. is the one of the most demandable aquacultural sp in throughout the India due to its export value, large size, high quantity meat content, good source of protein and calcium ions. In West Bengal coastal region there are estuaries, creeks and tidal mud flat, mangrove swamp that are the natural habitat of aquacultural shellfish *Scylla* sp. *Scylla* sp. is an important biotic decapod member that has important role to maintain the ecological balance of Sundarbans Biosphere Reserve. In West Bengal capture and aquaculture both type fishery activities are performed. A large portion of people of West Bengal involve in crab fishery for their livelihood by wild seed capture and fattening since late 1990s. In West Bengal different districts have brackish water fishery for direct marketing after fatting. Smaller sized mud crabs from capture fisheries contribute to the domestic market whereas crab fatting grow-out system aim for export market. According to Global Climate Risk Index, 2019 India obtained 7th position in World. Water and soil physico-chemical quality are most important factors for surviving and production of *Scylla* sp. Climate fluctuations have impact on mudcrab natural habitat due to increases salinity, pH and temperature. The availability of commercially- important crablets and their stock in brackishwater has been gradually decline due to high salinity, temperature, pH. Such climatic as well as bio-unsafe environment also helps pathogens like bacteria to invade as opportunistic pathogens (e.g. Vibrio sp.) and create diseases frequently. Mass mortality of *Scylla* sp. is very common in West Bengal due to pathogenic infection (Bacteria, Virus, fungi etc) and Vibrio bacteria infected crabs may potentially transmit toxic genes as zoonotic strains in other organism including human through consumption. Fever, Chills, nausea, hypotensive septic shock, lesion, infection, Gastroenteritis and Diarrhea are common diseases. So stressors could affect mudcrab, public health as well as economy of State.

Keywords: Aquaculture, *Scylla* sp., Climatic stress, Diseases, Public health.

OPZ-23

SCREENING OF ANTIMICROBIAL ACTIVITY OF ENDOPHYTIC FUNGUS ISOLATED FROM LAGENANDRATOXICARIA

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ABSTRACT

Endophytes are the organisms, it may be bacteria, fungus and actinomycetes that can create microenvironment in any plant parts without causing any harmful impact to the existence of host.In these groups, fungus shows high diversification in terrestrial as well as aquatic plants. The endophytic fungus colonization varying in individual plants based on its environment and climatic conditions. Such fungus have various activities with antibiotic production, beneficiary relations to host plantand many antagonistic properties. Some of the endophytic fungus shows the peculiar characteristics of existing plant through the production of some specific compounds that found in its host. These facts reveals that the endophytes-plants relationship is mutual and both of them support each other's in their growth, existence and also in biochemical productions.

The present study carried out in endophytic fungus that acquired from a medicinal aquatic plant *Lagenandratoxicaria*. The wide generous of fungus were isolated from the leaf and root of the selected plant. This is a novel work based on the endophytic study carried out in this species.*Lagenandratoxicaria,* belongs to family Araceae having various properties including antimicrobial activity.On the basis of this aspect, endophytic fungus were isolated from the root and leaf of this plant. From this attempt, notifies that the diversity of endophytic fungus varies in both organs. The studies have extended to its morphological characterization and screening of antimicrobial activities.In the morphological study, different types of colony feautures and sporulations can be notified.And also some of the isolates from the endophytes showed antimicrobial activity against pathogenic microorganisms such as four gram positive bacteria, *Bacillus sps., Escherichia coli, Staphylococcus aureus, Enterococcus faecalis*and four gram negative bacteria, *Proteus vulgaris, Vibrio fluvialis, Pseudomonas sps., Salmonella typhii,* and one fungus, *Candida albicans*. Among theendophytes, named MBG LWS16 isolates showed highestantimicrobial activity againsteach tested organisms except *E.coli, C. albicans* and *E. faecalis.*All the data were statistically analysed using SPSS 17.0 and the analysis of variance (ANOVA) were performed to reveal the statistical significance. Comparison of each group was performed using one-way ANOVA.From the data analysis, the p-value is less than 0.05 in every case and the test is statistically significant at 5% level of significance.

Keywords: *Lagenandratoxicaria*, endophytic fungus, morphological study, secondary metabolites, antimicrobial activities, ANOVA

OPZ-24

A COMPARATIVE STUDY OF THE EFFECT OF (TiO_2) NANOPARTICLE ON *BACILLUS COAGULANS* BOTH IN LIGHT AND DARK CONDITION – AN APPROACH TOWARDS SAFETY ON BODY'S IMMUNITY

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ABSTRACT

Anthropogenic activities against nature and interaction with social, environmental determinants create profound health risks for human beings. Combine the response of humans and their ecosystem with the shift of climate results in changes in productivity, species interactions, and the emergence of invasive species. The outbreak of new viral, bacterial, and other zoonotic strains raised questions on new infection, the influence of climate, and ultimately the potential risk on human health. During the era of multiple drug resistance, probiotic treatment becomes a major concern for human society. Along with digestion and absorption, it produces the highest number of antibodies than any other organ of our body, thus, plays a key role to boost up our body's immune system (1). Along with that, in the new era of nanotechnology, we get new dimensions in medical and pharmaceutical, and agricultural fields such as vaccine design (2), drug delivery, cancer therapy, crop yields, etc (3-5). Among oxide nanoparticles (as they play a crucial role in various fields because of their size, density, physical and chemical properties (6)), titanium dioxides nanoparticles (TiO2 NPs) are used mostly in the agri-food sector (7-10). The safety of TiO2 NPs was tested on various human cell lines (11, 12) and its effect on human beneficial gut flora has tested in dark conditions (13). This research article focused on the comparative study of titanium dioxide nanoparticles on *Bacillus coagulans* (the dominant, spore-forming, lactic acid bacillus used as probiotic) both in light and dark conditions for safe use of drugs. Here, we report TiO2 nanoparticle (40 nm) inhibits the growth of bacteria in presence of light, whereas, in the dark condition it shows increased growth, electron microscopy images also reveals changes in bacterial cell wall integrity due to stressful condition in presence of light.

***Keywords*:** Titanium dioxide nanoparticle, gut bacteria

OPZ-25

IN VITRO STUDIES AND ENHANCEMENT OF SECONDARY METABOLITES IN CALLUS CULTURES OF *MERREMIA AEGYPTIA* AND *MERREMIA DISSECTA.*

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ABSTRACT:

Plants produce most of the biomass on earth and provide directly or indirectly all food for humans and in time to come will become the source of sustainable biomaterials that replace non-renewable resources. *In vitro* callus induction is an important technique to reduce the over exploitation of plants for their usefulness. Leaf discs of *M. aegyptia* and *M. dissecta* proved to be the best for callus induction. The ideal medium for callus induction and establishment was found to be MS medium supplemented with NAA (1.0 mg/L) in combination with BAP (0.5 mg/L) for *M. aegyptia* and NAA(2.0mg/L) in combination with BAP(0.5mg/L) for *M. dissecta* after repeated trial additions of various auxins and cytokinins alone and in combinations..*In vitro* studies such as assessment of antioxidant and antimicrobial activity along with quantification of various useful metabolites such as alkaloids, flavonoids, tannins and phenols were done. SDS-PAGE protein profiling and GC-MS analysis was also carried out of callus samples. Later an attempt was made to enhance the quantity of quercetin *in vitro* by addition of precursors in the MS medium supplemented with ideal growth regulators giving a positive result and increasing the quantity in fed cultures 1.5 to 2 fold.

Keywords:- GC-MS, Quercetin, NAA,BAP,Kinetin

OPZ-26

A *TEREDOLITE*RE PORTFROM FULLER‟S EARTH OF KAPURDI FORMATION, BARMER BASIN,WESTERN RAJASTHAN ,INDIA

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ABSTRACT

We document the first report of *Teredolite*of the Eocene ageat Bhadkha, SavadhanokiDhani, and Kapurdi village from Fuller‘s Earth of Kapurdi Formation, Barmer Basin, Western Rajasthan, India. Thestudyareaissituated 20kmfarfromBarmer cityontheBarmer-Jaisalmerhighway NH-68.*Teredolite*wood-boring trace fossils generated by marine bivalve of the Teredinidae (Teredo) and Pholadidae families, *which are related to clams and oysters.*Groups to extend to short, club-like to cylinders in the wood ground, uniformly tightens from the foundation of the essential chamber to the gap; neck district isn't isolated from the chamber.Feeding and dwelling traces are the behaviorof*Teredolites*producebywood-boringsuspension feeders or bivalves(*Teredo*). Based on the presence of foraminifera, Mollusks, and this report, The Kapurdi Formation of Barmer Basin suggests a marine palaeontological environment.

Keywords:*Teredolite*,palaeontologicalenvironment, *Fuller’s Earth,*KapurdiFormation, Barmer Basin.

OPZ-27

OPHIDIAN DIVERSITY, ECOLOGICAL STATUS OF NAKANE LAKE AND CONSERVATION: CASE STUDY

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ABSTRACT:

Nakana Lake is irrigation project built over Panzara River, Morane, Dist. Dhule. Previously known as West- Khandesh, North- Maharashtra region of India, run parallel to the National Highway No.-6 (NH-6). It is natural site where river originate within the in close proximity hills. Survey on ophiodiofauna right through the lake and vicinity area was made from Aug., 2018 to Sept., 2019. Yielding of our observations was 23 species of snakes which represent six families and 20 genera with including species of Typhlopidae (2), Pythonidae (1), Boidae (2), Colubridae (13), Elapidae (3) and Viperidae (2). As per previous and earlier research family colubridae had been included maximum species here also. Among the reported species 10 species are under Lower Risk- near Threatened (LR-nt), 9 are Lower Risk- least Concern (LR-lc), 3 are Not Assessable (NA) and *Coelognathus Helena* species shown Vulnerable (Vu) according to International Union for Conservation of Nature (IUCN) status. Nakana lake shown diverse and favorable habitats for significant creature of the ecosystem but these animals are forever susceptible by anthropogenic activities.

Key words: Panzara River, *Coelognathus Helena*, Morane, Khandesh.

OPZ-28

PRESERVATION OF SUGARCANE BY JUICEUSINGHURDLE TECHNOLOGY

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ABSTRACT

Sugarcane Juice was subjected treatment like pasteurization at $80^{Oc}$for 10 minutes along with chemical treatment (KMS10PPM and citric acid 0.05%) for six months period,during June 2020 to January 2021,with packed samples treated for six months period. during this process ,the moisture contents, ascorbicacid, visible bacterial count ,yeast count get reduced.($P>0.05$) where number of significant effect was observed on reducing and total sugarcane in cane juice.By comparing PET and LDPF,the conclusion was made that Irradiation and packaging material shows no significant differences on organoleptic properties of Juice. Among all the treatments pasteurization at $80^{0c}$to be best in maintain the shelf lifejuice for 60 days at room temperature and 90 days at low temperature for 1kg.irridiation doses. The juice remain fresh in glass bottle for long duration

Keywards- Juice,PET, Irradiation, sample

OPZ 29

STUDY OF GREGARINE BIDARI OF BEETLES, RHYTINOTA ESCHSCHOLTZ AND GREGARINE BALTTARUM FROM COCKROUCH, PERIPLANETA AMERICAMA FROM MARATHWADA REGION MS

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ABSTRACT

In present work a study has been carried out on insect intestinal gregarine species from Marathwada region. It was found that, Gregarina bidari and gregarina blattarum are new species found in Marathwada region from Rhytinotaeschscholtz and Peripleneta americana having site of infestation in mid intestine. The morphological characteristic of both the species were compared with other species from same genus from different localities. The work was done from January 2018 to December 2018.

Keywords: -Gregarines, Toxoplasma, vertebrate, Apicomplexa, insect

OPZ 30

THE PROBABLE APPLICATION OF BIO-INSECTICIDE NEEM OIL/MILD SOAP TOXICITY COMBINATION EFFECTS OF MORTALITY IN *MYLLOCERUS VIRIDANUS* INSECT IN *MORUS ALBA*

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ABSTRACT

Sericulture industries facing heavy damage by the pest *Myllocerus viridanus* in mulberry production (*Morus alba*) throughout the year. As a result, the quality of the leaf, silkworm culture, and cocoon production has been adversely affected. The pest infestation in mulberry cultivation neem oil (*Azadirachta indica*) with five different concentrations (1 to 5ml/L) along with mild soap solution (Khadi) to assess the mortality of *M. viridanus* was tested in the laboratory. The lethal concentrations (LC_{30} – 3.096; LC_{50} – 3.471; LC_{90} - 4.589) were determined by applied the neem oil solution to mature *M. viridanus*. Results revealed that neem oil significantly inhibits the activities and mortality of *M. viridanus* increased gradually on the increasing concentration of neem oil (34%, 44%, 60%, 78%, and 100% respectively). A significant mortality rate was noticed in neem oil-based insecticide than the control.

Keywords: Neem oil, Mild soap, *M. viridanus*, and *Morus alba*

OPZ-31

IMPACTS OF CLIMATE CHANGE ON SHRIMP FARMING IN INDIA

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ABSTRACT

The purpose of this review is to explore the effects of climate change on shrimp aquaculture in India. Aquaculture sector contributes on a large scale to livelihood and food security in developing countries like India. Shrimp farming creates significant impact in socio-economic development in terms of income and employment generation. *Penaeus monodon* and *Penaeus vannamei*are two mostly preferred brackish water crustacean in India having a demand all over the world. The brackish water shrimp farming is expanded considerably during the last ten years and in 2020, area under cultivation was around 158859ha and estimated production was 747111tons. Elements of climate change that are likely to impact shrimp farming include monsoon pattern, sea level rise, seasonal change, temperature rise, water pollution, salinity fluctuation, flooding, erratic weather etc. The negative impacts on shrimp culture due to climate change are significantly observed starting from pond preparation to harvest and post harvest management. The outcomes of climate change include inundation of shrimp farms by sea water particularly located at low lying coastal areas, hypersalination, ecological changes, disruption of farming system, displacement of fisherman communities, prevalence of pathogenic and non-pathogenic diseases, and evolution of resistant pathogen strains. The abiotic changes are more severe than the pathological consequences. Various environmental stimuli such as changes in pH, salinity, dissolved oxygen (DO), temperature and pollutants affect the growth of shrimp. The climatic variables create significant impact on the ecosystem of shrimp farms and as a result severe effects are noticed in terms of growth and production of shrimp. The abrupt changes in the environmental parameters lead to mass mortality of shrimp that causes direct economic loss to the farmers. Community-based adaptation strategies and integrated coastal zone management are needed to cope up with the effects of climate change on shrimp farming.

Keywords: Aquaculture, Socio-economic development, Climate change, Ecosystem, Prevalence of diseases

OPZ 32

REVALANCE AND SEASONAL STUDY OF GASTROINTESTINAL AND SOME PROTOZOAN PARASITES FROM SMALL RUMINANTS IN AN AROUND SILLOD TAHSIL AURANGABAD DISTRICT.

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Abstract

Rearing of small ruminants are the important for farmer to improving the economy of our country. New breed majorly used in rural areas to obtain high productivity. If ignore Proper management and health care then parasites infects the animals and cause less productivity. Helminthes and Protozoan parasites are the major gastrointestinal parasites which cause hazardous effect on small ruminants such as Sheep and Goat in rural areas, which create highly economical loss of farmer. If ignore these infection cause higher mortality. The present study carried out to investigate prevalence of gastrointestinal and some protozoan parasites, their rate of infection seasonally and risk factor in Sheep and Goat from Sillod Tahsil, Aurangabad district in Maharashtra. Fecal sample were collected from different sites of geographical location around sillod tahsil. Overall study period was since 1 January 2018 till 1 January 2019. During these period

410 samples from Sheep and 530 from Goat as total 940 samples were collected seasonally. Out of them 296 positive (72%) in sheep and 327 positive (61%) in Goat gastrointestinal Parasites. Overall 643 samples positives out of total 940 samples. High infection rate found in monsoon Season 83% in Sheep while 73% in Goat. During winter 71% in Sheep and 60% in Goat, 61% in Sheep and 50% in Goat during summer respectively. Age and sex wise infection higher in less the 1 year animal 80% while Sheep shows more infection rate than Goat. Infected animal shows loss of weight, birth rate and Difficulty during feeding. Over all

Other Protozoan parasites *Coccidia, Balentidium and Entamoeba* species also found in higher rate. Coccidiosis is more Zoonotic agent found 69.45% during study period.

Keywords - Prevalence, Seasonal, Helminthes, Protozoan, Sheep, Goat, Sillod.

LIFE SCIENCES SECTION POSTER PRESENTATION

PPZ 1

OPTIMIZATION OF AN EXPLANTS SURFACE STERILIZATION PROTOCOL FOR *IN VITRO* PROPAGATION OF *PLUMBAGO INDICA L*: AN IMPORTANT SHRUB OF MEDICINAL AND ECO RESTORATION VALUE.

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ABSTRACT:

In plant tissue culture, surface sterilization of explants is the first and most important step in establishing aseptic cultures on nutrient medium. Optimising concentrations and duration of sterilizing agents are very much essential to reduce tissue damage by their lethal effects on cell division and growth. The present study describes the most efficient surface sterilization protocol for *in vitro* propagation of *Plumbago indica* using different types of explants. Shoot tips, nodes and leaf explants were collected from a healthy mature plant and washed under running tap water for 10 minutes. Then explants were surface sterilized with various sterilizing agents for different duration and inoculated on appropriate culture media. The bottles were incubated at optimum culture conditions and observed for maximum aseptic cultures with the highest survival rate.

Surface sterilization with 70% ethanol for 30 seconds followed by 1.5 % sodium hypochlorite for 15 minutes and finally 0.1 % mercuric chloride for 5 minutes resulted in maximum survival percentage (90%) in shoot tip explants. Surface sterilization with 70% ethanol for 45 seconds followed by 1.5 % sodium hypochlorite for 20 minutes and finally 0.1 % mercuric chloride for 5 minutes resulted in maximum survival percentage (90%) in nodal explants. Surface sterilization with 1.0 % sodium hypochlorite for 10 minutes and finally 0.08 % mercuric chloride for 5 minutes resulted in maximum survival percentage (80%) in leaf explants. Hence it implies that the different explants require variable percentage of sterilizing agents and duration of treatment to obtain maximum survival rate of aseptic explants. This protocol can be successfully employed for micropropagation and *in vitro* conservation of *Plumbago indica L.*

***Keywords*:** *Plumbago indica*, medicinal plant, micropropagation, surface sterilization.

PPZ-2

MUCORMYCOSIS AND ITS MANAGEMENT STRATEGIES: A SHORT REVIEW

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ABSTRACT

Mucormycosis is a deadly fungal infection that suddenly surged in India during the second wave of Covid-19 in patients suffering or recovering from Covid-19. According to healthcare departments, previously there were mere cases of mucormycosis with few immunocompromised, diabetic, and cancer patients in India who were getting affected by this routinely exposed fungus. It is a rare infection to date but now in the case of Covid-19 patients, it has been suddenly at its peak. Mucormycosis is caused by fungi of class zygomycetes and order Mucorales having six families. According to studies conditions responsible for making people susceptible to this fungus include diabetic ketoacidosis, neutropenia, steroid treatment, deferoxamine, malnutrition, trauma, catheters. Hyperglycemia that was observed in Covid- 19 patients along with increased steroid treatment shift mucormycosis at an unexpected frequency and intensity in India. Liposomal amphotericin B, posaconazole, isavuconazole are antifungal drugs used in treatment but don‘tprove promising in late diagnosis.This paper is giving a short review on mucormycosis and its management strategies described by medical sciences.

Keywords: Mucormycosis, Covid-19, Hyperglycemia, steroid treatment.

PPZ-3

QUANTITATIVE EXTRACTION AND ESTIMATION OF NUCLEIC ACID DERIVATIVES FROM *CHANNA PUNCTATUS.*

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ABSTRACT

Under natural conditions many species of fishes endure long periods of starvation associated mainly with seasonal changes in food availability, spawning, migrations, preparation for spawning or seasonal changes in water temperature. Starvation is usually the result of poor husbandry and in many cases is a squeal to environmental problems. In the present study fishes were sacrificed and the tissues were extracted for determination of effect of starvation on the tissue like kidney, gills, and muscles by estimating their protein, DNA and RNA concentration. Total proteins, DNA and RNA were extracted by D-Lowry's Method, DPA method and Orcinol method respectively. Protein content of the muscle tissue in fresh, fed (control) fish was observed highest as compared to the starved fish. Similarly, the concentration of protein in kidney and gills was higher in fresh and fed as compared to starved condition. However, RNA/DNA ratio in starved was slightly higher compared to fed condition. This study shows the requisite concentration of protein, RNA and DNA in the body of fish necessary for survival. Our results support the established hypothesis of use of RNA/DNA ratio as a bio-indicator to assess the nutritional status and starving condition of an organism.

Keywords:RNA:DNA ratio, ecological indicators, nucleic acid

PPZ-4

PREVELENCE OF RNA POLYMERASE SUBUNIT GENES IN GIANT VIRUS COMMUNITY

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ABSTRACT

The viruses are the most prevalent infectious agents, they are present in every ecosystem on the earth. Viruses carry only a few genes to support their replication. The great surprise in the year 2003 when the first giant virus was found and that virus has a large genome size upto MBp. We discuss the prevalence or occurrence of RNA polymerase subunit genes in the giant virus community. To address this question we retrieved the protein sequences of different eukaryotic organisms and done Blastn but the results are not found so we move on to Psi-blast tool here also we not able to find the result then we move towards the Hmmscan and Hmmsearch using Hmmer software because in this software it creates a profile of the homologous sequences and give the result. The result compared with the phylogenetic tree (tree taken from a published article). Finally we reported that the subunit genes like RPB1 and RPB2 present in most of the giant viruses because these genes perform most of the functions in Giant viruses. We plot a scatter plot of genomic size versus number of genes present in the virus in this plot. Surprisingly we got that the genomic size of the giant viruses is more but the number of genes is less.

Keywords: viruses, RNA polymerase, giant Chromosome.

PPZ 5

EFFECT OF ONION AND GARLIC ON GROWTH PERFORMANCE OF COMMON EDIBLE CRAB *PARATELPHUSA JACQUEMONTII* FROM MELGHAT REGION

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ABSTRACT

Environment is unlimited with adequate space and food supply, the specific growth rate population growth rate per individual of population becomes maximum and constant under a set of environmental conditions. The present study designed to demonstrate the population of common edible crab *Paratelphusa jacquemontii* (Rathbun) from Melghat region.The aim of this study was to assess the effect of onion (*Allium cepa*) & garlic (*Allium sativum*) on growth performance common edible crab *Paratelphusa jacquemontii* (Rathbun) from Melghat region. A total number of 100 crabs (average weight 500±60g) were used. Crabs were divided into five groups fed on diets containing variable mixture of onion and garlic in different levels and the control group diet was without mixture. The experiment extended for two months. The results showed significant weight gain and growth performance increased in all groups fed on mixture. The results of this study show that addition of onion and garlic diet can promote growth of crab.

Keywords:*Paratelphusa jacquemontii* (Rathbun), Onion, garlic, growth factors

OPZ 6

ENDOPHYTIC *ASPERGILLUS* SP. IS A POTENT BIOLOGICAL CONTROL AGENT AGAINST A POLYPHAGOUS PEST, *SPODOPTERA LITURA* (FABRICIUS).

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ABSTRACT

Spodoptera litura (Fabricius) is one of the most destructive pest of major crops of India particularly tobacco, cotton, soybean and some pulses. Chemical control is one of the methods to reduce the economic losses made by this pest. However extensive and indiscriminate use of chemical insecticides has resulted in development of physiological resistance to most of the insecticides in addition to other ill effects on environment. Therefore, recent approaches in agriculture have moves towards eco-friendly and sustainable methods based on natural modes of pest control like biological control using microorganisms. Among the various microorganisms, endophytic fungi, which live asymptomatically within host plant tissues, are important mediators of plant-herbivore interactions. These endophytes enhance resistance of host plant against insect herbivores mainly by productions of various alkaloids and phenol based defensive compounds in the plant tissue or through alterations of plant nutritional quality. In light of this, the present studies were conducted to evaluate the insecticidal potential of ethyl acetate extract of endophytic *Aspergillus* sp. against *S. litura.* The second instar larvae of *S. litura* were fed on artificial diet amended with ethyl acetate extract of endophytic fungi to observe their effect on survival, development and nutritional parameters of pest. In the bioassay studies, it was observed that endophyte amended diet induced 68-94 percent larval mortality at higher concentrations as compared to 2 percent in control. The effects of endophyte infected plants also leads to prolonged development of insect. The ethyl acetate extract of *Aspergillus* sp. significantly reduced relative growth and consumption rate of *S. litura* as well as efficiency of conversion of ingested and digested food. Thus, it is concluded that ethyl acetate extract of endophytic *Aspergillus* sp. negatively influence the biological and nutritional parameters therefore it could be used to develop alternative ecologically safe biological control strategies.

PPZ -7

MANAGEMENT OF BRINJAL SHOOT AND FRUIT BORER (REVIEW ARTICLE)*

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ABSTRACT
In this review paper the management of Brinjal Shoot and Fruit Borer. Brinjal is one of the most important vegetable sin South and South-East Asia. Where hot and wetClimates prevail. It belongs to the plant family Solanacaeae the most commonly Grown vegetable of this family. Different insect pest attack brinjal from time of planting till its harvesting. Some important insect pest are Brinjal Shoot and Fruit Borer. Brinjal Shoot and Fruit Borer (BSFB), Leucinodesorbonal is (Guenee) is serious insect pest of brinjal in all brinjal growing countries. It is a most important pest in Asia, including Pakistan. The Leucinodesorbonal is developmental stages consist of 1egg, 5larval instars, pupa and adult. This life cycle on Solanum gilo fruits from egg to adult was 28 days with arrange of 24-46 days at temperature and 85-92%relative humidity. The larvaburrows of the petioles and tender shoots by brinjal fruit borer. Due to this the iris dropping of leaves and shedding of newly flower buds. Also the caterpillars causes severe damage by tunneling the fruits that is single caterpillar may destroy as many as 4-6 fruits. The affected fruits and dropping shoots, containing caterpillar sinside, should be clipped off and destroyed. The crop should be sprayed with Azadirachtin 0.03% Profenophos 0.05 % or Carbaryl 50 WP at 2 g/litstarting from 1 month after Transplanting at15 days interval. Soil application of Carbofuran 3g at 30kg/ha10 days after transplanting is also very effective. Apply neem cake at 250 kg/ha at 30 days after transplanting. Keep pheromonetraps at 12nos./ha.
Keywords: Leucinodesorbonalis, pesticides, Brinjal Fruit borer infestation, chemical control.

PPZ-8

EFFECT OF POLYCYSTIC OVARIAN SYNDROME (PCOS) ON WOMEN HEALTH

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ABSTRACT:

In this review paper Polycystic Ovarian Syndrome (PCOS) is a clinical syndrome which affects womens hormone levels. This syndrome is commonly seenin today's young girl and womens .Aforecasted 20% Indian young girl and women suffered from PCOS. It seen that PCOS is not a disease but different way it will present young girl. Most women with PCOS are also overweight or obese,further enhancing androgen secretion while impairing metabolism and reproductive function. 20-25% of women with normal ovulation demonstrate ultrasound finding typical of polycystic ovaries. Insulin resistance with result hyperinsulinaemia initiates PCOS in 50-70% cases 60-70% high level of androgen and 40-60% has glucose tolerance. In young girl may suffer from irregular periods, amenorrhoea, hirsutism and obesity but in aged women, menstrual irregularity, Hyperandrogenism ,Infertility, chance of miscarriage and many more. In Urban India women having poor lifestyle ,loss of physical activity and fast food diet which rise higher chance of PCOS.The development of PCOS environmentaland genetic factor also involved . Management of clinical sign of PCOS include oral contraceptive irregularities and hirsutism. Treatment of PCOS includes birth control pills to regularize periods,medication to prevent diabetes,hormones to increase fertility.

Keywords :- androgen, unovulation, polycystic ovaries, hirusutism.

LIFE SCIENCES SECTION ORAL PRESENTATION

OPB-1

CAVE MICRO-FUNGI AND ITS EFFECT ON CLIMATE CHANGE AND HEALTH HAZARDS

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ABSTRACT

Climate change has been the center of attention during the past few years. The global climate change can influence agricultural productivity by altering the plant-microbe interactions. Microorganisms including soil fungi enhance the rate of soil carbon sequestration through carbon assimilation from the atmosphere. AsImportant decomposers of ecosystemfungi are intimately involved in biogeochemical transformation at local and global scales. Due to the lack of organic carbon input from photosynthesis and the absence of light and various physiochemical micro-gradient, cave to be extreme environments to life. Fungi are the primary decomposers in the soil, hence it is implicate that changes in temperature and precipitation will change the diversity and functionality of fungal communities. In general studies have found that elevated atmospheric carbon dioxide enhances the abundance and activity of mycorrhizal fungi, particularly in relation to the production of spore bearing structures, while warmer temperatures increase fungal abundance but decrease activities as soil nutrient transfer to plants. Fungal diseases have devastated many animal and plant species. Human and other mammals, however, have been mostly spared astheir body temperatures are two warm for most fungi to replicate in but climate changemay be bringing new fungal threats to human health. The goal of this review is to learn about the identity distribution and ecology of fungi in caves, which will help to provide the platform to researcher in determining the effect of the fungal spores on human population and forest density and how climate change effect the growth.

Keywords: Cave, Climate, Microfungi, Human health

OPB 2

FINGER PRINTING ANALYSIS OF PHYTOSTEROLSFROM MADHUCA LONGIFOLIA(KOENIG)J.F.MACB.VAR.LATIFOLIA (ROXB.)CHEVAL LEAVES USING HIGH-PERFORMANCE THIN LAYER CHROMATOGRAPHY (HPTLC)ANALYSIS

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ABSTRACT

Context: Fingerprint analysis approach using high-performance thin-layer chromatography (HPTLC) has become the most potent tool for quality control of herbal botanicals because of simplicity, reliability and reproducibility. It serves as a tool for identification, authentication, and quality control of botanicals.

Objective: The present study was conducted to identify the phytosterols from medicinally and economically useful plant *Madhuca longifolia (Koenig) J. F. Macb. Var. Latifolia (Roxb.) Cheval* using high-performance thin layer chromatography (HPTLC) technique.

Materials and Methods: Camag HPTLC system equipped with Linomat V applicator (Switzerland). Densitometric scanning was performed with Camag thin layer chromatography scanner IV in the reflectance absorbance mode at 540 nm and operated by Win CATS software (1.4.6 Camag) with the help of tungsten lamp.

Results: HPTLC fingerprinting of phytosterols of leaf extract revealed five polyvalent phytoconstituents (5 peaks) and corresponding ascending order of Rf values in the range of 0.05-0.71. on derivatization with Dragendorff`s reagent at 366nm and 540 nm

Conclusions: With the results of preliminary phytochemical analysis and above Rf values, we have concluded the presence of phytosterols in the leaf extracts.

***Keywords*:** High-performance thin layer chromatography, fingerprinting, *M. longifolia var. latifolia leaves*, Phytochemical screening, Phytosterol.

OPB 3

HYDROPRIMING ENHANCED GERMINATION IN ENDANGERED MEDICINAL PLANT SHENDRI (MALLOTUS PHILIPPINENSIS MUELL. ARG.)

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ABSTRACT

Mallotus philippinensis Muell. Arg. belongs to family Euphorbiaceae. It is one of the endangered medicinal plants used in indigenous system of medicine. In Ayurveda it is used in treatment of dermal problems, abdominal illness, jaundice, malaria etc. Various parts of the plants are rich in different secondary metabolites. It also possesses anti-oxidant, antimicrobial, anti malarial, antitumor, antiviral and Hepatoprotective Activity. In spite of its important activities there is non-availability of planting materials. Seeds germinate in more than 30 days with rate of germination up to 5% in natural conditions due to hard seed coat. To enhance germination seeds were treated to imbibe water for different period of time. Priming with water proved to increase germination and decrease days to germinate in present experiment.

Keywords: *Mallotus philippinensis, germination, Hydropriming.*

OPB-4

IMPACT OF CLIMATE CHANGE ON FOOD SECURITY: A BIRD'S EYE VIEW

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ABSTRACT

A group of Research Scholars in the Philippines have observed that significantly unstable rainfall or extremely climatic conditions would lead to food insecurity and severely undernourished children .Climate Change critically affects all the four aspects of food security i.e. availability, accessibility, stability, and utilization of food. It also affects crops, livestocks, forestry, fisheries, etc. It can cause grave social and economic consequences in the form of reduced incomes, eroded livelihoods, trade disruption and adverse health impacts; since the early 1990s, the number of extreme weather-related disasters has doubled and it has reduced the yields of major crops along with increase in food prices and decreases in income. The connection between climate change and food security in 2019 has been examined thoroughly by the Global Hunger Index (GHI).This article examines how climate change limits the access to food and how to tackle the current climate critics to reduce poverty and ensure food security.

Keywords: Climate Change, Food Security, GHI, SDG, Poverty.

OPB-5

SEASONAL VARIATION OF NUTRITIVE VALUES IN VARIOUS PARTS OF *ADANSONIA DIGITATA* AND *BOMBAX CEIBA*.

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ABSTRACT:

Plants are the richest resource of drugs of traditional systems of medicine, nutraceuticals, and chemical entities for synthetic drugs. Plants have been used all over the world as unique source of medicines. Medicinal properties of plants are due to the active chemicalconstituents present in different parts of the plant. They continue to be an important therapeutic aidfor the ailments of humankind. The search for eternal health and longevity and for remedies to relieve pain drove earlyman to explore his immediate natural surroundings and led to the use of many plants and thedevelopment of a variety of therapeutic agents. Today, there is a renewed interest in traditional medicine andincreasingdemandsformoredrugsfromplantsources.

The plants *Adansonia digitata* and *Bombax ceiba* which belong to family Bombacaceae were selected. Both the plants find their importance in medicinal as well as ethnobotanic sphere. In the present study, the seasonal variation of total carbohydrates and starch has been investigated by Anthrone method. Theseasonal variation of starch and totalcar bohydratescontenthavebeeninvestigatedfromleaves,stemandbarkof *Adansonia digitata* and *Bombax ceiba*invariousseasonscontinuouslyfor two years. From the present study, we observe that the total carbohydrate content is in increasing order of bark < leaves < stem of both the plants. Similarly, the starch content in both the plants was found to be in increasing order of stem < bark < leaves

Keywords: *Adansonia digitata*, *Bombax ceiba*, Bombacaceae, medicinal plants, carbohydrates, starch, etc.

OPB-6

EFFECT OF *OSCIMUM AMERICANUM &ECLIPTA ALBA AGAINST THE FUNGAL DISEASES AND WOUNDS IN ANIMALS*

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ABSTRACT

In present study organic formulation was prepared by using two plants for controlling fungal diseases as well as wounds i.e. *Oscimum americanum* (Rantulas) &*Eclipta alba* (Kalamaka).The main constituents are Eugenol, Methyl Chavicol, Terpineol, Linalool in *O. americanum* (Rantulas) and Stigmasterol, Wedelolactone, Desmethywedelolactone in *E. alba* (kalamaka). These chemicals have different activities like antifungal, antibacterial, insecticidal, and anti-viral and also shows wound healing properties. Powder was made & homogenize in 80 % Methanol and keep this mixture for 24 hours and filter through Whatman filter paper. Evaporate this extract in water bath to obtain semi solid extract and simultaneously to collect methanol for reuse. Semi solid extract is directly use to prepare formulation with use other chemicals. The testing of formulation on fungal disease and wound healing were carried out on dairy animals like Cow & Buffalo. The testing showed that fungal disease and wound healing were cure. The period for cure disease and wound is different in different proportion i.e. 8-16 days. Therefore this formulation first might be a potential source for the treatment of fungal diseases and wound healing in animals and it more efficient than available ointments.

Keywords: Rantulas, Kalamaka, fungal diseases.

OPB-7

CONSERVATION STATUS AND THERAPEUTIC POTENTIAL OF LILIUM POLYPHYLLUM- ACRITICALLY ENDANGERED ASTAVARGA SPECIESOF THE INDIAN WESTERN HIMALAYA

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ABSTRACT

Lilium polyphyllum D.Donex Royle, commonly known as Ksirakakoli, isa medicinal herb native to the coniferous forests of the Western Himalaya. The plant species found distributed in Jammu and Kashmir, Himachal Pradesh and Uttarakhand states of India isthreatened due to climate change, extensive collection of bulbs and destruction of its natural habitat and is categorised in IUCN's Red list as critically endangered. The species find extensive use in more than thirty Ayurvedic formulations due to the presence of therapeutic properties and is also one of the eightmedicinal plants of Astavarga used in Ayurveda for antiaging and vitality properties. L. polyphyllum is harvested for its bulbs which contain astringent, galactogogue, expectorant, aphrodisiac, diuretic, soothing, refrigerant, anti-pyretic, anti-inflammatory, spermopiotic and revitalizing properties. In recent years, the trade of L. polyphyllum bulbs has risen due to its high commercial value. During the process of collection, the whole plant is uprooted which has threatened the survival of the species. Also, this plant has long virginal phase of 3-5 years and shows epicotyl morpho-physiological dormancy which are a hindrance to its propagation. The climate change due to global warming has further declined the plant population as it is a high altitude plant requiring special ecological conditions for its growth, and thus,is found growing in small patches with very few populations. Owing to threatened status and unsustainable bulb collection, appropriate trade regulations need to be developed along with suitable conservation strategies with an aim to not only protect this species from extinction but also help in fulfilling the need of pharmaceutical industries.

Key words: climate change; Ayurveda; conservation; endangered; Lilium polyphyllum.

OPB-8

EFFECTS OF CLIMATIC CHANGES ON POND ECOSYSTEM

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ABSTRACT

Ponds are aquatic home for various flora and fauna which is called as aquatic ecosystem. In previous days, the ponds satisfied all the needs of man including drinking, washing and cultivation. But now a days, the ponds are critically poor in condition. It is very rare to see the ponds in rural and urban areas. The main reasons for destroying the ponds are many anthropogenic activities and climatic change. The pond ecosystem is severely affected by the climatic change which causes acid rain, poor monsoon, global warming, UV radiation etc. This will lead to increase the pH and temperature of pond water. Hence the pond ecosystem is affected severely. Apart from these, the ponds met so many problems like dumping of waste products from industries and real estate business. Many ponds are converted into buildings and apartments. So that millions of living organism have lost their home and destroyed. In the present study we have analyzed the ecosystem, physical and chemical parameters of three ponds namely Vayalnambikulam, Kanganankulam and Pillaikulam located in Tirunelveli District, Tamilnadu. We have compared the results with the ten years back (2010) results. During ten years (2010-2020), the area of the ponds is greatly reduced and the physical and chemical parameters are altered heavily. The percentage of the ecosystem also very much reduced. Climatic changes are caused by anthropogenic activities like burning of fossil fuels which emit CO_2, CO, CFC etc.Hence, we are the responsible for avoiding the climatic changes and saving the pond ecosystem and ourearth.

Keywords: Aquatic ecosystem, UV radiation, global warming and Anthropogenic.

OPB 9

IMPACT OF CLIMATE CHANGE ON LIVING WORLD

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ABSTRACT: -

In the current scenario, climatic changes have led to the disturbance of the nature and its environment. These changes include loss of biodiversity, depletion in ozone layer, high risk of forest fire, increase flooding, human health issues etc. are collectively contribute to the vulnerable situation of living world included human and other animals. That has directly disturbed the geological system, ecological system and biological system of the Earth. The increased interference of human to the nature is most important factor responsible for global vulnerable situation. The social impact of the climate change is related to the poverty, hunger and risk of disease like malaria, diarrhea mostly among the children cause death.

Keywords: - Biodiversity, Climate change, Global vulnerable situation, Geological system.

OPB-10

MICROPROPAGATION IN CITRUS JAMBHIRI LUSH. THROUGH NUCELLUS TISSUE

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ABSTRACT

Citrus jambhiri Lush. (rough lemon) species is a rich source of vitamin C, besides a rare and most useful vitamin P and mineral contents, belongs to the family Rutaceae. It is usually grown either by cutting or by seeds. To produce true-to-type and rapid cloning micropropagation technique was utilized to the nucellar tissue with ovular halves of *C. Jambhiri.* The nucellar tissue were cultured in a modified MS medium supplemented with different concentrations of 2ip viz. 0.25, 0.50 alone and in combination of 0.50 mg l^{-1} NAA. Activation of cell division and differentiation of proembryogenic tissue become apparent in first 80 days. These proembryos developed into embryos through subculturing in fresh medium. Comparatively 0.25 2ip was found more suitable for the development of embryo as is evidenced also by increased number of fully developed embryo in comparision to the embryo produced in the high concentration of 2ip (0.50 mg l^{-1} of 2ip) and in combination of 0.25 2ip and 0.50 NAA. Normally developed embryos in 0.25 2ip were directly transferred to a fresh medium supplemented with 0.25 mg l^{-1} IAA, 100 ME mg l^{-1} and amino acids. Intermixed embryos obtained from 0.50 2ip and 0.25 2ip and NAA were treated with putrescine in combination with lower concentration 2ip and NAA to alleviate fasciation. These were also subcultured. At the end normally developed embryos were germinated best in the medium containing 5mg l^{-1} amino acid, 0.25 IAA and 100 ME mg l^{-1} in 30 days as compared to other treatments. These germinated embryos were utilized to produce saplings after hardening and nurturing in laboratory conditions. This protocol can be used in large scale to provide disease free clones to orchards.

OPB-11

SOME MEDICINAL PLANTS AND THEIR CONSERVATION ININDIAN THAR DESERT

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ABSTRACT:

In recent years, medicinal plant resources of western Rajasthan of Indian Thar desert have been influenced by environmental limitations,overexploitation and other anthropogenic activities.*Dipcadierythraeum*Webb. & berth and *Drimia indica* (Roxb.)Jessopbelong to family Asparagaceaeare medicinally important bulbousplants.*D.erythraeum*an endemic and threatened plant occurs in rocky and gravelly parts of Jaisalmer, Jodhpur and Barmer districts of Rajasthan state while *D. indica*, occurs on hilly and rocky region of the desert. The leave of *D. erythreaum*are used as a lax ative and as an ointment for wounds treatments and whole plants are used in cough, biliousness, diabetes, urinary and discharge.*D. indica*is significant in Ayurvedic medicine for several therapeutic uses like respiratory disorders,skin diseases,cardiac diseases,dysmenorrhea, rheumatismand intestinal worms etc.*Caralluma edulis* (Edgew.) Benth.& Hook. f., (family Asclepiadaceae) is a succulent endangered and endemic plants occurs in some parts of Jaisalmer. It is used for treating different disease such as, alzheimer, rheumatism, gastric problems, hypertension, diabetes, leprosy and febrifuge.The young shoots of *C. edulis* and bulb of *D. erythreaum* are eaten during famine as emergency food. All these plants are perennial, propagate by seeds and vegetatively.

The study depicts medicinal values and conservation status of these plants. Further, the reasons behind loss of populations, molecular markers based geneticdiversity assessment, in *in vitro* and *in vivo* approaches for conservation and breeding improvement of these plants have been suggested for their conservation in Thar desert. **Keywords**: Bulb, Conservation;Endemic and endangered, Medicinal plants;Thar

OPB-12

STUDIES ON *IN-VITRO*CALLOGENESIS OF *CAESALPINIA BONDUCELLA* F.: A THREATENED MEDICINAL PLANT OF WESTERN GHATS.

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ABSTRACT:
Caesalpinia bonducella Flem is a dioecious scrambling woody liana of Caesalpiniaceae, subfamily of Leguminosae. The plant is threatened and distributed in the deciduous forests of the Western Ghats of India. Thus, being an important medicinal plant *Caesalpinia bonducella F.* attracted many of the scientists to exploit various activities associated with several phytoconstituents. *In vitro*callus cultures have gained commercial potential for the production of secondary metabolites of therapeutic significance. Therefore, the present study was undertaken to evaluate the most suitable concentrations of nutrient media and PGR's for *in vitro* callogenesis. The callus wasinitiated from stem explants, on MS medium supplemented with auxins and cytokinin. The effects of plant growth regulatorson callus cultures were studied. It was observed that 2,4-D at 2.5 mgL^{-1} in combination with BAP, 2 mgL^{-1} resulted in highest frequency and highest mean percentage of callus formation 2.35 ± 0.294 with yellow friable callus.

Keywords: *In-Vitro* callogenesis, *Caesalpinia bonducella*, phytoconstituents, Secondary metabolites, MS medium

OPB-13

COMPARATIVE STUDIES ON THE TOLERANCE OF CYLINDROSPERMUMMUSICOLA, *CALOTHRIXJAVANICAANDWESTIELL OPSISPROLIFICA* TO AN ORGANOCHLORINE PESTICIDE, ENDOTAF (ENDOSULFAN, 35%)

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ABSTRACT

During the present investigation, effect of Endotaf (Endosulfan, 35%) pesticide was studied on nitrogen fixation efficiency of, *Calothrixjavanica* and *Westiellopsisprolifica*. Experiments were conducted by inoculating equal amounts of actively growing unialgal isolates into 2.5, 5, 10, 20, 50, 100, 250 and 500 ppm concentrations of Endotaf pesticide in the 50 ml of nitrogen free BG-11 medium. Total nitrogen fixed by blue-green algalspecies was estimated by conventional Micro- kjeldahl method in the laboratory cultures at each concentration of Endotaf pesticide. The results obtained during the present investigation indicated a progressive decrease in the total nitrogen content of the tested blue-green algae with increasing concentrations of the Endotaf pesticide.

However, nitrogen fixation of most of the blue-green algae was also increased at the lower doses of pesticide. The consequences of the results revealed that *Calothrixjavanica* was emerged as most compatible and tolerant to the increasing Endotaf pesticide doses than the other tested blue-green algal species. On the other hand, *Cylindrospermummusicola* was found to be highly susceptible as even at 2.5 ppm of Endotaf. *Calothrix* species was capable to tolerate upto 10 ppm of Endotaf while in *Westiellopsisprolifica* and *Cylindrospermummusicola*, the pesticide tolerance range was found to be upto 5 ppm and 2.5 ppm with Endotaf, respectively. Further increase in pesticides concentrations a gradual decline in the total nitrogen content occurred in all the tested blue-green algal strains. It is concluded that indiscriminate use of these pesticides may cause adverse effects on the nitrogen fixing blue-green algae of various crop fields, which has a direct influence on total productivity. Since it is essential to screen efficient blue-green algal strains those are capable of growing and fixing nitrogen at higher rate even in presence of recommended doses of the agrochemicals including pesticides, before their inoculation into the field.

Keywords: *Calothrixjavanica*,*Cylindrospermummusicola*,Endotaf (Endosulfan, 35%),.

OPB-14

ROLE OF REGRESSION ANALYSIS IN CROP YIELD PREDICTION

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ABSTRACT

Agriculture being the backbone of survival of human race seeks the prime attention in each era. In India, agriculture is mainly dependent on weather and socio-economic factors. With climate change becoming a reality, and the population increasing exponentially, making predictions of high accuracy and precision becomes important in order to maximize the agrarian production. The world needs to adapt to the effects of climate change while increasing the efficiency of production. In the current presentation regression analysis, a versatile tool used for mathematical modeling has been discussed. Regression analysis takes multiple factors into account and gives the rate at which these factors affect agricultural practices. Regression analysis is a favorite mathematical tool of researchers working in agricultural field for making predictions about crop yield. A lot of factors related to weather, atmosphere, rainfall and many more have already been taken into account while using regression analysis in prediction of agricultural production. The prediction accuracy by regression analysis can be increased by finding and taking into account more significant factors affecting the crop yield. This can be useful in increasing the efficiency of agricultural practices. Also, the moderated regression analysis model can be proved extremely beneficial in the years to come.

OPB15

EFFECT OF AQUEOUS FOLIAR SPRAY OF LEAF EXTRACTS OF SOME PLANT SPECIES OF ASTERACEAE ON RUST DISEASE INCIDENCE % OF GROUNDNUT.

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ABSTRACT

Rust (*Pucciniaarachidis*Speg) of ground nut has become one of the serious diseases in India since 1971. It gets spread rapidly through seed/pods contamination, wind borne uredospores. In severe infection condition the crop is completely destroyed. It can be controlled by using rust resistant groundnut varieties and by using chemicals. Farmers have been using synthetic chemicals indiscriminately causing environmental pollution and poisoning nature and food. It is not desirable. This pathogen survives in the plant debris in soil and easily. Rust appears in the field under warm and humid conditions. We tried to investigate fungicidal effect of fresh leaf extracts of ten species of Asteraceae family against phytopathogenic fungi that cause crop plant diseases. According to the Rust disease incidence %, control of the disease could be put in an order of: *Plucheato mentosa>Erigeron bonariensis> Synedrella nodiflora> Parthenium hysterophorus> Launaea procumbens> Tagetes erecta> Tridax procumbens> Sphagneticola calandulacea> Cynathillium cinereum> mixed > Eclipta prostrata*

Key words: Plant spp. Of Asteraceae family, rust disease of Groundnut, antifungal**.**

OPB-16

COVID-19 AND ITS IMPACT ON ENVIRONMENT

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ABSTRACT

The global outbreak of coronavirus disease 2019 (COVID-19) is wreaking havoc in countries across the globe, causing a worldwide health crisis and forcing economies to slow down due to measures put in place to contain the spread of the virus. However, the outbreak has also impacted the environment in an intriguing way. Therefore, this study intends to explore the positive and negative environmental impacts of the COVID-19 pandemic, by reviewing the available scientific literatures. Notably, the economic shutdown under the Covid-19 pandemic has had two monumental impactson the environment. It has improved air and water quality dramatically, and slashed ourmaterial consumption, water usage and waste production. This study indicates that, the pandemic situation has improved the air quality in different cities across the world, reduced GHGs emission and lessened waterand noise pollution. Ecosystems are being greatly recovered. Ozone layer has been found to have revived to some extent. The pandemic has displayed its contrasting consequence on human civilization, in the sense that, on one hand, it has caused worldwide panic situation, but created a very positive impact on the world environment on the other. As well, there are also some negative consequences of COVID-19, such as increase of medical waste, haphazard use and disposal of disinfectants, mask, and gloves; and burden of untreated wastes continuously endangering the environment. It seems inevitable that, economic activities will be on the track soon after the pandemic, and the situation might change. In consequence, this study also outlines the way forward toachieve the long-term environmental benefits. It is likely that the proper implementation of the proposed strategies might be helpful for the global environmental sustainability.

Keywords: COVID-19, Environmental, Worldwide, Ecosystem, Sustainability

OPB-17

CURRENT STATUS OF PHYTO DIVERSITY ALONG DIFFERENT CLIMATIC CONDITIONS IN THE GARHWAL FOREST DIVISION, GARHWAL HIMALAYA, INDIA

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ABSTRACT:

The present study was conducted in sub-tropical zone (500m-3100m above sea level) of Garhwal Forest Division (a division of Indian Forest Department) is located at 30^0 30′00″ N latitude to 78^0 30′ 00″ E longitude. The climate of study sites were typical sub-tropical to moist temperate type. Total number of 159 plant species belonging to 55 Families were recorded from the study area out of 55 Families, 23 were represented by single species. The dominant family in the study area is Asteraceae with 39 species. Forest area showed similarity with the dominant plant Families of India. Number of plants is 32 trees, 42 shrubs and herbs are 80 species number of grasses is 2 and number of climber is 3. This study provides current comprehensive information on habitat wise distribution pattern of plants in Garhwal Forest Division forest area, which will be of great help to the scientists, planners and particularly to the state forest department for developing a strategies and action plans for the management of this biodiversity rich forest area.

Kyewords: Phytodiversity, Climate, Phytosociology, Dominance.

OPB-18

QUALITATIVE PHYTOCHEMICAL EVALUATION OF BIOACTIVE COMPONENTS FROM THE LEAVES OF VARIOUS ETHNOMEDICINAL PLANTS

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ABSTRACT

The medicinal qualities shown by various plants are the result of phytochemicals present in them. These phytochemicals are being used to treat therapeutic application in ethnomedicine in India and mentioned in Ayurveda and still lacks sufficient evidences for explaining their possible capabilities. The present study was conducted on four plants commonly found in Indian subcontinents and Southeast Asia. The plants are *TinosporaCordifolia*, *AegleMarmelos*, *MurrayaKoenigii*, *Piper betle*. The leaves of these plants were used to obtain crude extracts. This study evaluates carbohydrate, Starch, Carboxylic Acid, Proteins, Alkaloids, Steroid, Flavanoids, Saponin, Tannins, Terpenoids, Phenols, Glycoside, Quinone, Coumarines, Xanthoprotein, Anthracyanin, Diterpenes, Napthoquinone, Phlobtannins, Anthraquinones by Qualitative Phytochemical analysis using crude extracts from leaves of above mentioned four plants.Identification of these naturally occurring compounds in medicinal plants is the basis of discovering new plant-based drugs. The present study concluded that these medicinal plants have possessed different vital phytochemicals that helps in revealing the mode of action and pharmacological activity of bioactive compounds.

OPB-19

ALLELOPATHIC EFFECT OF STEM AND ROOT EXTRACTS OF MANGIFERA INDICA L ON RAPHANUS SATIVUS L VAR. JAPANI AND H_{11}

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ABSTRACT

Allelopathy is a current area of research and plays important role in nature and agro ecosystem. It may be useful in agriculture to increase yield, minimize some problems related to multiple cropping systems, soil productivity and transformed the research from basic to applied.

Mangifera indica L Family Anacardiaceae a common, large evergreen tree grow naturally everywhere on agricultural bunds . The fruit ‗ Amba' is a very delicious fruit and known as king of fruit. Effect of aqueous root extract were tested on the germination and seedling growth of *Raphanus sativus* L variety Japani and H^{11}. Stem and root extract shows inhibitory effect at all concentration except at 2.5% . Data were analyzed by appropriate statistical method.

Keywords: Allelopathy, Extract, *Mangifera indica* L., *Raphanus sativus*, ‗**J**apani' and H^{11}.

OPB-20

IMPACT OF SALT STRESS ON SEED GERMINATION AND GROWTH OF *VIGNA UNGUICULATA* (L.) WALP.CV.VAMBAN-2

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ABSTRACT

Salinity stress is one of the most destructive stress factors generating detrimental effect on development and productivity of crop plants since it decreases the plants' ability to utilize water and causes a decline in growth rate as well as changesplant metabolism. The primary observable effect of salinity on all types of plants is reduced growth and extreme salinities result in death proceeded by loss of ionic balance in the root, chlorosis, wilting and leaf necrosis. However, ion exclusion, tissue tolerance, and salt tolerance are the key features in plants that play a pivotal roleinacclimatizing plants to salinity stress. Cowpea(*Vigna unguiculata* (L.) Walp.)is one of thehigh-quality protein rich leguminous cropconsumed throughout the world.The presence of proteins, carbohydrates and low-fat contents makes it a vital food in human diet. Consumption of cowpea provides protective effects for several chronic diseases like gastrointestinal disorders, cardiovascular diseases, hypercholesterolemia, obesity, diabetesand several types of cancer. Cowpea seeds Cv. Vamban-2 procured from NPRC, Pudukkottai were subjected to different concentrations of NaCl stress (10 – 100 mM) to analyze seed germination and other growth parameters. Germination frequency was found to be 100
% up to 30 mM NaCl beyond which it gradually declined. Height of plants were noticed to increase until 50 mM NaCl above which it diminished. The maximum plant height attained was 11.82 cms after 6 weeks of culture at 10 mM salt concentrations whereas control plants reached a maximum height of 13.13 cms. Number of branches ranged from 2.0 to 0.01 and length of branches varied from 4.28 to 0.15 cms. Maximum number of leaves produced during stress conditions were 3.28 with a leaf area of 2.11 cms. The maximum fresh and dry weights recorded were 400 mg and 30mg, respectively. **Keywords:** Salinity, Cowpea, Sodium Chloride, plant growth, leaf, root, acclimatization.

OPB-21

MEASUREMENT OF GROWTH AND PHYCOBILINS IN A CYANOBACTERIUM *PHORMIDIUMFRAGILE* (MENEGHINI) GOMONT

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ABSTRACT

Phormidium fragile was isolated from the collected soil samples from different locations of Ahmednagar district of Maharashtra state(India). Identification was carried out using morphological variation and taxonomical approaches according to Desikachary. The axenic culture of *Phormidium fragile* was obtained in the laboratory. For the biomass production, different culture media were used namely BG-11, Fogg's medium, Allen and Arnon medium, Zarrouk's medium and CFTRI medium. The biomass was harvested by filtration through double layered muslin cloth and dried using air blower. After harvesting, the biomass obtained was subjected to the growth analysis. Phycobilins were estimated by following the method described by Bennett and Bogorad. Out of the different culture media used, BG-11 medium supported the growth of *Phormidium fragile* properly as compared to other media used. Phycobilins content was found to be more in *Phormidium fragile* grown in BG-11 medium followed by Fogg's medium.

Keywords-*Phormidiumfragile*, Phycobilins,BG-11, Fogg's medium, Allen and Arnon medium, Zarrouk's medium and CFTRI medium.

OPB-22

MEDICINAL PLANTS AND THEIR CONSERVATION

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ABSTRACT

Plants are the main organisms which have localized almost every part of the earth. Most of the plants are having medicinal properties which are used for the curing of various diseases since from the origin of the mankind. Due to the over exploitation, urbanization, industrialization these plants are under danger and proper care is needed for their sustainability. Many of the plants are already vanished from the earth and occupied their place in the dead data book. As these plants are having medicinal values to cure and treatment of many deadly diseases conservation of these plants should be done. They can be protected by adopting several methodologies and techniques such as tissue culture, cryopreservation, *insitu* and *exsitu* conservation, and etc.

Key words: Conservation, Medicinal plants,

OPB-23

STUDIES IN WILD PLANT POLLINATOR DIVERSITY, ITS CONSERVATION AND POLLINATION BENEFITS

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ABSTRACT

Pollinators are important agriculturally and ecologically. They are ecosystem service providers and increase yield of plants all over the world. Rich floral community and more diverse pollinator community enhances pollination in plants by facilitating reproduction, productivity and diversification of plants. Pollinators are very crucial for the functioning of agricultural ecosystems. Crop plant production, all over the world, is dependent on insect pollination. Our study area is largest and important _Orange' producing belt of India. In *Citrus* plants, 95% fruit setting is possible after pollination with honeybees. Recent developments in agriculture and increased use of insecticides and growth promoting foliar sprays resulted into decrease in pollinator diversity and density. Thus, attempt have been made to study the diversity of pollinators. Appropriate measures will be suggested for the conservation of pollinators diversity.

Keywords: Wild Plant, Pollinator Diversity, Conservation, Warud, Amravati.

OPB-24

INCREASING NUMBER OF FRUITS AND ITS ROLE BY THE INSECT POLLINATORS VISITING *FLACOURTIAJANGOMAS* (LOUR.)RAEUSCH (SCRAMBERRY)AS ANINDICATOR OF CLIMATIC CONDITIONS IN PONMANA, KANYAKUMARI DISTRICT.

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ABSTRACT

Massive loss of biodiversity across the planet, causing rapid ecosystem changes besides the decline in insect plant pollinators probably the use of pesticides, fragmentation, pollution and climate change also as an as indicator of climatic conditions,perhaps the diversity of plant pollinators plays a huge role in the yield of fruit crops. The study is about butterflies, bees, flies and moth is noticed visiting *Flacourtia jangomas* (Lour.) Raeusch(family Salicaceae) Indian coffee plum or Scramberry, situated in Ponmanai, Kanyakumari District, Tamil Nadu, India, alsospeculated to be tropical Asia, very common in Kerala, known as rubikka or lololikkatree, produces small white to whitish green fragrant flowers and get the yield twice in an year. Among 29 species of Lepidoptera in and around the surrounding area, of these 10 species of butterflies and moth including species of 7 Nymplalidae, 2 Lycaenidae and 1 Erebidae, Besides 1 Hymenoptera and 1 Diptera, is noticed particularly visiting this plant. The tree planted in most of the home for its culinary and medical significancewith itsrounded pink to dark redjuicy fruits. Biodiversity visiting and being as pollinators or the species that use those plants as a critical food resource, some species are still arriving throughout the season and the honey bee as a dominant foraging species. Related to fruits and seed production understanding the most important pollinators of this plants is a necessary step to protect their pollination service and assure the food security of these communities.

Keywords: Insect pollinators, Indicators, *Flacourtia jangomas*, Honey bee, Food security.

OPB-25

SURVEY OF HERBACEOUS WEED FLORA GROWING IN DAUND TAHSIL FROM PUNE DISTRICT (M.S.), INDIA.

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ABSTRACT

Herbs are major components of plant diversity and are an important segment of global biodiversity. The weeds are uninvited guests in any cultivated fields, gardens, and non-irrigated places. Weeds are an excellent example of the successful struggle for existence. The agro ecosystems show association of various types of native and invasive weeds in crop plants. Weeds can be defined as the plant growing in the wrong places from farmer's point of view. In present paper an attempts were made to survey the herbaceous weed flora growing in Daund Tahsil from Pune district (M.S.) India. Daund Tahsil enriches with herbaceous weed flora about 59 different species of 27 families. Each plant is studied with respect to its botanical name, local name, family name, morphological characters and flowering and fruiting period. Weed species belonging to Asteraceae, Poaceae and Amaranthaceae families are dominant in this region. Some of dominant weeds species are *Alternantherasessilis*(L.) R. Br,*Boerhavia erecta*Linn. **,** *Cynodon dactylon*(L.) Pers., *Cyperus rotundus* L. etc.

Key Words: -Survey, Weed Flora, Herbaceous, Daund Tahsil

OPB-26

ASSESSMENTOFAIR-BORNEFUNGIATVEGETABLE CENTRAL MARKET OF NASHIK CITY.

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ABSTRACT

Aerobiology is emerging branch of science, which describe the biological processes affecting the production of particles and their impacts on the health of animals, including humans, and plants. Keeping this in mind the fungal air spora of vegetable market in Nashik was decided to investigate. Present study was carried out by operating Tilak air sampler in a vegetable market of Nashik. Air monitoring was done during the period of one year i.e. from 1st Dec. 2012 to 30th Nov. 2013. During the present investigation a total number of 32 biocomponents were recorded out of which 2 belong to Phycomycotina, 8 to Ascomycotina, 3 to Basidiomycotina, 15 to Deuteromycotina and 4 to other types. Deuteromycotina contributed the highest percentage followed by Basidiomycotina, Ascomycotina and Phycomycotina. The dominant fungal spore types recorded were *Aspergillus, Cladosporium, Alternaria, ,Curvularia, Dreschlera, Nigrospora*, Smut spore, Rust spore, *Torula* etc.

Key word:-Aerobiology, fungal spore, Tilak Air Sampler

OPB-27

COMBINATION EFFECT OF *B. JAPONICUM* MUTATED AND NON MUTATED *B. JAPONICUM* STRAIN"S, *AZOTOBACTER* AND VAM FUNGI ON SOYBEAN

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ABSRACT:

Ten strains of *Bradyrhizobium japonicum* where isolated from ten localities from Pravara area and labeled as B_1, B_2, B_3, B_4, B_5 ……. B_{10} these isolates were tested for combination effect of *B.japonicum* (mutated and non mutated), *Azotobacter* and VAMfungi From the experimental finding it was interesting to note that thecombination of $B_1+B_2+B_4$+VAM+*A.chroochoccum* showed significant increase in height and leaf area over mutated M_3 $B_1+B_2+B_4$

Keywords – Strain combination, *B. japonicum*, mutated, *Azotobacter* and VAM fungi

OPB-28

EFFECT OF SOME FRESHWATER ALGAE ON NUTRIENT COMPOSITION OF SAFFLOWER (*CARTHAMUS TINCTORIUS*L.)

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ABSTRACT

Current agriculture is depending upon gradually more use of chemical fertilizers. Such chemical fertilizers can cause unfavorable effect on soil fertility. Use of bio-fertilizers in agriculture will help in harmless effect on the soil health and also the quality of crop products. A good number of the algae are associated with the plant roots which can improve the crop yield and soil richness. In present work fresh water algae are collected from rivers and canals of Rahata tahsil. This collected fresh water algae are shade dried and a fine powder was made. This powder was used for preparation of aqueous and Indian khillar cow urine extracts of various concentrations. A leafy vegetable, Safflower (Carthamus tinctoriusL.)was used as a tested plant.Seeds of safflower were soaked with these algal extract concentration..Study was conducted during rabbi season 2020 by designing Randomized Block Design (RBD) method. The 20% algal extract with cow urine tested for its potential as a liquid biofertilizer on Safflower showed significant positive results. Fresh leaves after 60 DAS treatment showed maximum increase in nutrient composition.

Keywords: Biofertilizer, Algae, Safflower, RBD, Nutrient.

OPB-29

ETHNOBOTANICAL STUDY OF MEDICINAL PLANTS IN CHILLA RANGE AND CHANDI DEVI HILLS HARIDWAR, UTTARAKHAND

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ABSTRACT

Medicinal plants play a vital role in the livelihood of the communities by providing a variety of medicinal products. Medicinal plants and their parts are used for diverse purposes and in various usages of human beings.Because of the vast range and habitat of ethnomedicinal plant species, India ranks sixth among the world's twelve mega- diversity countries. The Uttarakhand state is well known for its diverse medicinal plant wealth and organic reserves. The area of Haridwar ranged from a rich variety of medicinal plant wealth due to diverse geomorphology, altitude, and latitude. A study was conducted from (2019-2021) in two different zones of District Haridwar, Uttarakhandin order to investigate the current status of medicinal plant distribution, abundance, and also various suggested utilization measures for curing various diseases by the local resident of the selected study area. Information on the medicinal plants was mainly gathered from local people and Gujjars through questionnaires, formal and informal discussion by undertaking frequent field trips. From the ground truth field survey, it is clearly evident that the selected study sites of Haridwar were habitant of 92 medicinal plants of which 09 were herbs, 71 trees, and 13 shrubs. These medicinal plants came from 42 different families, with the Asteraceae being the most common, followed by the Fabaceae. A variety of plant parts is used to treat various ailments. The majority of these plants were used in the form of decoctions, solutions, pastes, powders, raw pieces, and ash, among other things. The aim of this study was to determine the value of traditional information about medicinal plants used by local people and Gujjars in the region for the treatment of various diseases.

Keywords:Ethnobotany, Medicinal plants, Traditional Knowledge, Haridwar.

OPB-30

DIVERSITY OF GEOPHYTES FROM KALWAN TEHSIL DISTRICT NASIK MAHRASHTRA INDIA

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ABSTRACT
The present paper deals with the diversity of geophytes occurring in Kalwan tehsil of Nashik District. A study was carriedout for studying the Ethno botany in Kalwantehsil .Kalwantehsil has a predominantly tribal population .Many geophytes are used as ethno –medicines and as food .During the field visits carried out fourteen geophytes were recorded belonging to twelve genus .One species *Zingiberneesanum* (J .Graham.) Ramamoorthy,was recorded as a new record for Nashik district .
Keywords: Ethno -Botany, Tribal Population, Geophytes, New record.

OPB-31

HERBALANDMEDICINALPLANTSPECIESANDTHEIRUSESAT NEWASAFROMAHMEDNAGARDISTRICTS,MAHARASHTRA

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ABSTRACT

Present research is aimed at gathering information of herbal and medicinal plants species occurring in Newasa region which have been ignored so far. Investigations of the remote areas where Newasa taluka dwellers are reside for data collection, survey, identification and documentation of the plant. Herbal and medicinal plants are among the important service providing to human. In this study, an herbal and medicinal survey of Newasa from Ahmednagar districts, Maharashtra has been conducted through personal visit, survey and interviews with key community members of the villages. The importance of cited herbal and medicinal plant species was then assessed based on the commercial value of plant species and their relationship to economic crops. The serve revealed that 57 plant species provide the local community with a breadth of different plant products. Based on their use-values *Aegle marmelos,Ficus benghalensis, Azadirachta indica, Ficus religiosa, Mangifera indica,Zyzypus jujube, Emblica officinalis, Ficus glomerata, Terminalia bellerica, Terminalia chebula,* were among the highest- ranking tree species. Whereas, *Balanites roxburghii, Vitex negundo, Carissa carandus, Lawsonia alba, Jatropha curcasAnnona squamosa,* were at the forefront of shrubs species *Ocimum americanum, Aloe vera and Abrus precatorius* were among the herbaceous speciesand *Asparagus racemosus, Acacia concina and Caesalpinia bondus* were among the climbing species.Considering the commercial value and relationship to economic crops, the results demonstrated a list of 20 species of actual and potential high economic importance. Findings of this study clearly indicate that numerous wild plants of Newasa are still in use and hold high potentiality for economic development. Further studies to map and quantify the availability of these species and develop suitable methods for their propagation and production are necessary.

Keywords: Ethno botanical Importance; herbal and medicinal; Ahmednagar districts

OPB-32

CROP DIVERSIFICATION TOWARDS HORTICULTURE WITH SPECIAL REFERENCE TO VEGETABLE CULTIVATION IN SONIPAT DISTRICT OF HARYANA: A POSSIBLE PATHWAY TOWARDS SUSTAINABLE AGRICULTURAL DEVELOPMENT

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ABSTRACT

Agriculture sector plays a very important role in the economy of the Haryana and predominantly it is an agricultural economy. The area under wheat and rice is continuously increasing in the state. The mono cropping of wheat and rice has led to serious problems such as exploitation of ground water, decline in the fertility of soil, due to excessive irrigation there is problem of water-logging and salinity; and the excessive use of subsidized fertilizers has degraded the food grains quality. So that there is a need to diversify the cropping pattern towards the alternative crops for sustainable development of agriculture sector. The main objectives of this paper are to examine the relative economics of paddy vis-à-vis vegetables by using benefit-cost ratio (BCR) and the problems faced by the farmers while growing vegetables. For the purpose of collection of data, a scheduled questionnaire was structured for the farmers. All the questionnaires were filled by direct interview and personal visits to farmers. The result of the study showed that the investment in paddy as well as in vegetables is economically viable as benefit cost ratio of paddy and vegetables explain that on an average Rs. 1 investment brings more than Rs. 1 return for the farmers but vegetables generate higher returns as compared to paddy. The study also revealed that transportation, timely payment and marketing problems were reported as the important problems faced by majority of farmers. Diversification from paddy to vegetable crops in the kharif season in Haryana requires a favourable price regime, technology for increasing the existing levels of productivity, financial support and infrastructure facilities.Key words: Agriculture, Diversification, Vegetables, Productivity, Sustainable Development.

OPB-33

HOME COMPOSTING: INDIVIDUAL EFFORTS IN COLLECTIVELY COMBATING CLIMATE CHANGE EFFECTS ON ENVIRONMENT AND HUMAN HEALTH

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ABSTRACT:

Each 3 second we are losing a forest as big as a football ground. But with efforts all around by individuals and organisations, greening is also done. Climate change will happen but it is up to us to mitigate its consequences. It is said that, ―Think Global, Act Locall. So it is imperative that we think towards making ourselves, our cities and our world environmentally healthy and ACT towards this. In a bid to grow more and get more yields, lots of chemical fertilizers are used in farming but the ill effects of chemicals and pesticides have been noticed only in the last two and a half decades. Not only there is soil and water pollution, crop and human health is also suffering. In such a scenario, it is up to individuals to become conscious of activities harming our environment and mitigate them by everyday small handprint acts. The present study is the report of a pilot project by the author to enlighten students and their families about home composting and its positive effects on the environment.

Keywords: home composting, soil pollution, handprint

OPB-34

CLIMATE CHANGE IMPACT TO BIODIVERSITY : A STUDY WITH SPECIAL REFEREENCE TO PACAHAMALAI HILLS

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ABSTRACT

The estimated climate change will have a significant impact on biodiversity and the yield stability of agricultural, medicinal and forest production systems. The effective conservation of biodiversity resources will play a central role in the ability to react to the effects caused by climate change. Pachamalai hills is situated in the Southern parts of Eastern Ghats and forests comprised of tropical thorny, dry deciduous and moist deciduous types of vegetation. Most of the plants and their derivate parts are used to cure various ailments by the local and traditional healers of the tribal community including Malayali tribes. Climate change will drastically increase in temperature, changes in rainfall pattern, changes in the natural distribution of the range of species and changing the entire ecological network of habitats and landscapes. The wide and high speed of climate change makes it difficult for plant and animal species to adapt to the new conditions. This scenario inadvertently causes tremendous pressure on agricultural fields causing the decline in soil fertility susceptible to traditional seed varieties, increasing dependency on non-conventional methods of agricultural and medicinal practices. The ultimatum that is foreseeable is that protectionism in biodiversity putting promise for sustainable livelihood between generations. The paper aims at evaluating the fact that the given situation and arrive at a conclusive priority for the policymakers and the ethnobotanists to take efforts on conservation and restoration of biodiversity by practising traditional agriculture and traditional knowledge within the available system and ensuring the sustainable livelihood of future generations in Pachamalai Hills, Tamil Nadu, India.

Keywords: Ethno botany, Biodiversity, Food Security, Climate Change and Sustainable Development

OPB 35

ETHNO BOTANICAL PLANTS AND THEIR UTILIZATION SURVEY AGAINST COVID-19 AT RURAL NEWASA AREA OF AHMEDNAGAR DISTRICT (M. S.).

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ABSTRACT

The human infected cases of COVID-19 (Corona virus disease) are still increasing day- by- day all over the world. It is infectious disease caused by a newly discovered corona virus. COVID-19are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as middle east respiratory syndrome and severe acute respiratory syndrome. Common symptoms of infection include respiratory are fever, cough, shortness of breath and breathing problems. In some cases infection cause Pneumonia, kidney failure, heart attack and even death. Recommendations to avoid infection spread include covering mouth and nose with mask, sanities or wash hand regularly, thoroughly cooking fresh vegetable, use fresh fruit and also cooking meat and egg. In present research survey standard recommendation that use ethno botanical plants to prevent and control corona virus disease. Total 21 plants showed to increase immunomodulatory activity, antiviral activity and inhibitory potential growth of corona virus disease. This may be due to the routine use of immunomodulator medicinal plants, out of these most common plant used as *Tinospora cordifolia, Agelemarmelos, Curculonga, Ocimum sanctum, Withaniasomnifera, Adathodavasica, Zingiber officinale, Emblicaofficinallis, Aloe vera, Azedercta indica, Citrus limon, Cocculus hirstus, Cymbopogon citrates, Allium sativum, Hyptissuaveolens,Boerhaviadiffusa, Phyllanthus nuri, Eclipta alba, Carica papaya, Citrus sinensis, Citrus limetta,*. It is there by suggested that ethno botanical plants must be investigated on a priority basis to solve the current crisis COVID -19 issue.

Keywords: COVID-19, Ethno botanical plants, preventive measures.

OPB-36

EXPLORATION AND DOCUMENTATION OF SOME WILD EDIBLE WEEDS FROM SHRIRAMPUR TEHSIL OF AHEMDNAGARDISTRICT (MS), INDIA.

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ABSTRACT

An extensive ethno- botanical exploration was carried out in the Shrirampur tehsil of Ahmednagar district of Maharashtra state, during year 2019-2020. The main goal behind this extensive exploration was to identify and to document different weed species from this area which are used by local tribes as well as common village people as wild edible vegetables. They are aware of medicinal and nutritive potential of edible weed species. The tribal make use of leaves, flowers, fruits, of weeds as vegetable. From present detail ethno- botanical survey it is revealed that in all 24 weed species belonging to 21 genera and 17 families are significant as wild edible vegetables.

Key words:-Wild edible,Shrirampur,Weeds, Maharashtra

LIFE SCIENCES

SECTION

POSTERPRESENTATION

PPB-1

ISOLATION AND IDENTIFICATION OF DIFFERENT MYCOFLORA IN AGRICULTURAL FIELD OF PATNA DISTRICT

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ABSTRACT
Production and quality of crops which is directly connected with human health is strongly affected by soil
l diversity and soil health. All types of soil are natural habitat of different types of mycoflora. Fungi play a vital role in nutritional uptake, pathogenicity and plant health. Many of these fungal species are harmful for crops and these are serious threat to our farmers. Many harmful chemicals are used by farmers for controlling these fungi. The aim of this research is to find out the diversity of mycoflora in different agricultural field which is harmful for crops. The samples were collected from different geographical regions. All samples were inoculated in Czapek agar media with supplement of antibiotic chloramphenicol by soil dilution and soil plate methods. A total 9 genera of fungi were identified and 7 were left unknown. The genus *Aspergillus* and *Alternaria* were dominant among all isolates.
Keywords : Soil health, Fungi, Pathogen, Agricultural crops

PPB-2

ANTIBACTERIAL, ANTIFUNGAL ACTIVITY AND PHYTOCHEMICAL ANALYSIS OF *XANTHIUM STRUMARIUM* LINN.

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ABSTRACT

The plant creates these synthetics to monitor itself however ongoing exploration exhibits that a ton of phytochemicals can ensure people against infections. There are many phytochemicals in fruits and herbs and everyone works differently. *Xanthium strumarium* Linn.maybe a gregarious weed found abundantly throughout India. *Xanthium strumarium* Linn.is an herb with a stout, short, hairy stem and its leaves are broadly triangular-ovate or suborbicular. *Xanthium strumarium* Linn.is used for the treatment of nasal sinusitis, headache caused by wind-cold, urticaria, and arthritis. The synthetic piece of ent-kaurane diterpenoids, sesquiterpene lactones, caffeoylquinic acids, and a thiazinedione from this plant (leaves or organic products) have been accounted for. The plant has a wide cluster for different sicknesses, for example, anti-diabetes and anti-oxidation, antibacterial antiviral, antibacterial, insecticidal, herbicidal, and antitrypanosomal. The chemical analysis of phytochemicals encompasses steroids, alkaloids, flavonoids, triterpenoids, tannins, saponins, quinone, coumarin, protein, sugar. A study like ethnomedicine keenly represents one among the simplest avenues in checking out new economic plants for medicine. Medicinal plants have an alternative rich source of phytochemicals and antibacterial agents. The phytochemical result showed the presence of carbohydrate, steroid, alkaloid, flavonoid, tannin, and glycosides. The antibacterial activity was studied by the agar well diffusion method using an aqueous extract of *Xanthium strumarium* Linn. leaves. This extract tested against five bacterial strains *Pseudomonas*, *Bacilluspasteurii*, *Escherichiacoli*, *Bacillussubtilis*, *Streptococcusmutant*, and three fungal strain *Candida albicans*, *Aspergillus niger*,and *Dreschlera turcica*. This result shows that the leaves of this plant have a potentially broad-spectrum antibacterial activity and phytochemical constituents and these help in the production and development of phytomedicines for antibacterial or antimicrobial properties.

Keywords:*Xanthium strumarium*Linn., phytochemicals, antibacterial, Antifungal.

PPB-3

SOME LESS KNOWN HERBAL REMEDIES BASED ON REPORTS FROM MAHADEO KOLIS FROM AKOLE TAHASIL OF AHMEDNAGAR DISTRICT (M.S.) INDIA

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ABSTRACT

The present investigation reveals ethnopharmacological uses of 21 native plant species belonging to 15 families as folklore against certain hepatic diseases and disorders from Akole tahasil of the Ahmadnagar district in Maharashtra state, India. Application of 11 plant species is unknown or less known to India. Botanical names, local name, family (in parenthesis) plant part used for formulation preparation and ethnopharmacological use are given as per information from of the native tribals of the study area.

Keywords: Herbal Remedies, folklore, Mahadeo Kolis, Akole Tahasil

PPB-4

MUTAGENIC EFFECTIVENESS AND EFFICIENCY OF GAMMA RAYS, EMS AND THEIR COMBINED TREATMENT IN *PHASEOLUS LUNATUS* L.

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ABSTRACT:

Mutagenic effectiveness and efficiency are two important factors to study a mutagen. The determination of these factors is necessary in plant breeding programs. In this research work the study was performed by irradiation of seeds with various doses of Gamma rays and different concentrations of EMS and combination of both mutagens (Gamma rays and EMS) along with control. From M1 generation the biological damages (lethality and pollen sterility) and from M2 generation the chlorophyll mutation and morphological mutation were considered for calculating the effectiveness and efficiency. Mutagenic effectiveness was inversely proportional to the dose/concentration of mutagens. The maximum efficiency at lower dose/concentrations of the mutagens was due to the pollen sterility and lethality (Biological destructions) which increased as the mutagenic effect increased. Mutation rate is the mean values of mutagenic efficiency that were taken into consideration for each treatment to calculate the mutation rate which gives an idea of the average rate of mutation induction per mutagen.

Keywords: Lethality, Mutagenic effectiveness, Mutagenic efficiency, Mutation rate and Pollen sterility.

PPB-5

IN VITRO PROPAGATION USING NODAL EXPLANTS OF CINNAMOMUM CAMPHORA: AN IMPORTANT MEDICINAL TREE

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ABSTRACT

Medicinal plants play an important role in human life to fight diseases since time immemorial. Over the past few years, the medicinal plants have received a wide acceptance due to the faith in herbal medicine in view of its lower side-effects as compared to allopathic medicine. *Cinnamomum camphora* (L.) Nees & Eberm is one of the important medicinal plants used in various systems of medicine. It is commonly known as Camphor tree or Kapur. It is an evergreen, aromatic, medium to large tree. Leaves are aromatic which give smell of camphor when crushed by hand. Camphor tree is used as a source of camphor and camphor oil. Both camphor and camphor oil have medicinal importance and commercial value. But conventional methods of propagation (by seeds, cuttings and layering) of camphor tree are very slow. In addition the long life cycle of this tree also hinders in conventional method of breeding. Therefore, to achieve their mass multiplication and propagation without any interruption, nodal explants of camphor tree were inoculated on MS and WPM supplemented with different concentrations (0.5, 1.0, and 2.0 mg/l) of BAP. Buds initiated after 10 days and 20 days of inoculation with 100% and 60% response on WPM and MS fortified with 1mg/l BAP respectively. Shoots (2 cm height) rooted on half strength WPM fortified with IBA at different concentrations (0.5, 1.0, and 2.0 mg/l). The rooted shoots were successfully transferred to field with 50% survival.

Abbreviations:BAP: 6-Benzyleaminopurine, **IBA:** Indole-3-butyric acid
WPM: Woody Plant Medium, **MS:** Murashige & Skoog's Medium

Key words: *In vitro*, *Cinnamomum camphora*, Camphor tree, WPM, Nodal explants.

PPB-6

STUDY OF PRESSMUD ALONG WITH FERTILIZER FOR YIELD AND QUALITY OF PLANT AND RATOON SUGAR CANE

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ABSTRACT

The field experiment was conducted during 2018-19 and 2019-20 to study of pressmud along with fertilizer for yield and quality of plant and ratoon sugar cane (*saccharum officimarum L.*) Pressmud alone or in combination with nitrogen improved the cane yield and quality of plant and ratoon crops . Pressmud @30 Tonnes /ha +120 kg N/ha increased the ratoon yield over recommended dose 280 kg N/ha +140 kg /P_2O_5+ 140 kg K_2O /ha. Pressmud @ 30 tonnes p/he +120 kg N/ha recorded the highest sucrose sugar contain (percentage) In a ratoon crop. The total Production of commercial cane sugar was higher in pressmud @30 tonnes /ha +120 kg N/ha compared with recommended dose of fertilizer.

ADDITIONAL ABSTRACTS

ENVIRONMENTAL SECTION

ORAL

PRESENTATION

OPE-124

AN IMPACT OF PANDEMIC COVID-19 ON INDIAN AGRICULTURAL SECTOR.

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ABSTRACT

COVID-19 pandemic has disrupted the Indian agricultural farming sector extensively. Nevertheless, the recent quarterly GDP estimates post-COVID scenario showcase robustness and resilience in Indian agriculture, the sole sector to register a positive growth of three.4% during the twelvemonth (FY here after) 2020–21 (Quarter 1: April 2020 to June 2020). At the identical time, the immediate past quarter growth was estimated at 5.9% witnessing a decline by 2.5% point. during this context, we aim to synthesize the first evidence of the COVID-19 impact on the Indian agricultural Farming sector viz., framers , labor ,production, marketing and consumption followed by a group of potential strategies to recover and prosper post-pandemic. Survey findings indicate that the pandemic has affected farmer, production and marketing through labor and logistical constraints, while the negative income shock restricted access to markets and increased prices of food commodities affecting the consumption pattern.

The pandemic wreaked a considerable physical, social, economic and emotional havoc on all the stakeholders of Indian agricultural farming. Seizing the crisis as a chance, the state announced a raft of measures and long-pending reforms. We propose somepoint strategy starting from social safety nets, family farming, monetizing buffer stock, staggered procurement to secondary agriculture to revive and prosper post-pandemic.

OPE-125

STATUS OF INVASIVE ALIEN PLANT SPECIES (IAPS) IN ARUNACHAL PRADESH, INDIA: A REVIEW

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ABSTRACT

Globalization has paved way to invasion in eastern Himalaya region of Arunachal Pradesh, slowly threatening native flora and ecosystem. As the neutralisation of bio geographical barriers, IAPs are moving upwards in higher elevation and existence of native species are looming in great danger in the state. In order to curb out this looming danger, we provide an overview on the status of IAPs in Arunachal Pradesh. Based onan extensive literature review, we identified 63 IAPs belonging to 28 families reported to occur in Arunachal Pradesh.Majority of these species are herb (50), followed by shrub (7), climber (2), grass (2) and single species of trees and undershrub. Tropical America (57%) and South America (9%) contribute maximum proportion to the IAPs of Arunachal Pradesh. Habit wise analysis shows 54% annuals and 46% perennials, respectively. The highest diversity is reported from Asteraceae family. Present study will help in further understanding of IAPs (early detection, seasonal inventories, developing strategic management and control protocol) and provide a baseline data for the future research.

Keywords: Arunachal Pradesh, Habit, Himalaya, Invasion, Native

OPE-126

DOOMSDAY: THE ACCOLADE FOR RAVISHING NATURE

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ABSTRACT

Nature is a big recourse where the entire mankind finds refuge. The relationship between man and nature is like a maternal bond. It is an indigenous rapport where mankind inherently worships nature as a mother goddess. Everything is at peace between man and nature alliance until the emergence of avarice and the idea of mechanization in the psyche of mortals. In their materialistic daze humanity has forgotten that their life is at the clemency of nature. Humanity can have sustenance on earth only by nurturing their love, care and devotion to nature. The animosity of man towards nature has started when man decided to define and mark himself as the centre by repressing nature in the periphery. Mankind being the focal point initiated the chasm and contestation with nature. With the advancement of science and technological innovationhumanity beginto colonize nature without realizing it is creating a pitfall for its own annihilation.It is at the dawn of consumerism and philistinism that man has started to ravish nature by replacing the reverence towards nature with negligence. Consumerism culture has a large role in the victimization of nature. This victimization is not a mere accidental injury but a calculated one where nature is mutilated tothe condition that recuperation is under question and threat. This paper analyses the unexplored notion of humanity‘s demolition of nature in the context of cultural materialism and consumerism by focusing on two documentaries namely *Dirt* and *The Plastic Problem*. Besides, it spotlights the looming menace and question of survival strategies in the context of climatic change which has bestowed disparity in food production and consumption among people in the society.

Keywords: paganism, consumerism, materialism, climatic change, poverty, economic crisis etc.

OPE-127

STUDY ON STORAGE OF BLENDED MARMALADE

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ABSTRACT

Marmalade is the product which is prepared from citrus fruits, where the peel of fruit is being suspended, which is having nutritional importance as it is rich source of ascorbic acid and other minerals. Marmalade can be made as jelly as well as jam. Blending is one of the best methods to improve the nutritional quality of a value-added product by providing the basic nutrients of various fruits in a single product, hence giving better quality in respect to nutritional as well as sensorial aspect. Thus, keeping this objective in mind, the present investigation was done for finding the best suitable combination of blended marmalade where, we have prepared blended jam marmalade using mandarin and lime in different proportions and stored for 150 days and analysed with respect to physicochemical and sensory parameters. The experiment conducted at Post Harvest Technology Laboratory, Department of Fruit Science, Dr. PDKV, Akola in the year 2019-20. It was observed that, the treatment combination having 40% mandarin and 0% lime juicy vesicles was found to be best for the parameters TSS, total sugars, reducing sugars and sensory attributes whereas the treatment having 55% mandarin and 10% lime juicy vesicles for ascorbic acid content and acidity.

OPE 128

GREEN SYNTHESIS OF SILVER NANOPARTICLES AND ITS ANTIBACTERIAL ACTIVITY FROM THE LEAF EXTRACT OF TERMINALIABELLIRICAAND ACACIA CONCINNA PLANTS

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ABSTRACT:
Biosynthesis of nanoparticles is the major division in the field of applicable Nanoscience and nanotechnology. Silver nanoparticles are playing an important role in biomedical and various applications. The objective of the present study was to rapidly synthesize silver nanoparticles (AgNPs) using *Terminaliabellirica*and *Acacia concin*na leaf extract. The nanoparticles obtained have been characterized with various techniques like ultraviolet-visible spectrum, scanning electron microscopy, EDX analysis. Our result is concurring with earlier reports. These techniques showed the formation of AgNPs with an average size of 2nm to 100nm. Phytochemicals present in the plant were responsible for the quick reduction of Ag + ions to Ag 0 nanoparticles. The smaller-size of AgNPs has many positive attributes for antibacterial activity against pathogenic microorganisms.
Keywords: biosynthesis; silver nanoparticles; SEM; EDX; antibacterial activity

OPE-129

ROLE OF ARTIFICIAL INTELLIGENCE IN ENVIRONMENTAL SUSTAINABILITY

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ABSTRACT:

Artificial Intelligence (also known as AI) is considered to be the biggest game-changer in the global economy. With its gradual increase in scope and application, it is estimated that by 2030, AI will contribute up to 15.7 trillion of the global economy which is more than the current output of China and India combined. India outputs around a million engineers every financial year, 20% of whom are jobless. AI has grown so much that it can place a jobless engineer in an industry-based company, if he has done an artificial intelligence course.

Keywords:Artificial Intelligence, Microsoft, *Google*, *Tesla,* Economy, Environment

OPE-130

TRACING THE RELATIONSHIP BETWEEN CLIMATE CHANGE AND MIGRATION THROUGH AMITAV GHOSH"S *THE GREAT DERANGEMENT:CLIMATE CHANGE AND THE UNTHINKABLE*

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ABSTRACT

Preserving the natural resources is the most potential way of preserving the future of the earth is a well prescribed academic itinerary. Unfortunately, the health of earth degrades gradually; causes are many and every tangible or intangible change in earth's temperature affects living beings especially humans. Disrupting the natural environment directly equals to harming oneself. AmitavGhosh as a conscious writer in *The Great Derangement: Climate Change and the Unthinkable* deals with the background and involvement of humans in bringing down earth to its present condition. The writer has claimed that human development is inversely proportionate to earth's wellbeing. A re reading of the book will offer more interesting facts regarding the relation between climate change, development and deprivation of humans. Therefore, the paper is an attempt to study the contribution of humans in degenerating earth or themselves directly and the relationship between climate change and migration.

Keywords:Climate, Calamities, Earth, Degeneration, Migration

OPE-131

THE ECONOMIC IMPACT ON ENVIRONMENT

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ABSTRACT-

The conflict between economic growth and the environment is complex and sharper today than ever before. We measure pressure on nature as the sum of energy, mineral, net forest depletions and carbon dioxide damage. Economic growth means an increase in real output. Therefore, with increased output and consumption we are likely to see costs imposed on the environment. The environmental impact of economic growth includes the increased consumption of non-renewable resources, higher levels of pollution, global warming and the potential loss of environmental habitats.Economic development is usually measured by the total value of goods and services produced in an economy. This is referred to as the Gross Domestic Product (GDP), which is a calculation of the monetary value of all finished goods and services an economy can produce in a specific period of time adjusted for inflation. The environment is the source of the goods and services that fuel economic growth. The resources extracted from the environment are processed and manufactured into finished goods. The Environmental Costs Of economic activity are home by the poor by future generation or other countries.

Keywords-Economic Growth, Global Warming,GDP,Cost of Economic.

OPE-132

ANTHROPOCENTRIC „AFFECT‟ ON CLIMATE CHANGE: SEEKING RESILIENCE THROUGH ENVIRONMENTAL NARRATIVES

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ABSTRACT

The primary aim of this paper is to inject the idea that environmentally informed literary texts play an important role in bringing resilience to the burning issues of climate change. Environmental enthusiasts and literary exponents for the past few decades, dedicate responsible contributions in portraying serious social issues like global warming, climate change, demographic diffusions and so on to add ethnic, intrinsic and extrinsic values to the protocols, at least in their narrative imagination. Through literary works of art, they propose solutions to save and secure the planet and its vulnerability. Interdisciplinary conversations of Environmental Humanities and Affect Studies on anthropocentric depredation of planetary multispecies existence and extinctions, deal predominantly, with the subjects like climate change that affect our culture and society. Since, individual mutation is sought to resolve this burning issue, this paper urges the necessity of ecocritical, feminist and post-colonial literary produce, subsidised with environmental literacy and connect them with the backup of history, philosophy, science and technology, natural sciences and other such academia. Hence, the study infuses the ethno-philosophical turn of ‗Collective Affect' with the activistic resolutions of policy- making. ―Collective Affect‖, excludes the philosophical and psychological theories that are limited only to the nine primary human emotions proposed by Silvan Tomkins and heuristically involves stimulation of intensive emotional responses (of both literary producers and consumers), to the natural and environmental devastations. Also, the focus is to show how these narrative trajectories arouse awareness in individual's minds
– intuitive morality and conscience – and urges them to take initiatives in changing their mindset and collectively as human race responding to the crises and save the planet from anthropocentric apocalypse. The analysis apparently traces the narratives that are not only limited to cli-fi genre, but also the texts with multispecies environmental themes and appraise them with interdisciplinary comprehension of literary Affect.

Keywords: Affect Studies, Environmental Humanities, Climate Change, Cli-fi, Environment, Multispecies, Resilience.

OPE-133

CLIMATE CHANGE AND ITS IMPACT ON FOREST AND WILDLIFE.

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ABSTRACT
Growth in population is leading to heavy industrial development and urbanization, which in turn is leading to emission of green -house gases. Green- house gases are prime reason for global warming and climate change. This climate change has triggered tremendous effects on man, environment and biodiversity. The current paper focuses on the major impacts of climate change on forest and wildlife. Threats like forest fires, growth of invasive species, storms and cyclone, loss of productivity are very common these days. Alternatively, it's leading to huge impact on wildlife. Less availability of food, water, unfavorable climatic conditions, high temperature, etc. are some major problems faced by wild animals and birds in the forest. In addition to infrastructural development, roads, highways, railways, dams, fragmentation of forests, wild animals are subjected to adverse effect of climate change. This is a big threat to the animals and plants which are threatened and endangered, hence biodiversity is at risk. Population control, reduction in green - house gases emission, controlling vehicular pollution and regulating modern lifestyle are key factors which can combat the problem of global warming and climate change. Strict and stringent laws and implementation of environmental ethics by people are essential elements. Improving and maintaining adequate forest cover is not only required for conservation of wildlife but also for better maintenance of ecological balance.
Keywords: Global warming, climate change, forest ecosystem, wildlife, conservation.

OPE-134

SYNTHESIS AND STUDY OF OPTICAL AND PHOTOLUMINESCENCE PROPERTIES OF ER ION CODOPED BISMUTH TELLURITE GLASS AT 800NM

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ABSTRACT
Bismuth tellurite glasses of composition (80–x)TeO_2–20Bi_2O_3–10Na_2O–xEr_2O_3 (x is 0.5 and 1% mol percentage) were synthesized by melting-quenching-pressing method. Various characterization of sample has been done, as differential scanning calorimetry (DSC), X-Ray diffraction, UV-VISIBLE-IR absorption spectroscopy and fluorescence spectroscopy. DSC is done for thermal characterization, X-Ray diffractogram is supportive evidence for justify samples to be glass. Study of absorption spectra is provide information of optical forbidden energy gap E_{opt}, refractive index (n), Urbatch energy (Eu) ,cutoff and wavelength λ0, for the study of photoluminescence (PL), fluorescence spectrometry isdone.

Keywords: Refractive index (n), Urbatch energy (Eu), photoluminescence (PL)

OPE-135

GREEN HOUSE GAS (GHG) ONE OF THE CAUSES OF CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT MEASURES- A STUDY

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ABSTRACT-

Climate change, also known as Global warming or Global Cooling is a term that explains long term effect in the environment that affect life of living organisms adversely. Not some regions but the whole world is facing problems due to it. In 2014, The Inter-governmental Panel on Climate Change (IPPC) published the 5th Assessment report on climate change based on long-term scientific evidence. This stated that the increase in greenhouse gas (GHG) concentrations (namely carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydro fluoro carbons (HFCs), per fluoro carbons (PFCs), and sulphur hexafluoride (SF_6) over the past 100 years has predominantly been caused by human activities. GHGs are able to absorb long wave radiation (heat) that is reflected off the Earth's surface. They are then able to remit this radiation back down to Earth. If there were no GHGs in our atmosphere the Earth would be too cold for life as we know it to exist. However, as more fossil fuels, are burnt and other GHGs are released; the atmosphere is able to absorb more radiation and so is warming up. This is known as the **„greenhouse effect".**

Using secondary data from the earlier published research papers and published data from official websites, this paper is an honest effort to study greenhouse Gas Concentrations, its reasons, impact on climate change and possible remedial actions to be taken to minimize it.

Keywords- Greenhouse Gas Emission, climate change, sustainability

OPE-136

J.D.SALINGER"SCHARACTERPORTRAY ALINHIS FICTIONAL CREATIONS: - A CRITICALSTUDY

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ABSTRACT

This paper aims at focusing on character portrayal implied by J. D. Salinger in his fictional works. Many critics of American literature tried to peep into the innermost recesses of Salinger‘s characters to assess salinger‘s art of characterization. Most of his characters are usually witty and sensitive. They are trapped between two dimensions of the world: love & ―squalor.‖ The central problem in most of his fiction is not finding a bridge between these two worlds but bringing some sort of indiscriminate love into the world of squalor: to find a haven where love can triumph and flourish. Some characters such as the young , mixed-up Holden Caulfield , adopt indiscriminate love to aid them in their journey through the world of squalor, while others, such as Seymour Glass, achieve a sort of love , or satori , and are destroyed , in Seymour‘s case by a bullet through his head. Each of these characters is metropolitan in outlook and situation and is introverted: Their battles are private wars of spirit, not outward conflicts with society the characters‘ minds struggle to make sense of the dichotomy between love and squalor, often reaching a quiet peace and transcending their situation through a small act. They are also aware of the teenage feelings what they feel in themselves.

Jerome David Salinger, the author of one of the enduring classics of American literature, The Catcher in the Rye, is as famous for his flight from fame as for the one novel and thirteen short fictions that he produced before retreating into "seclusion‖ in 1953 on the 90-acre New England estate where he died on 27 January, 2010 aged 91. He gave voice to the rejection of materialism and regimentation that attracted the generation growing up in the United States after World War II. The Catcher in the Rye is one of the most widely read and influential postwar novels, and it entered the culture as a statement of youth‘s view of the complex world. Holden Caulfield, Salinger's petulant, yearning (and arguably manic-depressive) young hero was the original angry young man. That he was also a sensitive soul in a cynic's armour only made him more irresistible.

OPE-137

HYDROPHILICNATURE OF NICKEL FERRITETHINFILM DEPOSITED BY SPRAY PYROLYSISTECHNIQUE

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Abstract: Cobalt ferrite ($NiFe_2O_4$) thin film in nanocrystalline form has been deposited using spray pyrolysis technique. The film was deposited onto preheated glass substrate which subsequently annealed at 500^{o}C for 4 hr. The prepared film was characterized by X-ray diffraction technique. XRD analysis reveals the formation of single phase cubic spinel structured film. The crystallite size calculated from Debye-Scherrer‘s formula show nanocrystalline nature of the film. The lattice constant calculated from XRD data is in good agreement with the reported values. The thickness of the film was measured by surface profiler and found to be 249 nm to 267 nm. The hydrophilic nature of the film was confirmed through surface wettability properties by using contact angle method. The contact angle of the present film is 55.88^o which is less than 90^o showing the film is hydrophilic in nature.

OPE-138

CONSERVATION AND PROPOGATION OF CACTI AND SUCCULENTS IN CACTUS GARDEN.

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ABSTRACT

Cactus as xerophytes are able to cope with the todays changing environmental challengesConservation of cactus it is essential due to the increasinginfluenceand destruction of habitat threatened by loss and destruction of habitatmainly caused due tohuman activities. Biodiversity of cactus as wellas succulents it is necessary to increase conservation activities topreserve this fascinating group of floras. The present investigation was carried out for planting, propogation and conservation of this unique plant species.In PVP College Pravaranagar of about17differentcacti and succulents have been collected from different areas and sources.These are now conserved after maintaining standard their proliferation practices for by cutting and grafting are carried out, various growth parameters, application of proper concentration of chicken manure preparation of proper soil media for propogation of cactus plants were practiced out.Increase in the growth parameters was noticed after application of chicken manureThis cactus and succulent species are well flourishing in our college campus.Out of these 17cacti, succulents*Echiocactus grusonii ,Opuntia macrodactyly (Lehm),Mamellaria zelmammiana Boed, Euphorbia milli, Euphorbia tirucalli, Notocactus corynodes krainz,Cereus species,Sansevieria cylindrica Bojeretc.*are conserved.4species of cactus endangered,3species of least concern are wellmaintained.

Keywords: Conservation,Cactus,Succulents,Endangered,Propogation

OPE-139

INTERDISCIPLINARY STUDY OF RENEWABLE ENERGY RESOURCES IN INDIA

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ABSTRACT:
Energy is most necessary for economic and social development for every nation. Man had find out number of sources of energy resources for the past history. Convectional energy resources are the coal, petroleum and hydro- electricity. These energy resources has limitation. As per global demand of the energy, there are new non- conventional energy resources as the solar energy, wind energy, bio-gas etc. this non- convectional energy resources have efficiency than the conventional energy resource. India had made his new energy policy on the basis of non- conventional energy resource. Solar energy and wind energy has more potential capacity in this energy resources in India. India is one of the large production of energy from renewable sources. India has installed electricity generation capacity form non-conventional energy is 39%. These non- convectional energy resources are the renewable type energy resources. It is eco-friendly energy resources. Due to it more capacity in production of electricity, cycle type utilization and low environmental problems. It had lot of scope in the energy sector.

OPE-140

EVALUATION OF PARENTAL LINES FOR DEVELOPMENT OF POTENTIAL HYBRIDS IN *KHARIF* SORGHUM

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ABSTRACT

The experiment was carried out during *kharif* season of 2017-2018 at Sorghum Research Unit, Dr. P.D.K.V., and Akola to study the performance of parental lines for developing potential hybrids in *kharif* sorghum. The experiment was conducted in Randomized Block Design with three replications. The experimental material comprised of four lines and ten testers. These fourteen genotypes were crossed in line x tester fashion and performance of resulting 40 hybrids and fourteen genotypes was checked along with two standard checks CSH-25 and CSH-35. The highest standard heterosis over check CSH-35 in desirable direction for grain yield per plant was recorded by the hybrid AKMS 14 A x AKR 558 (42.45%) and total fifteen hybrids exhibited positive significant standard heterosis. Two hybrids AKMS 14 A x AKR 558 and AKMS 14 A x AKR 73 were found to be best suitable for developing high yielding and early maturing *kharif* sorghum hybrids.

Keywords- Sorghum, Crop improvement, Heterosis, Combining ability, Line x Tester, Grain yield.

OPE-141

MEDICINAL IMPORTANCE OF 1,2,3-TRIAZOLE HYBRID MOLECULES

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ABSTRACT

In nitrogen-containing heterocycles the 1,2,3-triazole ring has been an emerging area of interest for many researchers throughout the world owing to its huge pharmacological scope. These five-membered heterocyclic motifs with three nitrogen heteroatoms can be prepared easily using ‗click' chemistry with copper- catalysed azide-alkyne cycloaddition reactions. In recent times, 1,2,3-triazoles was demonstrated the ‗linker' property and a novel class of 1,2,3-triazole-containing hybrids and conjugates was synthesised and evaluated as lead compounds for different biological targets. These lead compounds have been revealed as anticancer, antimicrobial, anti-tubercular, antiviral, antidiabetic, antimalarial, anti-leishmanial, and neuroprotective agents. The present review summaries advances in lead compounds of 1,2,3-triazole-containing hybrids, conjugates, and their related heterocycles in medicinal chemistry. This review will be useful to researchers in research fields of organic synthesis, medicinal chemistry, phytochemistry, and pharmacology.

Keywords- 1,2,3-Triazole, hybrids, click chemistry etc.

OPE-142

DESIGN OF ONION STORAGE MONITORING SYSTEM FOR REDUCING LOSSES DURING STORAGE.

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ABSTRACT:

With an average annual production of 18 MMT India is the second largest producer of onions. While India produces more than the domestic need of country, due to poor storage facilities and absence of monitoring system more than 30% of the stored onions rot in the storage process. Majority of onion cultivators are marginal farmers with less/no capital to invest in smart warehouses, which is used by wealthy farmers or middlemen. So project focuses on marginal onion farmers, to check the losses of onions by rotting. This project will help them to detect if the onions have started to rot and also help them regulate humidity within Godowns. Long-term storage problems of onions will be solved through this project. As the project will provide cost-effective and efficient solution for monitoring most of the farmers will be able to use it.

The project is focused on these marginal farmers, making the monitoring of onions cost effective and easy to implement. The project focuses on detection of NH3 and CO2 and fluctuations in PPM of these gases over period of time can indicate rotting of onions, along with the temperature and humidity monitoring. The system is simple in design and can perform effectively at very less expense of energy. The readings of PPM are collected using Arduino, displayed on LED, and stored for further analysis.

Keywords: Monitoring, Detection, Rotting, Arduino, Ammonia, LED, Godowns, PPM, LED.

OPE-143

ULTRASONIC INVESTIGATION OF BINARY LIQUID MIXTURES OF DMSO WITH PRIMARY ALCOHOLS

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ABSTRACT:

Binary liquid mixtures of Dimethyl sulfoxide with methanol, ethanol and propanol have been studied at 295.15 K and 300.15 K. Acoustic, viscometric and volumetric data have been used to determine excess values of Gibb's free energy of activation, internal pressure and available volume. Deviation in data obtained for excess molar volume, viscosity and excess isentropic compressibility have been correlated with the help of Redlich Kister polynomial equation. Jouyban Acree model has been used to correlate experimental data and thus intermolecular interactions and non-ideal behavior have been interpretedfor binary liquid mixtures.

Keywords: Redlich Kister polynomial equation, Jouyban Acree model, excess values, acoustic

ENVIRONMENAL POSTER PRESENTATION

PPE-27

IMPACT OF FERTILIZER SUBSIDIES ON AGRICULTURE: A REVIEW

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ABSTRACT

India is an agricultural country. The majority of the population in the country is dependent on agriculture.Agriculture is the main source of livelihood for the majority of the people in the country. Therefore, agricultural production and agricultural income is an important component of the country's economy. This means that the share of agriculture in the gross national product is more important. In order to increase agricultural income, it is necessary to increase agricultural production. But many factors contribute to the increase in agricultural production, including land rainfall, weather, seeds, fertilizers, tools, etc. Many times due to insufficient rainfall and adverse climate change, farmers have to spend heavily on fertilizers and pesticides. More fertilizers are used in agriculture to increase production. It includes chemical and organic fertilizers. Many types of subsidies are given by the Government of India. One of them is a subsidy on chemical fertilizers. These include urea and non-urea fertilizers. Of these, chemical fertilizers are subsidized by the government. This is a kind of financial assistance to the farmers as the expenditure on chemical fertilizers is more than the total production cost. Therefore, the subsidy given for the purchase of fertilizer is affected. More subsidized fertilizers are procured from farmers in large quantities.

***Key words*:** chemical fertilizer, subsidy.

PPE-28

IMPACT OF CLIMATE CHANGE ON AGRICULTURE IN AHMEDNAGAR (M. S.)

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ABSTRACT

Climate change and agriculture are interrelated processes, both of which take place on a global scale, with the adverse effects of climate change affecting agriculture both directly and indirectly. This can take place through changes in average temperatures, rainfall, and climate extremes (e.g., heat waves); changes in pests and diseases; changes in atmospheric carbon dioxide and ground-level ozone concentrations; changes in the nutritional quality of some foods; The impact of these changes on those dependent on rainfed farming is devastating, but those with access to irrigation are not spared either. Unpredictable rainfall patterns mean that crops have less time to grow, producing less over time. Farmers resort to higher use of fertiliser and water to compensate, degrading the quality of soil as well as lowering groundwater levels, while spending much more to grow the same amount – or less – on the same acreage.

The results show an increase in mean temperature and precipitation as well as maximum temperature during the growing season or Rabi season (November–April). The direct impact of climate change, via changes in temperature and precipitation, leads to wheat yield losses between −1% and −8% _Then, the indirect impact of climate change is examined, considering the impact of climate change on water availability leading to a decrease in irrigation. Temperature variations may marginally affect the productivity of these principal crops like sugarcane, rice, sorghum and millet. However, it may have some major effect on wheat productivity. If the frequency and intensity of rainfall increases then more flooding problems may be a cause for concern. Flood control methods in these principal crops are already available like broad bed furrow systems wherein cotton, sorghum, soybean and other crops can escape the type of surface flooding experienced. In addition to this, other climate-resilient crops may take up the place of these presently affected crops, Temperatures and rainfall amounts in Ahmednagar District vary from year to year and influence the number of crops that farmers can produce.

PPE-29

STUDY OF RC COUPLED AMPLIFIER USING PSPICE AND TOP SPICE

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ABSTRACT: -

This paper addresses the performance of RC coupled amplifier using PSpice and Top Spice electronic circuit simulation software's. Traditionally electronic circuit design was verified by building prototypes, subjecting the circuit to the various stimuli and then measuring its response using appropriate laboratory equipment's. Prototype building is somewhat time consuming. But produces practical experience from which we judge the manufacturability of the design. Computer programs that simulate the performance of an electronic circuit provide a simple cost-effective means of confirming the intended operation prior to circuit construction and verifying new ideas that could led to improve the circuit performance.

LIFESCIENCES ORAL PRESENTATION

OPZ-33

STUDY AND CHARACTERIZATION OF RHEUMATOID ARTHRITIS ASSOCIATED PROTEIN PATTERN

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ABSTRACT

Rheumatoid arthritis is most common autoimmune & polygenic diseases seen most commonly in women rather than men in the ratio of 2.5:1.According to ACR & European League against Rheumatism (EULAR) criteria to classify RA is based on measurement of anti-citrullinated peptide antibodies (anti-CCP/ACPA), C - reactive protein (CRP) and Rheumatoid factor (RF). Study has been conducted on 500 suspected cases and 20 normal healthy individuals. The method used for testing biochemical parameter was highly sensitive and advanced method on instrument working on CLIA and Immunoturdimetry principle. In this study, 234 cases were found sero positive, in which 192 were women and rest 42 were men. More cases of disease in women observed in the 30-40 years of age with P value significance indicating it could be applied to large number of women population. In men the occurrence of disease is observed in the age group of 20-30 years,even though the case number is less but the P value significance is more indicating the application to large population of men. This work has thrown a light on the silent occurrence of the disease in young population. Detection of the disease should be done only with the suggested universal guidelines for early detection and to reduce morbidity and mortality.

Keywords: anti-CCP,RF,CRP,F factor, correlation-significance

OPZ-34

USE OF DAMAGE EGGS IN POULTRY FEED – A SOLUTION ON ECONOMICAL LOSS OF POULTRY INDUSTRIES.

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ABSTRACT:
In a pandemic of Covid-19, There is a locked down in a whole country. All transportation was stopped. In such acritical condition, in poultry industry number of damaged eggs were stocked. The life of these damaged eggs are very few days. Ie 2 to 3 days.Within this 2 to 3 days we can utilizedit, before they are rotten.When all transportation were stop, it is big problem, how to utilizedit. There is big economic all oss of poultry farmer.The present study solve this problem of poultry farmer by using damaged eggs in poultry feed. It gives best quality feed having high protein and nutrition to the poultry birds.
Keywords-poultry birds,Covid19,

OPZ-35

AVIFAUNAL DIVERSITY OF CHALBARDI LAKE NEARBHADRAWATI, CHANDRAPUR DISTRICT (M.S.), INDIA.

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ABSTRACT

Birds are crucial to maintain balance of many ecosystems and maintain a tropic level. Some birds are easily migrating, transport a variety of things throughtheenvironment.Theyarenaturalwaytocontrolpestsingardens,on farms and other places.Therefore detail study on avifauna and their ecology is important to protect them. The present research was carried out to document the avifauna in and around the ChalbardiLake located near talukaBhadrawati in ChandrapurDistrict of Maharashtra State from June 2016 to May 2018 in which 45 species of birds were recorded of 11 different orders and 27 families during study. Among the recorded species 39 were resident 04 were resident migrant and 02 were wintervisitor.

Keywords-Avifauna, ChalbardiLake, avifaunal diversity

OPZ 36

PREVALENCE AND SEASONAL STUDY OF GASTROINTESTINAL AND SOME PROTOZOAN PARASITES FROM SMALL RUMINANT IN AN AROUND SILLOD TAHSIL FROM AURANGABADDISTRICT.

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ABSTRACT

Rearing of small ruminants are the important for farmer to improving the economy of our country. New breed majorly used in rural areas to obtain high productivity. If ignore Proper management and health care then parasites infects the animals and cause less productivity. Helminthes and Protozoan parasites are the major gastrointestinal parasites which cause hazardous effect on small ruminants such as sheep and goat in rural areas, which create highly economical loss of farmer. If ignore these infection cause higher mortality rate. The present study carried out to investigate prevalence of gastrointestinal and some protozoan parasites, their rate of infection seasonally and risk factor in sheep and goat from Sillod tahsil, from Aurangabad district in Maharashtra. Fecal sample were collected from different sites of geographical location around Sillod tahsil. Overall study period was since June 2018 to May 2019. During this period 410 samples from sheep and 530 from goat as total 940 samples were collected seasonally. Out of them 296 positive (72%) in sheep and 327 positive (61%) in goat gastrointestinal parasites. Overall 643 samples positives out of total 940 samples. High infection rate found in monsoon season 83% in sheep while 73% in goat. During winter 71% in sheep and 60% in goat, 61% in sheep and 50% in goat during summer respectively. Age and sex wise infection higher in less the one year animal 80% while sheep shows more infection rate than goat. Infected animal shows loss of weight, birth rate and difficulty during feeding. Other Protozoan parasites *Coccidia, Balentidium and Entamoeba* species also found in higher rate. Coccidiosis is more Zoonotic agent found 69.45% during study period.

Keywords: Prevalence, Seasonal, Helminthes, Protozoan, Sheep, Goat, Sillod.

OPZ 37

STUDIES ON MONTHLY VARIATIONS IN D.O, B.O.D. AND C.O.D. PARAMETERS OF BORI RESERVOIR NEAR NALDURG, DIST. OSMANABAD, MAHARASHTRA

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ABSTRACT

In the present communication the scientific study was conducted to determine the monthly variation in dissolved oxygen, biological oxygen demand and chemical oxygen demand parameters of Bori Reservoir near Naldurg, Dist. Osmanabad. Maharashtra. The work was carried out during the year 2020 (January to December.).

The scientific investigation shows that, the minimum D.O. values were recorded in winter and minimum in summer. The Biological oxygen demand and Chemical oxygen demand values were observed more during monsoon than winter and summer.

***Keywords*:** Bori Reservoir near Naldurg -B.O.D.- C.O.D. D.O. – Monthly Variation.

LIFESCIENCES POSTER PRESENTATION

PPZ-9

ENZYMATIC AND NON-ENZYMATIC ANTIOXIDANT RESPONSE TO WATER STRESS IN *LEPIDIUMSATIVUM* L. DUE TO FOLIAR APPLICATION OF GLYCINEBETAINE

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ABSTRACT

With the global climate change and the destruction of ecological balance, water shortage has become a serious ecological problem throughout the world and drought stress has become a key factor restricting the development of agricultural production. Therefore, it is essential to study the drought tolerance of crops. In present study the influence of glycine betaine on enzymatic and non-enzymatic antioxidant were investigated in water stressed *Lepidium sativum* L. Plants were grown under controlled temperature (25℃) and light conditions (16 hours light and 8 hours dark). Foliar application of glycine betaine (50µg/l, 100µg/l and 250µg/l) were standardized and applied to different water potential -0.01Ψ_w MPa, -0.02Ψ_w MPa and -0.03Ψ_w MPa. Enzymatic antioxidant (catalase, peroxidase, superoxide dismutase, ascorbate peroxidase, glutathione peroxidase, glutathione-s-transferase), and non-enzymatic antioxidant (phenols, ascorbic acid, tocopherol, flavonoid and total chlorophyll) were determined after 35, 75 and 110 days. Foliar application of *glycine betaine enhanced the enzymatic and non-enzymatic antioxidant activity in stressed plant,* as a lowmolecular weight organic metabolite *it played a crucial role in cellular osmotic adjustment. The present study investigated that the glycine betaine played significant role in water stress tolerance in L. sativum*.

***Keywords*:** Abiotic stress, ascorbate peroxidase, catalase, glycine betaine, superoxide dismutase, water stress.

PPZ-10

STUDY OF GROWTH AND DEVELOPMENTAL PARAMETERS AFTER SUPPLEMENTATION OF FORMULATED FEED TO CHICKS OF POULTRY BIRDS

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ABSTRACT

The present study was carried out to evaluate importance of bivalve molluscs as poultry supplementation. For this evaluation a poultry birds were provided different experimental formulation of whole crushed bivalve molluscs *Lamellidens marginalis* (L) along with shell and all white grain such as rice, wheat, maiz, sorghum. The effects of these formulations were analyzed by growth parameter of growing chicks of poultry birds.

Growth rate of experimental chicks on weight gain basis was recorded which were kept in different cages named as experimental and control groups for 30 days of experiment in the laboratory condition, which were observed day-by-day intervals. The comparative study of growth and development respect to the supplementation provided food for growing chicks of poultry birds. Simultaneously reading was taken on the basis of weight gain along with health of growing chicks in the cages, were setup in the laboratory condition. This study showed significant results in growth and development performance in chicks of poultry birds.

KeyWords:Chicks of Poultry birds, *Lamellidens marginalis* (L), Feed formulation, Weight gain

PPZ-11

A CURRENT INVESTIGATION OF THE AVIAN DIVERSITY IN KOMBAI VILLAGE AT THENI DISTRICT, TAMIL NADU.

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ABSTRACT

A study to find out the avian diversity at the kombai (9.83°N 77.32°E) village, Theni district, Tamil Nadu. Kombai is locating at the foothills of western ghats, it has an average elevation from the sea level of 399 meters (1309 feet). The village is surrounded by mountains west side western ghats, and east side salamalai. Birds are the most diverse and attractive fauna in any region, and they also the indicators of the habitat or the ecosystem of that particular area. The work mainly carried in the foothills of the Western Ghats and Salamalai of the village. Direct count method were used for data collection. Direct method observations were made using naked eyes and equipments (camera and binocular). The work leads to knowthe Residental and Migratory status of birdsin the study area and Feeding habit of the birds. And alsoknow about the habitat loss of birds, it‘s effect due to the urbanization.

Key words: Avifauna, Western Ghats,Ecosystem, Biological Indicators, Resident.

LIFE SCIENCES ORAL PRESENTATION

OPB-37

CORRELATION AND PATH ANALYSIS STUDIESIN SOYBEAN (*GLYCINEMAX* (L.) MERRILL).

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ABSTRACT

Soybean [*Glycine max* (L.) Merrill], a miracle crop, is also known as goldenbean because of its high nutritive value and various uses. It is one of theeconomically important legume crops since it contains 40 per cent protein and 20per cent oil. It has becomemajor source of edible vegetable oil and protein for feed and food supplement in theworld.An experiment was conducted on soybean at ―All India Coordinated Research Project on Soybean‖, VasantraoNaikMarathwadaKrishiVidyapeeth, Parbhani with view to study correlation and path analysis effects for yield, yield components and oil content traits in 125 genotypes along with five national and three local checks of soybean. Genotypic and phenotypic correlation of seed yield was positive and significant with seed yield per row, 100 seed weight, oil content (%), number of pods per plant, number of pods per cluster and number of pod clusters per plant. Path analysis revealed that pod clusters per plant, 100 seed weight; number of pods per plant and number of branches per plant had highest positive direct effect on seed yield per plant at genotypic and phenotypic level. Through the study of path analysis it was apparent that maximum direct effect were exerted by number of pod clusters per plant, 100 seed weight and number of pods per plant. All these traits exhibited positive and significant correlation with seed yield per plant. Therefore, these characters may be considered as the most important yield contributing characters and due emphasis should be placed on these characters while breeding for high seed yield insoybean.

***Key words*:** Correlation, path analysis, soybean, yield.

OPB-38

ANALYSIS OF DNA CONTENT IN *LILIUM* L. CULTIVAR BY USING FLOW CYTOMETRY.

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ABSTRACT:

Lilium is a member Liliaceae family which belongs to class monocotyledon. Lily is a perennial ornamental plant with extremely high aesthetic, edible, and medicinal value. It is divided into it is mainly divided into 3 groups Longiflorum (L), Asiatic (A), and Oriental (0) hybrids. Because of high variation in shape and colour of Flower *Lilium*gain so much popularity. Now days, in plant science specially in crop and horticultural division breeding is an important technique for new hybrid or cultivar production and the flow cytometry is an effective, reliable, vital, quick and important tool for breeding purpose in analysis of genome size, DNA content and ploidy levels. This paper gives an idea about the variation in two cultivars of *Lilium* which originated from two different groups which showed difference in ploidy level, CV values and DNAcontent.

Keyword:*Lilium*, Flow cytometry, Ploidy, DNA content, Cultivars.

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OPB-39

EFFECT OF VAMYCORRHIZAE INOCULATION ON VEGETATIVE GROWTH IN PERENNIALSOYBEAN.

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ABSTRACT

Perennial Soybean well known as *Neonotonia wightii* (Wight & Arn.) J.A. Lackey of Fabaceae grows widely in Asian sub continent. classified by its habit wit stem trailing and climbing with strong taproot, it has woody base and is climbing up to 10 m. Pod are brown, linear-oblong, straight sometimes slightly with curved apex, grooved and septate between the seeds. Seeds are oblong and laterally compressed, olive-green to light reddish-brown in colour. Present experiment was carried out to study effect of VAM and Phosphorous on vegetative growth parameters like height, Number of branches, and leaves per branches. Results reflected positive curve in growth parameters of Perennial soybean.

Keywords:Perennial Soy, Neonotonia wightii, VAM.

0PB 40

ADDRESSING HOW THE EFFECTS OF URBANIZATION CAN CAUSE GLOBAL CLIMATIC CHANGE IN THE AREAS CONNECTED TO GT ROAD: WITH SPECIAL REFERENCE TO HEALTH HAZARDS IN THE SOCIETY.

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ABSTRACT

Now days, the whole country features on reflected current news, data streams, political issues and also on global pandemic change but the reason behind it which are very simple in terminology are urbanization and defforestation, shows impact in the form of long term shift in global and regional climatic pattern. The belt from Delhi to Dehradun is the most polluted one among the country that include nearby areas like Ghaziabad, Meerut, Saharanpur, Roorkee and many more. In case if people want to go through or recall those medicinal activities done by with the usages of medicinal arboreum (trees) like *Albizialebbeck*(L.) Benth.,*Albiziaprocera*(Roxb.) Benth.,*Kigeliaafricana*(Lam.) Benth., *Jacaranda mimosifolia*D.Don,*Bombaxceiba* L. *Buteamonosperma*(Lam.) Kuntze, *Ceibapentandra*(L.) Gaertn.,Ficusracemosa L., *Ficusbengalensis*L., *F. lacor*Buch.-Ham, *F. populifolia, Delonixregia*(Bojer ex Hook.) Raf.,*Madhucalongifolia, var. latifolia*(Roxb.) A. Chev., *Mangiferaindica*L., *Pongamiapinnata*(L.)Pierre, *Syzygiumcumini*(L.)Skeels, *Dalbergiasissoo*Roxb.ex DC., *Terminaliaarjuna* (Roxb. ex DC.) Wight &Arn.,*T. bellirica* (Gaertn.)Roxb.,*T. chebula* Retz., *T.elliptica*Willd., etc. that has been cut down to promote urban sectors nearby roads and villages of thisrange (GT Road). This leads to accelerate the regions into serious spot of health issues and hazards that shows its impactin our society from time to time on monthly or yearly basis to the belief of destruction not of restoration. Various organizations particularly Department of Forest and Environment should take initive in restoration and plantation of these avenue plants along with other plantation which is being made by the department under various social forestry programme.

***Keywords**:* Avenues, Climate Change, Forest, Medicinal Plants, Urbanization

OPB 41

CHARACTERIZATION AND EVALUATION OF LOCALGERMPLASM OF HORSE GRAM[*MACROTYLOMA UNIFLORUM* (LAM.)VERDCOURT] COLLECTEDFROM DIVERSE CLIMATIC CONDITION

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ABSTRACT

An experiment was carried out to evaluate 44 genotypes of Horse Gram .Among 44 genotypes studied, the genotype DHLH-25 & 26 (days to 50 per cent flowering), DHLH-7,25 &26 (days to maturity), DHLH-1 (plant height), DHLH-5 (number of primary branches per plant), DHLH-44 (number of cluster per plant), DHLH-16 (pod length), DHLH-36 (number of seeds per pod), DHLH-19 (1000 seed weight), DHLH-22 (number of pods per plant), DHLH-22 (seed yield per plant) and DHLN-6 (protein content) showed high performance for the respective characters. The variability for seed yield was ranged between 4.45 to 15.57 g, along with other yield contributing characters also showed good amount of variability. Days to 50 per cent flowering ranged between 62.0 to 93.50 days. Other characters also recorded large range of variability *viz*.; days to maturity (113.50 to 155.50 days), plant height (46.2 to 103.8 cm), number of primary branches per plant (4.4 to 7.5), number of cluster per plant (42.0 to 117.10), pod length (3.86 to 5.56), number of seeds per pod (3.5 to 5.8), 1000 seed weight (19.46 to 29.72 g), protein content (17.21 to 25.10 %).These genotypes may be tested in different enviromment under climate changed concept

Key words : Characterization, Evaluation, Local Germplasm, Horse gram

OPB 42

DETERMINATION OF GENETICS IN F_1 POPULATION OF RICE (ADT45 x IR81869-B-B-195) FOR DROUGHT TOLERANCE AND GRAIN YIELD

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ABSTRACT:

Here, we determined the genetics of 70 F_1 rice lines derived from a cross between ADT 45 and IR81869-B- B-195 (DTY2.1 and DTY3.1 QTLs) for drought tolerance and grain yield under drought condition. In the evaluation for drought tolerance, most of the rice lines were registered as highly tolerant and tolerant than both parental lines. Based on drought tolerance degree (DTD) analysis, a number of 63 and 30 rice lines were found to be more DTD value than recipient and donor parent, respectively. In the grain yield evaluation, a number of 28 and 49 lines were noted for having high percentage than the recipient and donor parent, respectively. In the heterosis analysis, many F1 rice lines are noted as positive heterosis for drought tolerance and seed setting. The percentage of heritability was found to be more for seed setting (21.97%) when compare to drought tolerance (19.60%). In statistical analysis, there was significant difference in mean value, variance, standard deviation and CV% between parental and F_1 rice lines for seed setting rather than drought tolerance. This study based on phenotype and genetic analysis will help the rice breeders to select the rice lines effectively and quickly to advance the improvement.

Keywords: Drought tolerance, grain yield, QTLs, Heterosis and Heritability, F1 rice lines

LIFE SCIENCES POSTER PRESENTATON

PPB-7

INVESTIGATION OF AIR-BORNE FUNGAL SPORE IN OPEN FIELD CULTIVATION OF CAPSICUM ANNUM L. IN DINDORI TEHSIL

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ABSTRACT

An extramural survey of aerospora of *Ascomycetes* was conducted over the Capsicum field *(Capsicum annum L.*) at Nashik District on open field cultivation during Monsoon season of June to October and winter season November to March. The data of airborne microbial components was collected with the help of continuous Tilak Air Sampler (Tilak and Kulkarni, 1970). In order to access, the disease incidence to the crop by Ascospore types. Over a period of survey, there were 17 spore types during monsoon season and 13 spores' types during winter season recorded from this group. Their high concentration was found in air under weather conditions in favors to sporogenesis and release into atmosphere. The abundance of many Ascospores types in the aerospora revealed the presence of copious Ascomycotina members in parasitic and sporphytic forms in and around the fields. *Bombardia, Cucurbitaria, Didymosphaeria, Hypoxylon, Hysterium, Lophiostoma, Oidiopsis, Parodiella, Pleospora, Sordaria and Sporormia* was the common Ascospores types noted throughout the period of investigation. *Chaetomium, Claviceps, Melanospora* and *Meliola*are present in monsoon season only.

Key words- Aerospora, Capsicum annum, Ascomycetes.

PPB-8

BIODIVERSITY OF ETHNOMEDICINALPLANTS IN NORTH MAHARASHTRA (INDIA) USEFUL FOR HUMAN HEALTH

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ABSTRACT:

Ethno-botanicalSurveys were carried out since June 2009 and information was gained through open discussions and interviews with tradipractitioners. The present paper deals with the botanicals sold by the vendors in Dhule, Jalgaon, Nandurbar, Nasik districts of North Maharashtra (India). The objectives of the investigation were to gather and document information on application of plants by the tradipractitioners in the region. Presently, 23 plant species belonging 23 genera and 19 families are being informed. Of these, 08 species are noted for the first time from Indian region. These are administered in the form of decoction, infusion, paste, oil, juice, powder, extract, etc. In many applications, they use a sole drug or occasionally supplemented by other botanicals or substances like sugar, honey, oil, cow-ghee, milk, etc. These are administered to combat common diseases such asTuberculosis, scabies, piles, leprosy, fever, acidity, sperm count, ulcers, asthma, antidote, diabetes, tooth ache,urinary stone, tumor, **intestinal worms**, rheumatism., nocturnal emission, menstruation, kidney stone
,cough, throat, Gonorrhoea, diarrhoeaetc. The data accrued is evaluated by cross- cultural comparisons with other Indian claims to bring out veracity and uniqueness of the claims. Although these are traditionally reported useful for human health they must be testified on scientific lines involving chemical, biological and clinical screening.

Keywords:Ethnomedicine in North Maharashtra for human health.

PPB-9

EFFECT OF ENVIRONMENTALPOLLUTANTSANDTHERMAL STRESSON NITROGEN METABOLISM OF *LABLAB PURPUREUS* SEEDLINGS

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ABSTRACT

Heavy metals like Cadmium and Lead has no nutritional value for plants. The presence of Cd and Pd in plants results in many physiological alterations affecting nitrogen metabolism. The effect of $CdCl_2$ 10^{-6} , 10^{-4}mol/l and $Pb(NO_3)_2$ 10^{-7}, 10^{-4}mol/l and thermal stress were investigated in *L.purpureus*seedlings *invitro*. *Invitro* studies showed stimulatory effect of ALT(Alanine aminotransaminase)activity with respect to control in Heavy metals($(PbNO_3)_2$ and $CdCl_2$) under normal condition whereas thermal stress treated seedlings had an inhibitory effect on ALT activity. However, AST(Aspartate aminotransaminase) activity was increased when the seedlings were treated with $CdCl_2$ only under normal condition whereas $Pb(NO_3)_2$ decreased AST activity. Thermal stress imposed *L.purpereus*showed decreased AST activity when compared to control. NR(Nitrate reductase) activity was found to be inhibited with $Pb(NO_3)_2$ but treatment of $CdCl_2$ stimulated NR activity under normal condition. Metabolites like Protein and Proline was found to be declined when treated with $Pb(NO_3)_2$ and $CdCl_2$ under normal conditions but thermal stress stimulated Proline contents in *LabLab*seedlings which may be attributed to stress tolerance mechanism.

Keywords – Heavy Metals, Thermal Stress, Stress Tolerance, Alanine aminotransaminase, Aspartate aminotransaminase, Nitrate reductase

PPB-10

FUNGICIDE RESISTANCE OF PLANT PATHOGENS

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ABSTRACT

Many cases of fungicide resistance have been reported from all over the world for different fungicides. Few cases of fungicide resistance are noted Resistant dose of fungicides also varies according to the country and type of pathogenic strain involved in diseases development. for conventional compounds such as dicarboximides (Gullino, 1983), Organomercurials It is important to know that in the laboratory the extent of fungicide resistance in a pathogen can be achieved through the induction of resistance by various treatments. This may help in the management of fungicide resistance in a pathogen of Agricultural crops.

***Keyword**:* Fungicide, Resistant, Pathogen, disease, dicarboximides, agricultural

PPB-11

EVALUATION OF INFLUENCE OF SALICYLIC ACID AND EPSOM SALT STRESS ON PLANT GROWTH (*BETA VULGARIS* L.).

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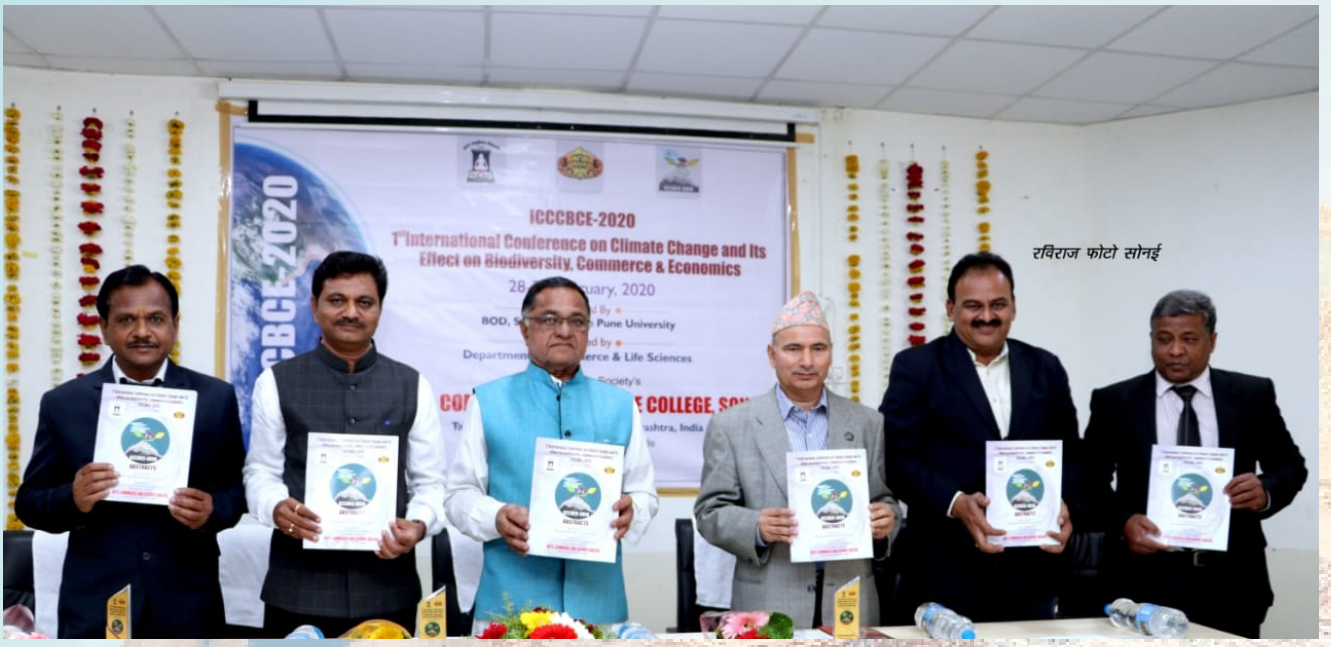
ABSTRACT
Beta vulgaris L. is an edible plant of the Chenopodiaceae family.Economically, it is the most important crop consumed as vegetable, processed juice and food colour.The presence of nitrogen-containing water-soluble pigments betalains gives red beet its characteristic colour.The effects of salicylic acid Epsom salt treatments on beet germination and growth were investigated in the current study. The various concentrations (2.5,5.0,7.5,10.0,12.5,15.0,17.5 and 20.0 $mScm^{-1}$) of Epsom salt were used for soil application and for foliar application the various concentrations of salicylic acid (0.4,0.8,1.2,1.6,2.0,2.4,2.8 and 3.2 mM) was used. In this experiment, germination percentage and the growth parameters like plant height, number of leaves, and leaf area were studied to evaluate the effect of salicylic acid (SA) and Epsom salt (ES) on beet plants. Among all these treatments, a significant increase in height was seen specifically at 1.2 mM of SA at 120 DAG (days after germination) and a linear increase in height was observed at ECe 5, 7.5, 10 mSm^{-1} of ES at 120-days. as well as the Number of petioles increased significantly.

Keywords:Beta vulgaris, salicylic acid, Epsom salt, foliar spray, growth parameters.



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यशवंत सामाजिक प्रतिष्ठान सोनई

तरुणाई समाजासाठी..

पुस्तके वाचा, पुस्तके भेट द्या.

नेत्रदान संकल्प करा, अंधाना दृष्टी द्या.

झाडे लावा, झाडे जगवा.

आपला परिसर स्वच्छ ठेवा.