Abstract Book

National (Online) Conference on Recent Trends in Life science, Energy and Environment

(NCRLEE 2021)

24th and 25th September, 2021

Organized by

Department of Botany, Zoology and Microbiology

Dapoli Education Society's

DAPOLI URBAN BANK SENIOR SCIENCE COLLEGE DAPOLI, RATNAGIRI

UNIVERSITY OF MUMBAI

(Permanently Affiliated to University of Mumbai
NAAC Re-Accredited "B++" CGPA 3.004)

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| न हि ज्ञानेन सदृशं पवित्रमिह विद्यते |

Dapoli Education Society's
DAPOLI URBAN BANK SENIOR SCIENCE COLLEGE DAPOLI
UNIVERSITY OF MUMBAI
(Permanently Affiliated by Mumbai University NAAC Re-Accredited "B++" CGPA 3.004)

Message

I am happy that the Department of Botany, Zoology and Microbiology of our institute organizing National Conference on Recent trends in Life Science, Energy and Environment (NCRLEE 2021) to be held on 24th and 25th September 2021 through online mode, aims to provide a platform for dissemination of scientific research among eminent scientists, academicians and young researcher in the field of life science and environment. The conference shall bring together aspirants from around the world to broaden the scientific field of vision and cultivate comprehensive thinking ability so that students and researcher can become outstanding scientists and contribute to the rapidly changing society and to the world as well.

I am sure that during this national conference number of new ideas will emerge out and will be discussed. I appreciate the efforts taken by all members of organizing committee. I wish the conference a grand success.

Dr. Sandesh P. Jagdale
Principal,
Dapoli Urban Bank Senior Science Dapoli

Message

Dr. Bapu Yamgar

Organizing Secretory,

NCRLEE-21

Dapoli Urban Bank Senior Science College

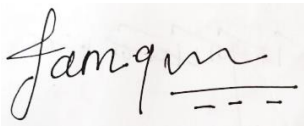
It is great privilege for us Dapoli education society's, Dapoli Urban Bank Senior Science College, Dapoli has organize Online Two days National Conference on Recent trends in Life science, Energy and Environment(NCRLEE 2021) on 24, 25 th september 2021.

Conference is specially design to provide platform for students, researchers and scientist to share the knowledge and ideas in the recent trends in the field of life science, energy and environment

NCRLEE will provide excellent national forum for sharing knowledge and results in life science. It also provides platform to researcher and practitioners from both academia as well as industry.

I guarantee that the conference will be productive and worth your precious time

Thank you.

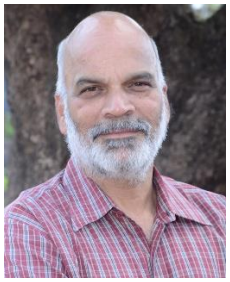


Dr. Bapu Yamgar

Organizing Secretory,

NCRLEE21

Message

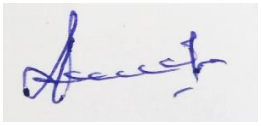


Dr. Prasad Karmarkar,
Secretory
Dapoli Education Society, Dapoli

It is indeed a matter of pleasure to note that Dapoli education society's, Dapoli Urban Bank Senior Science College, Dapoli has organized Online Two days National Conference on Recent trends in Life science, Energy and Environment(NCRLEE 2021) on 24, 25 th september 2021.

I hope the conference enhances professionalism and capabilities of all the participants which promotes towards the future advancement of academic profession. I wish the conference a great success

I wish the organizers, resource persons, delegates very fruitful two days participation



Dr. Prasad Karmarkar,
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Dapoli Education Society, Dapoli

Programme Schedule

Dapoli education society's
Dapoli Urban Bank Senior Science College, Dapoli Dist. Ratnagiri, India (M.S.)

TECHNICAL PROGRAMME

Two days National Online Conference on Recent trends in Life science, Energy and Environment (NCRLEE 2021)

Day I: 24 th September, 2021

10 am to 10.30 am		▪ **Inaugural Function** ▪ **Dr. Sanjay Jagtap,** ***Chief Guest,*** *Joint director, Konkan region, Panvel* ▪ **Dr. Prasad Karmarkar,** *Secretory, Dapoli Education Society, Dapoli* ▪ **Dr. Sandesh Jagdale,** *Principal, Dapoli Urban Bank Senior Science College, Dapoli*
10.30 am to 11.00 am	**Key note Address**	▪ **Prof. Dr. S. S. Deokule** ▪ *Ex. Head, Department of Botany, Savitribai Phule Pune university.*
Session I		
11.00 am to 11.45 am	**PL-1**	▪ **Prof. Shrirang Yadav** ▪ *Ex. Head, Department of Botany, Shivaji University, Kolhapur.* ▪ **Topic:** Endemic, Endangered and threatened plant of western ghat ▪ **Chairperson: Dr. D. R. Shirke** ▪ *Ex. Professor, Department of Botany, Savitribai Phule Pune university.*
11.45 am to 12.30 pm	**PL-2**	▪ **Mr. Kishore Shitole** ▪ **Topic:** Water conservation ▪ **Chairperson: Dr. S. B. Dharap** *Principal, Bhausaheb Nene College. Pen-Raigad*
12.30 pm to 1.15 pm	**PL-3**	▪ **Dr. Shailesh Waghmare** ▪ *Assistant professor, Department of Microbiology, Shivaji University, Kolhapur* ▪ **Topic:** Antibiotic resistance an issue of concern ▪ **Chairperson: Dr. R.G. Bagool,** ▪ *Ex. Adjunct Professor, Department of Botany, Dapoli Urban Bank Senior Science.*

Day II: 25 th September, 2021

10.00 am to 11.00 am		▪ **Oral presentations (4 presentation)** ▪ **Chairperson: Dr. Suchandra Dutta** ▪ *Department of Botany, R. D. National College, Bandra (W), Mumbai*
11.00 am to 11.45 am	**PL- 4**	▪ **Dr. E.K. Nareshwar** ▪ *Environmental communication and Eco consultant* ▪ **Topic:** Biodiversity and climate Adaptation ▪ **Chairperson: Dr. Avinash Ade** *Head, Department of Botany, Savitribai Phule Pune University*
11.45 am to 12.30 am	**PL-5**	▪ **Name: Dr. Pradip Sarawade,** ▪ ***Assistant professor, Department of Physics, University of. Mumbai*** ▪ **Topic:** Nanomaterial for environmental applications ▪ **Chairperson: Dr. Rajesh Kambale** ▪ *Professor Department of Chemistry, University of. Mumbai,*
12.30 pm to 1.15 pm	**PL-6**	▪ **Name: Dr. Parvish Pandya** ▪ *Ex. Associate Professor, Department of Zoology, Bhavans college, Mumbai* ▪ **Topic:** Ecosystem Restoration ▪ **Chairperson: Dr. Prasad Karnik**
1.15 pm to 1.45 pm		▪ **Valedictory Function** ▪ **Dr. Arvind Kulkarni,** ***Chief Guest,*** *Principal, ACS college, Lanja* ▪ **Dr. Sandesh Jagdale,** *Principal, Dapoli Urban bank Senior Science College, Dapoli*

ABSTRACT CONTENTS

Submission:1

EFFECT OF HERBICIDE PRETILACHLOR ON NITROGEN FIXING FERN *AZOLLA MICROPHYLLA*

Abhishek Chris*

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ABSTRACT:

Azolla microphylla, a nitrogen fixing water fern was grown in Espianase and Watanabe medium containing different concentrations of pretilachlor (5-20 ppm). Growth, nitrate uptake, ammonium uptake and enzymes of nitrogen assimilation like nitrate reductase, glutamine synthetase and nitrogenase activities were analyzed. All the four doses of pretilachlor decreased the growth and decrement was dose dependent. Differential doses of the herbicide decline nitrate and ammonia uptake. The enzymatic activities of nitrate reductase, glutamine synthetase and nitrogenase were also inhibited by the herbicide stress. Among all parameters nitrogenase the chief nitrogen fixing enzymes was completely destroyed at the highest dose of pretilachlor.

Key words: *Azolla microphylla*, pretilachlor, growth, nitrogen assimilation.

Submission: 2

COUPLINGS OF TERMINAL ALKYNES WITH BENZYL BROMIDES CATALYZED BY MIXED LIGAND TRANSITION METAL COMPLEXES

Sujit Hegade[a]*, Gautam Gaikwad[a], Yuvraj Jadhav[a], Avinash Pore[a], Abhijeet Mulik[b], Bapu Yamgar[c]

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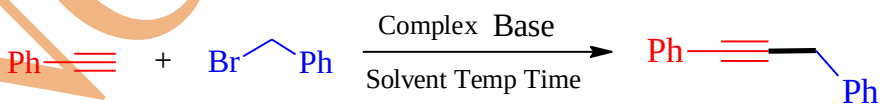
Affiliated to Shivaji University, Kolhapur. (M.S.) India.
[b]Department of Chemistry, Sadguru Gadage Maharaj College, Karad (M.S.) India.
Affiliated to Shivaji University, Kolhapur (M.S.) India.
[c]Dapoli Urban Bank Senior college, Dapoli (M.S.) India.
Affiliated to Mumbai University, Mumbai. (M.S.) India.

ABSTRACT:

We have developed mixed ligand transition metal complexes catalyzed benzylation of terminal alkynes from easily available benzyl bromides. Benzylic bromides have been successfully coupled with various phenyl acetylene in moderate to excellent yields. It was observed that all the complexes worked as the efficient catalysts. The present methodology agreements several advantages, including simplicity of the preparation and handling of the catalyst, simple and easy work-up, short reaction times, high yields of the products. Especially mixed ligand transition metal complex $[Ni(L)(PPh_3)_2Cl_2]$ with triphenylphosphine show greater activity as compared to other complexes.

Graphical Abstract



Keywords. Mixed ligand transition metal complexes, Terminal alkynes, Benzyl bromides, Benzylation

Corresponding Author: S. S. Hegade : Email sujithegade01@gmail.com

Submission:3

NOTE ON THE NECTARY OF TWO MEDICINALLY IMPORTANT PLANTS

Suchandra R. Dutta

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Abstract:

Nectar secretion is an important phenomenon in plants. It serves many purposes, defence and pollination are two reasons why nectar is produced. *Ensete superbum* (Roxb.) Cheesman (Musaceae Juss) and *Saraca asoca* (Roxb.) W.J.de Wilde (Fabaceae Lindl.) are the two medicinally important plants that are found in India and possess nectar which is used for their own defense during different stages in their life cycle. *Ensete superbum* has floral nectary helps to protect the reproductive organs of the flower and help in pollination. *Saraca asoca* shows the extra floral nectary which aids in defence for the young leaves. Field observations of these plants are discussed here.

Key words: nectary, defense mechanism, *Saraca asoca*, *Ensete superbum*

Submission: 4

ANTIMICROBIAL ACTIVITY AND PHYTOCHEMICAL ANALYSIS OF SELECTED FRUIT AND VEGETABLE PEELS

Vertika Maurya[1], Jitendra R. Patil[1]*

[1] *Seva Sadan's R. K. Talreja College of Arts, Science and Commerce, Ulhasnagar-421003, India.*

**Corresponding Author – jrpatilrkt@gmail.com*

Abstract:

The fruits and vegetable peels are discarded as waste, though it contains many active constituents like tannins, saponins, phenol, alkaloids etc. Hence the aim of this experiment is to investigate the Phytochemical and Antimicrobial activity of aqueous and methanolic extract of the selected fruit and vegetable peels. The peel of fruits and vegetables like Cucumber, Elephant Foot, Jackfruit, Muskmelon, Onion, Pineapple, Potato, Pumpkin, and Watermelon were selected for the study. Antimicrobial activity was performed by using agar well diffusion method against the selected microbes like *Escherichia coli, Staphylococcus aureus, Salmonella typhi, Trichoderma hazarianum, Aspergillus niger, A. tamari, Penicillium.* Cucumber and Onion peels extract found the most effective against few microbes. Maximum zone of inhibition was found in the methanolic extract of cucumber peel against *E. coli* (2.5 cm), 2.3 cm zone of inhibition was found against *S. typhi* for onion peel and against *S. aureus* (2.1 cm) for the same. The phytochemical analysis showed the presence of saponin, tannin and alkaloid in aqueous extracts whereas only alkaloids were found in the methanolic extract of Pineapple, Muskmelon, Watermelon, Jackfruit. In case of Cucumber, Elephant foot, Onion, Potato peels phytochemicals like tannins, saponins, alkaloid, flavonoid, terpenoid and phenol were found.

Keywords: Fruit and Vegetable peels, Bacterial and Fungal cultures, Maceration, Phytochemical, antibacterial.

Submission:5

DIVERSITY AND BIOTECHNOLOGICAL POTENTIALS OF GENUS *ASPERGILLUS* ISOLATED FROM RHIZOSPHERE SOIL OF OKARA.

Lal Sahab Yadav*

Department of Botany Smt. CHM College, Ulhasnagar 421003Thane Maharashtra

lalsahablal@gmail.com

Abstract:

Aspergillus is one of the most dominant genus of fungi commonly isolated from various habitats including water and air as well as from the terrestrial environments, however, only a few species have been studied in rhizosphere soil. In this study diversity of Aspergillus investigated from rhizosphere soil of Okara plant, focusing on exploration of their biotechnological potentials. A total of 15 isolates were isolated from three different localities, based on morphological characteristics seven species of *Aspergillus* has been identified. All isolates were screened for their biotechnological potentials qualitatively. Out of fifteen isolates eight isolates exhibited phosphate solubilising ability, five isolates showed cellulase activity, three were exhibited amylase activity and one isolate showed tannase activity. Based on primary screening, the isolates which showed promising activity were undertaken for quantitative analysis of above activity. The *A. niger* showed the ability to produce all screened extracellular enzymes and phosphate solubilising potential while *Aspergillus japonicas* only exhibited phosphate solubilising ability. The *Aspergillus nidulans*, *Aspergillus wentii*, *Aspergillus aculeatus* and *Aspergillus terreus* showed enzyme cellulase activity. Enzyme amylase produced by *Aspergillus flavus* and *Aspergillus nidulans* while enzyme tannase secreted by only *Aspergillus niger*. This study contributes to catalogue genus *Aspergillus* from rhizosphere soil, and also provides additional information to support future research about the industrial potential of these isolates that may produce enzymes of industrial interest.

Key words: Rhizospher fungi, Phosphate solubilizers, Extracellular enzymes.

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Submission:6.

EFFECT OF MALATHION ON RBC'S AND WBC'S IN FRESH WATER FISH *CHANNA PUNCTATUS.*

***R.S. Magar**

* Dept. of Zoology, Shri. Datta A.C.S. College, Hadgaon Dist. Nanded

Abstract:

Indiscriminate use of pesticides has elevated the risk of contamination of environment and aquatic habitat. Considering above fact, the present investigation was carried out to study the impact of sublethal concentration of malathion exposed after 24, 48, 72 and 96 hrs on RBC'S AND WBC'S content of fresh water fish *Channa puntatus*. *Channa punctatus* is an edible fish abundantly present in local river Godavari Dist-Nanded. Malathion is an organophosphate insecticide that kill insect by disrupting there nervous system. The hematological analysis showed significant decrease in RBC'S AND WBC'S content of treated group compared with control.

Keywords: Malathion, *Channa punctatus*, RBC, WBC.

Submission:7

A REVIEW ON CONSERVATION AND MANAGEMENT OF MANGROVES IN MAHARASHTRA WITH SPECIAL REFERENCE TO MUMBAI.

Dr. Lakshmi Girish

Assistant Professor, Department of Botany,
Smt. Chandibai Himathmal Mansukhani College, Ulhasnagar, Mumbai, Maharashtra

Abstract:

Mangrove is one of the most productive ecosystems which is scientifically studied and understood in detail, besides being one of the most vulnerable and overlooked ecosystems. The ecological, environmental, and economic services that they provide is beyond any measure. Mangrove plants have been obliterated along all coastal states of India, leading to many natural calamities, since past two decades. Many efforts have been undertaken by the state government and NGOs for protecting this vital ecosystem nationwide. The paper reviews the various efforts taken to protect and conserve the ecosystem in Maharashtra with special reference to Mumbai.

Submission:8

STUDY OF DIETARY INTAKE OF MERCURY THROUGH FISH CONSUMPTION IN RESIDENTS OF DIWE-KEWNI VILLAGE ALONG ULHAS RIVER ESTUARY IN MAHARASHTRA AND RECOMMENDATIONS ON FISH MEALS TO BE CONSUMED.

Jayashree S. Menon*

*Maharashtra College of Arts, Science and Commerce, 246/A, J.B.B. Marg, Mumbai Central, Mumbai (INDIA)

***E-mail:** menonjayu72@gmail.com

ABSTRACT

Exposure to mercury has shown to cause neurological and kidney impairment. Earlier studies have shown that most of the fish in Ulhas river estuary are contaminated with Hg. Fish is known to be a staple item in the indigenous fish-eating populations of Diwe-Kewni village who consume large quantities of contaminated fish from Ulhas river estuary. A study on dietary intake of mercury through fish consumption in Diwe-Kewni villagers revealed a range of 0 to 7.266 µg/kg body weight/week with an average of 2.838 ± 1.667 µg/kg body weight/week. Diwe-Kewni village thus had 33.13 % of its population exceeding PTWI limit of 3.3 µg/kg body weight /week as proposed by JECFA (2003), forcing this population to be categorized under vulnerable group with a risk of Hg poisoning. High consumption of carnivorous fish like *Mystus* spp., *Arius* spp. and *Scylla serrata*, along with high rate of fish consumption and a high frequency of fish consumption were factors influencing high dietary intake of Hg in this population. In order to place them within safe limit of 3.3 µg/kg body wt/week, it is found necessary to limit the consumption of carnivorous fish, reduce the quantity of fish consumption or decrease the number of days of fish consumption in a week. However, people can relish on several fish meals of herbivorous fish like prawns, *Mugil* spp. and *Tilapia* spp. while fishes like *Lates* spp., and *Gobius* spp. should be consumed in moderation.

Key Words: Mercury, Dietary intake, Fish, Diwe-Kewni, Safe-limit, Recommendations

Submission:9

A STUDY OF EFFECT OF GREEN TEA ON ORAL BACTERIA

***Jagtap Nanda Bhupal**

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ABSTRACT

Green tea is a type of tea that is made from *Camellia sinensis* leaves and buds that have not undergone the same withering and oxidation used to make green teas and black teas. Green tea originated in China, but its production and manufacture has spread to other countries in East Asia. There has been considerable research on the possible health effects of consuming green tea regularly; there is little evidence that drinking green tea has any effects on health. This study investigates the effects of green tea at varying concentrations and durations on its antimicrobial activity against common oral bacteria. Gram stain tests revealed that our bacteria cultures had a mixture of Gram-positive and Gram-negative bacteria. A paper disk diffusion test revealed that increasing the concentration of green tea increased the zones of inhibition. The minimum inhibitory concentration test implied a positive correlation between the concentration of green tea and bacterial growth. Tests indicated that, green tea had minimal effect however; these results were inconclusive due to small sample size. As confirmed by the study, green tea does have antibacterial properties, but further investigations are required to make a definitive conclusion. This paper was to determine if green tea inhibit the growth of oral bacteria.

Key words: Green Tea, Oral bacteria, Gram stain.

Submission:10

FOLLICULAR PLACENTA AND EMBRYONIC DEVELOPMENT IN GUPPY (*POECILIA RETICULATA)*

Jagtap Nanda[*], Mote L.T.[**]

[*]Dapoli Urban Bank Senior Science College, Dapoli. Dist-Ratnagiri.

[**]ASC college Ramanandnagar Kirloskarwadi Dist-Sangli.

E-mail: jnsshinde80@gmail.com

ABSTRACT:

The larvivorous fish *Poecilia reticulata* was propagated prolifically in the garden for control of mosquito vectors and later redistributed in a number of water reservoirs, in different villages nearby Dapoli. The gravid live bearing females were quickly dissected for their ovaries and embryos. The developed embryo with yellow rounded yolk sac, the remnants of the follicular placental tissue and thick vascular network of connective tissue was also observed.

Key words: Guppy, follicular placenta, embryo, corpus luteum.

Submission: 11.

Isolation, characterization and documentation of endophytic fungi associated with mangrove plant *Avicennia marina* from Godrej mangrove forest, Mumbai- Maharashtra.

Kushwaha Vinodkumar* & Yadav Lal Sahab

kushwahavinod30@gmail.com

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ABSTRACT:

Mangrove ecosystem is confined to a dynamic zone between terrestrial and marine habitats and due to tidal activities mangrove endophytes undergo both habitats which contribute to great diversity of fungi. In present study the endophytic fungi were isolated from leaf, stem and pneumatophore of *Avicennia marina*. Total 21 endophytic isolates were obtained during the course of six-time sampling in three different seasons. Based on morphological characteristics isolates were identified. The isolates were affiliated to ten different genera (*Aspergillus, Penicillim, Alternaria Cladosporium, Curvularia, Fusarium, Nigrospora, Trichoderma, Pestalotia* and *Cheatomium)*. The colonization of endophytic fungi was comparatively more in leaf and pneumatophore than stem. *Aspergillus* spp. were the most dominant in leaf and stem while *Chaetomium* spp. were prominent in pnuematomore. The isolates were screened for their biotechnological potentials viz. enzymes activities. This study provides a catalogue of endophytic fungi associated with *Avicenia marina* plants for future studies in screening of bioactive metabolites from endophytic isolates.

Key words: Mangrove, Endophytic fungi, secondary metabolites etc.

Submission:12.

NON -CONVENTIONAL VEGETABLES FROM MAHARASHTRA AND WEST BENGAL

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Bandra (W.), Mumbai 400050, Maharashtra

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ABSTRACT:

Seasonal and local vegetables are store house of medicinal properties and helps in supplementing necessary minerals and nutrition to our body. This in turn helps to promote diversified and healthy diets thereby help building immunity in our body to fight against diseases.

Non -conventional vegetables are the vegetables which are not cultivated (generally) and are not a part of main stream market. These vegetables are growing naturally along cultivation field, waste land, along forest borders or on the forest floors. They do not require any kind of fertilizers or pesticides. These can be classified as naturally growing edibles. Such type of vegetables forms one of the sources of income generation for people living in rural pockets or along the fringes of forests. Aim of our project is to document such non-conventional vegetables which are sold in the (outskirt) of the market and sensitize people for the consumption of these vegetables. This is a gesture to increase local economy.

Present paper deals with documentation and of such non- conventional vegetables sold in the market in Maharashtra and West Bengal states of India. Level of awareness about such vegetables and their recipes are also discussed in this paper.

Keywords: Non- conventional Vegetables, Medicinal value, Local, Market, India.

Submission:13.

AVIFAUNAL ASSEMBLAGE AND DISTRIBUTION PATTERN ALONG THE URBAN-RURAL GRADIENTS OF DOMBIVLI, THANE DISTRICT, MAHARASHTRA

***Mhatre K. J.**

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ABSTRACT:

The relatedness between some birds and their habitats makes them best candidates for evaluation of the health of an ecosystem. With the current population trends, urbanization is likely to increase; which is known to adversely impact the avifauna by decreasing natural food availability, resting sites, nesting sites and increasing stress, competition and bioaccumulation of pollutants. Diversity, species richness, evenness and distribution of birds in habitats, differently influenced by humans, can be used as a tool to understand anthropogenic impact. In this study, I examined effect of Urban-Rural gradient on birds to evaluate ecological health along the outskirts of Dombivli city. 12 sites were selected for the study and 500m long transects were marked. Monthly surveys were conducted between January 2020 and December 2020. Visits were made early in the morning and late in the evening as the peak activity of birds is seen during that time. Though the rural site was more species rich (20.19), diverse (5.1263) and even (0.91253) than other three sites, birds were more abundant along the Urban-Rural gradient. Numerically, urban site was dominated by omnivore species, which was replaced by insectivorous species on the periphery, and carnivorous and granivorous species in the rural area. The current study indicates that, some bird species have developed preference for urban-rural junctions mostly due to well-established ground, canopy cover along with concrete structures, which has a potential to provide more foraging, nesting and shelter opportunities for certain species.

Keywords: *Avifauna, diversity, species richness, assemblage*

Submission:14.

COMMENTS ON THE PLANT DIVERSITY OF KANHERI CAVES, SANJAY GANDHI NATIONAL PARK, BORIVALI, MAHARASHTRA

[1]Hensal Rodrigues and [2]Suchandra Dutta

Department of Botany, R.D and S.H. National College, Bandra, Mumbai 400050, Maharashtra

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ABSTRACT:

Sanjay Gandhi National Park is the only National Park situated in the metropolitan city of Mumbai, Maharashtra. Kanheri caves is a historical monument of Buddhist architecture situated within the National Park, dating back to the 1st Century B.C. – 9th Century A.D. and comes under the jurisdiction of the Forest Department and Archaeological Survey of India. It attracts a large number of visitors because of its historical significance. Besides, it is also home to a tremendous biodiversity including different plant groups. The current study deals with the floristic documentation of Kanheri caves. The roof top (plateau) of the caves is the type locality of a couple of the species discussed in the present work. This paper provides a first-hand floristic record of the Kanheri Caves and its adjoining region. Threats to the caves have been highlighted, survey has been conducted to understand it's status and measures for sensitization have been undertaken as well as suggested.

Keywords: Identification, plateau, type locality, Human intervention, Sensitization

Submission:15.

Hepatoprotective effects of Bismuth (V) Metalloantibiotic in *Staphylococcus aureus* infected Balb/c mice

Sandeep Garg

ABSTRACT:

Bismuth (V) was complexed with antibiotics Chloramphenicol (CHL) and Streptomycin (STR) for synthesizing a novel Metalloantibiotic (BCS). This BCS was evaluated for its relative hepatotoxicity. For this adult Balb/c mouse were randomly divided into six groups (A-F). Groups, B to F were challenged with *Streptococcus aureus* (ATCC-33862) intraperitoneally. Group B was control infected and C, D, E and F were treated with STR, CHL, CHL+ STR ligand and BCS Metalloantibiotic, respectively. The control group (A) was administered with 0.9% physiological saline adlibitum. Antioxidants enzymes like SOD, CAT, GR, GPx and GSH in serum were assayed for knowing the augmentation and treatment of installed infection. % change in enzymatic antioxidants was significant ($p<0.05$) in experimental groups than control group. Among treated group, BCS treated showed least fluctuation in all antioxidant enzymes. Change in serum AST, ALT, ALP and CPK levels were significantly different ($p<0.05$) in experimental groups compared to control group. Thus, it was concluded that the combination of this Metalloantibiotic could be a potent one with less side effects in future for severe bacterial infections like MRSA.

Key words: Chloramphenicol, Streptomycin, Bismuth (V) complex, hepatotoxicity, antioxidants, antibiotics.

Submission:16.

SESUVIUM PORTULACATSRUM: A PROMISING HALOPHYTE FOR ENVIRONMENTAL PROTECTION

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ABSTRACT:

The anthropogenic activities like urban waste, runoff, mining, industrial wastes have severely disturbed arable land. The lands are degraded due to accumulation of toxic compounds like excess salt, heavy metals, textile dyes, turnery waste etc. Restoration of degraded lands requires selection of species, which have a high tolerance to all these toxic compounds. In this context, a halophyte, *Sesuvium portulacastrum* can be a suitable candidate. Our work has shown that under high salinity *Sesuvium* accumulated high sodium (160 ug.g^{-1}DW) in leaves. This ability was utilized in desalination of artificially saline soil (ECe decreased from 7.0 to 4.9 dS m^{-1}) and phytodesalinized soil was used for the cultivation of glycophytes (Rice and Sorghum). Apart from salt tolerance, *Sesuvium* also exhibits high accumulation potential of heavy metals [cadmium (350–700 µg g^{-1} dry matter), lead (3400 ug g^{-1} DW), arsenic (155 µg g^{-1} DW), nickel (1050 µg g^{-1} DW, cesium (536.10 µg g^{-1})]. Also, *Sesuvium* has the potential application for the degradation of textile dyes like reactive green HE4B (92% decoloration) and 19A-reactive green HE4BD (98% decoloration). In addition, *Sesuvium* is a rich source of flavanoids, glycolipids, 20 hydroxyecdysone, amino acids, alkaloids, polysaccharides, saponins, minerals, steroids and triterpines. Considering these high stress tolerance and potential applications, it is suggested that *Sesuvium* can be a potential candidate for environmental protection.

Keywords: *Sesuvium portulacastrum*, land degradation, stress tolerance, environmental protection

Submission:17.

GREEN SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL ACTIVITY OF SILVER NITRATE NANOPARTICLES USING *CAPSICUM ANNUUM* L.

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ABSTARCT:

Background and Objective: In last few decades, Nanotechnology has emerged as promising technology in all sectors of science including food, medicine health etc. In this study, a green synthesis approach was used to synthesize silver nitrate nano particles using Capsicum annuum leaf extract. The main objectives of this study are to assess antimicrobial properties these nano particles.

Methods: To accomplish this objective, dried chilli were extracted in 50% ethanol in distilled water. The 1M solution of silver nitrate was prepared distilled water. The silver nitrate solution was added to diluted chilli extract in 1:4 proportion. This mixture was boiled for 25 minutes and stored in amber coloured bottle. This solution was subjected to antimicrobial activities against *E. coli* and *S. aureus*.

Results: The synthesis of nanoparticles was confirmed by change in colour of solution and Ultraviolet-visible (UV-vis) spectrophotometry. The nano particles demonstrated good antimicrobial activity against *E. coli* and *S. aureus*.

Conclusion: Silver nanoparticles are successfully synthesized by chilli leaf extract. The antimicrobial potential of these nano-particles can be utilized in public health and food industries. The green synthesis approach found to be cost- effective, non- toxic and eco-friendly.

Submission:18.

IDENTIFICATION OF *ANISAKIS* SPP. INFECTION AND ITS EFFECT IN SKIPJACK TUNA (*Katsuwonus pelamis* L.)

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This study was aimed to identify the type of nematodes that infects the Skipjack tuna (*Katsuwonus pelamis*). Nematodes, *Anisakis* spp. commonly infects marine mammals, fish, crustaceans and cephalopods in a wide geographical distribution. Nematodes, *Anisakis* spp. were identified causing parasitic infestation in *Katsuwonus pelamis*. Fishes used were from local markets of different cities, Thane District, Maharashtra. It is an edible fish and of commercial importance. Proximate composition data given describes the quality of fish pre and post parasitic infestation. The fish study also showed that parasite infected were up to the L3 larvae stage only. This study has relevance in medicine and economy as when the fish is consumed raw, half-cooked (Sushi) it has adverse effects on human health and quality of fish.

KEYWORDS : Nematodes, *Anisakis* spp., Skipjack tuna (*Katsuwonus pelamis*), Sushi

Submission:19.

EFFECT OF ROOT KNOT NEMATODE (*MELOIDOGYNE INCOGNITA*) ON GROWTH OF CUCUMBER PLANT

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ABSTRACT:

Root knot nematode, *Meloidogyne incognita* is one of the biggest problem in the production of cucumber (*Cucumis sativus*). This plant parasitic nematode depends on root sap to survive, which causes improper supply of water and minerals to the plant. Some of the basic symptoms of these nematodes on plants are galling of roots, yellowing of leaves and stunted growth in plant. In the present study, a pot experiment was conducted to study the effect of root knot nematode on the growth of the cucumber plant. The infected plants showed decreased leaf size, shoot weight, nutrients and chlorosis of leaves as compared to the control. The leaves showed curling and roots showed gall formation after 30 days of growth.

Key words: Cucumber, root knot nematode, *Meloidogyne incognita*, root galls

Submission:20.

GROWTH RESPONSE OF BOTTLE GOURD PLANT TO ROOT KNOT NEMATODE (*MELOIDOGYNE INCOGNITA*) INFECTION.

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ABSTRACT:

Root-knot Nematode (*Meloidogyne incognita*) causes severe damage and yield loss to a large number of cultivated plants especially vegetables in the tropical and sub-tropical countries. These phytoparasites drastically delay the growth of the plants as a result of gall formation in the roots. A pot experiment (2kg soil) was conducted to study the effect of root knot nematode on the growth of the bottle gourd plant The growth criteria was determined by shoot - root length, shoot fresh weight and number of leaves and nutrients. The infected plants showed decreased chlorophyll content, shoot mass and NPK content compared to the control. The leaves showed curling of leaves and the roots developed galls after 30 days.

Keywords: *Meloidogyne incognita*, Bottle gourd, root knot nematode, root galls

Submission:21.

ESTIMATION OF ESSENTIAL NUTRIENTS AND ORGANIC MATTER IN FRUIT WASTES.

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ABSTRACT:

Among the various naturally occurring resources, wastes of fruits are renewable resources having potential applications in bio fertilizers. They are non-toxic, most abundant, easily available and able to support the rapid growth of plants. Essential nutrients in the fruit wastes like peels of onion, banana, lemon, sweet lime, sweet peas was estimated. The fruit peels were air dried first, then oven dried and powdered. Nitrogen was estimated by Kjeldahl's method, total Phosphorus by Molybdophosphoric method spectrophotometrically, Potassium by flame photometer. Organic matter was estimated by Black and Walkey's method. All the fruit wastes are rich sources of nutrients and organic matter. Green pea waste showed maximum nitrogen. Maximum potassium was found in banana waste.

Key words: Fruit waste, Essential nutrients, NPK, Organic matter

Submission:22.

ALLELOPATHY: AN EFFECTIVE WAY OF WEED MANAGEMENT.

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ABSTRACT:

Allelopathy is a typical natural wonder by which one plant produces biochemicals that impact the development, endurance, improvement, and generation of different life forms. These biochemicals are known as allelochemicals and have helpful or impeding consequences for other living plants. Plant allelopathy is one of the methods of connection among receptor and contributor plants and may apply either constructive outcomes (e.g., for horticultural administration, for example, weed control, crop insurance, or harvest re-foundation) or negative impacts (e.g., autotoxicity, soil infection, or organic intrusion). Allelochemicals can conceivably be utilized as development controllers, herbicides, bug sprays, and antimicrobial agents. Allelopathy is a process by which a plant releases chemicals that can either inhibit or competitors. Allelopathic plants do sometimes pose obstacles that are hard to overcome, however. Soil sickness, a general term for a problem that may well be caused by residues of allelochemicals that persist in the soil after the plant is gone, may make some sites unsuitable for growing other plants. Allelopaths are plants that have an advanced weapon in their arsenal. The allelopathic plant competes with other species through "chemical warfare" by releasing chemicals that inhibit the growth of its neighbouring plants. To guarantee supportable agrarian turn of events, it is essential to misuse development frameworks that exploit the stimulatory/inhibitory impact of allelopathic plants to direct plant development and improvement and to maintain a strategic distance from allelopathic autotoxicity.

Submission:23.

MORPHOMETRIC STUDY OF MANGROVE CLAM *GELOINA PROXIMA* (PRIME-1864) OF DAPOLI COAST OF RATNAGIRI DISTRICT.

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ABSTRACT:

Mangrove clam *Geloina proxima* is one of the indigenous and dominant bivalves of Dapoli Coast. The morphometric study of clam *G. proxima* was carried out during May 2017 to September 2018. To understand growth rate and its pattern, the length and weight parameters were studied. Average total length for males and females recorded was 65.40 mm and 65.25 mm, respectively, which is also supported by the calculation of the weight studies. It is interesting to note that in *G. proxima*, irrespective of the sex, there is a coordination between the length and weight relationship. In the present study significant difference was observed between the length-weight relationship to weight relationship of male and females of *G. proxima*. Analysis of results for length-weight relationship in *G. proxima* indicates negative allometric growth pattern. It is observed that weight of *G. proxima* bears a curvilinear relationship with the length that becomes linear on logarithmic transformation. The value of correlation coefficient in males was r = 0.97 while the same in females were r =0.98, which were found to be statistically highly significant. The coefficient of determination r^2 is an indication of goodness of fit of regression to the observed data. The closer it is to 1, the better is the fit.

Keywords: Mangrove, Geloina, Morphometric, study, Dapoli

Submission:24.

EFFECT OF SALT STRESS ON NITRATE REDUCTASE ACTIVITY IN COWPEA (*VIGNA UNGUICULATA* (L.) WALP.)

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ABSTRACT:

Nitrate Reductase is the enzyme that catalyzes the first step in reduction of nitrate N to organic forms within the plant, and it is thought to reflect the level of N activity in leaves (Beevers and Hageman,1969; Lane et al., 1975).Nitrate reductase (NR) is the key enzyme for the nitrogen assimilation in plant cells and also works as an important enzymatic source of nitric oxide(NO), which then regulates plant growth and resistance to biotic and abiotic stresses(Yu-Fan Fu et al.,2018).The effect of two different concentrations(50mM and 100mM) of NaCl on nitrate reductase activities (NRA) in Cowpea (*Vigna unguiculata* (L.) Walp.) leaves were studied. Cowpea is well adapted to stress and has excellent nutritional qualities. Salt stress caused a marked reduction in NRA in leaves.

Keywords: Cowpea (*Vigna unguiculata* (L.) Walp.), Nitrate Reductase, Salt stress

Submission:25.

STUDY OF FISH PROCESSING AND PRESERVATION METHODS USED ALONG DAPOLI COAST OF RATNAGIRI DISTRICT, MAHARASHTRA (INDIA).

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ABSTRACT:

Fish is natural food source for the mankind, but is very highly perishable in nature. It is therefore important to process and preserve this natural food source quickly to stabilize its taste, nutritive value and prize in the markets. Various methods have been used to process and preserve the fish. Dapoli is the one dominant fish producing centre of Ratnagiri district. A very large amount of fish catch produced by this centre. In this study attempt have been done to know the status of various preservation methods that are used commonly by the fishermen. From this study is noted that regularly various preservation methods are practiced. The survey at different landing centers were carried out during the study period March 2018 to March 2021.

It is concluded that Harney, Dabhol and Burondi are the principal landing centers of Dapoli region where icing is the most commonly used fish preservation method for almost all type of fish and shellfishes. It is also noted that, sun drying is also used for preservation of low cost fishes. Icing is done right from landing centre to local markets by making the use of Ice. This survey also indicated that the sophisticated modern fish processing technique like Canning, Plate Freezing, Thermal processing, Pulsed light technology, Infra-red (IR) and Radio frequency (RF) processing technology, Ohmic or Joule heating, High pressure processing are no practiced in this region are not used along the Dapoli region to increase the shelf life of fish and shell fish.

Keywords: Fish, Preservation, Methods, Sun Drying, Icing.

Submission:26.

STUDY ON THE BIO INSECTICIDAL ACTIVITY OF *VITEX NEGUNDO* LEAF EXTRACTS ON DIFFERENT PLANT SPECIES.

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ABSTRACT:

The serious problems associated with the use of synthetic pesticides includes, the development of insecticide resistance, adverse effects on non-target organisms, widespread environmental hazards. Hence, to protect our crop fields. There is increasing demand for the development of effective ecofriendly and environmentally safe alternative insecticide. Here, attempt has been made to use common plant derivatives for the control of important pest species. *Vitex negundo* is an evergreen medicinal deciduous shrub. It is native to India. In the given experiment leaf extract of *Vitex negundo* has been used as a biopesticides on the different vegetables and ornamental plants. The is observed that the leaf extract of *Vitex negundo* extract showed the beneficial effect on the host plants and found very effective to controls the insect, pest on experimental plants hence, this could be an alternative source of insecticide that can be suggested to farmer to protect their crops.

Submission:27.

STUDIES OF PHYSICOCHEMICAL PARAMETERS OF SOIL FROM DIFFERENT LOCATION IN DAPOLI TEHSIL, DIST. RATNAGIRI (M.S.)

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ABSTRACT:

Western Ghats contains rich quality of soil towards the fertility of land. Koyana river provide a good quality of soil in its catchment area. The region around the river having land which contains differentpercentage of Zn, Mn, Cu, C, P. They are participated in the fertility of soil. The objective of this study was to determine such a parameter using different analytical instrument's such as pH meter, conductometer, visible spectrophotometer and AAS instrument. From results, it's observed that there is need to increase soil fertility to increase the crop yield and quality. Our work is very important for farmers residing in this area to improve the quality and fertility.

Keywords: Soil, Parameters, Fertility, Quality, Instruments.

Submission:28.

STUDY ON EFFICACY OF SYNTHETIC PESTICIDE (IMIDACLOPRID) ON THE BIOLOGICAL PARAMETERS OF *CALLOSOBRUCHUS CHINENSIS* LINNAEUS.

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ABSTRACT:

Pesticides are documented to have strong impact on the biological parameters of insects. This study reviews the sub-lethal impact of Imidacloprid on various biological parameters of *Callosobruchus chinensis*. The designed insect was exposed to sub-lethal doses of Imidacloprid. The exposure did not produce immediate mortality of the insect, but had prolonged effects on its biological parameters. The laboratory analysis was carried out with LC_{20}, LC_{50} and LC_{90} at room temperature of 25-27 ℃ and relative humidity of 60-70%. The designed pesticide had significant impact on all the biological parameters studied in this experiment. The highest number of eggs i.e. 72 eggs were laid in untreated jar where as the number of eggs laid declined in treated jars. Among the treated jars the number declined to 65 eggs at LC_{20}, to 53 eggs at LC_{50} and 43 eggs at LC_{90} respectively. Similarly percent egg development declined from 92 % in the untreated jar to 81 % at LC_{20} to 63 % at LC_{50} and 40 % at LC_{90}. Percent adult emergence again displayed substantial decline from 92% in the untreated jar to 79 % at LC_{20} to 57% at LC_{50} and 27 % at LC_{90}. After emergence the adults usually live for two weeks but under the influence of pesticide, their life span showed significant decline. The adult females survived for 11 days in untreated jar while as their mean life span declined to 8 days at LC_{20} to 6 days at LC_{50} and 3 days at LC_{90} respectively.

Key words: *Callosobruchus chinensis*, cow-pea, Imidacloprid, oviposition, sublethal.

Submission:29.

STUDY OF LIGHT SPECTROSCOPY OF VARIOUS LIGHT SOURCES VIA SIMPLE LABORATORY SPECTROMETER.

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ABSTRACT:

The electromagnetic spectrum is comprised of a variety of types of electromagnetic waves, each with different wavelengths or frequencies. For example, x-rays, gamma rays, infrared radiation and ultraviolet radiation are examples of electromagnetic waves from approximately 10^{-18} m to 100 km, and this corresponds to frequencies decreasing from 3 × 10^{26} Hz to 3 ×10^{3} Hz. Only a small portion of the spectrum of wavelengths can be seen by the human eye which is visible spectrum which ha range of 0.4 to 0.7 µm . This visible portion of the electromagnetic spectrum is called the 'Visible Spectrum.' This shows the full spectrum of electromagnetic radiation and highlights the small part of the spectrum that can be called the visible spectrum. Different sources of Light now a days are available, can be studied with the help Simple Laboratory Spectrometer, reveals various Characteristics as well as contains various different nature of Spectra. This simple method is useful to make study of these various sources of light , which gives precise information near about their characteristics and contents in terms of wavelengths, frequencies and energies.

Submission:30

IMPROVEMENT OF SEED GERMINATION OF RARE AND THREATEN SPECIES OF *CEROPEGIA* AND ITS RESTORATION THROUGH DEVELOPED TUBERS.

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ABSTRACT:

The pharmaceutically important *Ceropegia lawii* Hook and *Ceropegia oculata* Hook var. *oculata* species are under threaten category due to several factors. Therefore, it is necessary to optimized efficient protocol for its multification and conservation. In present study attempt were made to optimized protocol for tuberization of the herbaceous, endanger, rare and endemic *Ceropegia lawii* Hook and *Ceropegia oculata* Hook *var*. *oculata* through in vivo culture by improved seed germination and seedling growth. The seed treated with germinator showed significant improvement in seed germination percentage of *Ceropegia lawii* Hook 94.7±0.35 and *Ceropegia oculata* Hook *var*. *oculata* 75.7±0.52 compared with seeds without germinator treatments (86.3±0.48 and 66±0.47 respectively). The germinated seedlings of *Ceropegia* species was successfully transferred in soil where it grows luxuriantly and showed well tuberization. After five months of plant growth the harvested tubers were successfully transferred in their natural habitat for its restoration. This developed protocol can be employed for productive conservation of *Ceropegia lawii* Hook and *Ceropegia oculata* Hook var. *oculata* on large-scale.

Key Words: *Ceropegia,* Seed germination, Improvement, Tuber, Restoration

Submission:31

Synthesis of Caffeine-free coffee from dates.

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ABSTRACT:

Caffeine is an addictive drug whose consumption must be limited. As we know some amount of caffeine is good for health in low concentration but it has many serious health risks such as high blood pressure, hyper tension among young adults, insomnia, indigestion, infertility, inhibition of collagen production in skin etc. when we consume in higher concentration. Therefore, we have found an alternative natural substance which resembles test and smell of coffee that has no health risk. Date palm seeds are use as our substituent for coffee in study. Date palm seed coffee powder is processed by washing, drying and roasting it for 10 minutes at 120 ^{o} C. Using solvent extraction method, it was revealed that it contains 0% caffeine.

Keywords- Caffeine, Harmful health risk, date seeds, solvent extraction method.

Submission:32.

Extraction of Natural Dyes from Selected Floral Waste and Dyeing of Fabric using Different Mordant.

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ABSTRACT:

In India, worshiping is the way of getting the blessing from deities in most religions. The people offer many things to deities, but flower offering is very common and in huge quantity. The everyday temple has produced waste like coconut shells, the bulk of flowers, leaves of plants, milk, etc. The floral waste is one of most share in this waste. Floral waste is directly dumped into rivers, oceans, etc. which affects the water ecosystem. Many textile industries use lots of synthetic dyes for the coloration of fabrics materials; therefore, it becomes a challenge for textile industries to protect the environment. The chemicals used in textile industries are harmful to the environment as well as human beings. Natural dye has no side effect on the skin and it has no harmful effect on the environment also. The use of floral waste for dye extraction will be reduced water and environmental pollution and is safe for the skin. The two different mordant were used to set isolate dye on cotton fabric by forming a coordination complex. The result revealed that, the 12 different shades of dye from floral waste. Red, Dark blue, light green, Pink, bluish, Yellowish orange, Orange, Grey, light brown, light yellow, greyish green, off white colour dyes were obtained from the different extracts of *Rosa indica* L., *Hibiscus rosa sinensis* L. and *Tagetes erecta* L. The extracts shows variation in colour and which is mainly depend upon the pigment and mordant (FeSO4, NaHCO3)

Key wards: Floral waste, Natural dye, Mordent, Cotton fabrics.

Submission:33.

ISOLATION, SCREENING AND IDENTIFICATION OF AMMONIA NITROGEN DEGRADING BACTERIA FROM WASTEWATER.

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ABSTRACT:

Ammonia is the most harmful ingredient in the foul odor, which cause stress response, lowered immunity and cause disease. (Mingcheng Wang et al, 2018.) To reduce ammonia nitrogen emission a strain of ammonia nitrogen degrading bacteria was isolated from wastewater and soil with the help of nitrification and de-nitrification medium or enriched medium.

The strains were firstly isolated, identify by physiological and biochemical characteristics, morphological observation. From this analysis only Two strains of bacteria W6, W7 were isolated. There identified by Indole, VP, MR , Citrate utilization, Carbohydrates utilization test etc.

Keywords: Applications, Isolation, Screening the isolate, Characterization.

Submission:34.

Antibacterial Evaluation of Salen-Metal Complexes

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ABSTRACT:

Two salen type Schiff bases were synthesized and characterized by using physical methods. Then their metal complexes were formed. The metals selected for the preparation of complexes were nickel, zinc, copper, cadmium, manganese and cobalt. Hence, in total 12 metal complexes were synthesized and screened for antibacterial activity against some clinically important bacteria, such as *Aspargillus niger*, *Pseudomonas aeruginosa*, *Proteus vulgaris*, *Staphylococcus aureus*, *Escherichia coli* and *Salmonella typhi*. The *in-vitro* antibacterial activity was determined by the agar cup technique using Dimethyl formamide as solvent. The Schiff bases showed considerably greater activity than their metal complexes; the metal complexes showed differential effects on the bacterial strains investigated and the solvent used, suggesting that the antibacterial activity is dependent on the molecular structure of the compound and the bacterial strain under consideration.

KEYWORDS: Salens, Schiff base complexes, antibacterial activity

Submission:35

DIVERSITY OF MARINE WATER CRABS OF HARNAI COAST

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ABSTRACT:

The present study of marine crabs was carried out on Harnai coast of Dapoli Tehsil. The Harnai village has muddy, rocky shore belt that covers about3.5kms. area. It is one of the major landing centres of Dapoli Tehsil. In this survey an attempt has been made to know the fishery potential in respect to different crab species that occur in this region. The crab meat is highly demanded because, it is an excellent source of protein. To generate data about marine water crabs frequent visits were undertaken during May 2018 - July 2019. The marine crabs detected at different locations of Harnai coast were possiblly collected and photographed during low tide. However, information about marine crab also procured from the local fishermen who regularly doing fishing of such crabs. A total of 08 species belonging to 2 families and 5 genera were recorded. It is concluded that *Portunus* and *Scylla* genera are dominant along the Harnai coast. It is also noted that the harvested crabs mainly marketed in to local markets only. But there is large potential for crab fishery.

Keywords: Diversity, Marine, Crabs, Harnai Coast.

Submission:36.

SYNTHESIS OF SCHIFF BASE AND STUDIES OF THEIR ANALYTICALPROPERTIES WITH RESPECT TO ITS COMPLEXING ABILITY WITH NICKEL (II) ION.

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ABSTRACT:

Schiff Base was synthesized by reported microwave assisted green protocol and it is used to study its analytical properties with respect to its complexing ability with Nickel (II). The Schiff Base synthesized was N, N-bis[(E)-(3-nitrophenyl) methylidene] benzene-1,2-diamine, and the analytical properties with respect to its complexing ability was studied with reference to pH, concentration, and effect of equilibrium time. An extractive spectrometric method is used to study the complexing ability with Nickel (II). It is found that synthesized Schiff Base can extract Ni (II) at low pH, with low concentration of reagent and at less equilibrium time.

Keywords: Schiff Base, Nickel, Extractive Spectrometric Method

Submission:37.

Studies of Seasonal Variations in the Physico-Chemical Parameters and to Validate Potability of Well Water from Brahmanwadi Tal Dapoli (M.S.)

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ABSTRACT:

The present work is carried out with an aim to 'studies of seasonal variations in the Physico-chemical parameters and to validate potability of well water from Brahmanwadi Tal Dapoli Dist: Ratnagiri (M.S.) In the present study of well water samples are collected from five different locations of Brahmanwadi which is residential area of Dapoli tahsil and is also busy with several agriculture activities. Seasonal variations in Physico Chemical parameters during monsoon, post monsoon and during winter season are studied with special reference to fluoride content in well water. The variations are found to be marginal and not significant. All the values of the five water samples are found to be within permissible limits and the potability well water of these five locations are validated.

Key Words: Physico Chemical Parameters, Potability, Fluoride

Submission:38.

Synthesis of Schiff Base and studies of their analytical properties with respect to its complexing ability with Nickel (II) ion.

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ABSTRACT:

Schiff Base was synthesized by reported microwave assisted green protocol and it is used to study its analytical properties with respect to its complexing ability with Cobalt (II). The Schiff Base synthesized was N, N'-bis[(E)-(4-methoxyphenyl) methylidene] benzene-1,2-diamine and the analytical properties with respect to its complexing ability was studied with reference to pH, concentration, and effect of equilibrium time. An extractive spectrometric method is used to study the complexing ability with Cobalt (II). It is found that synthesized Schiff Base can extract Cobalt (II) at low pH, with low concentration of reagent and at less equilibrium time.

Keywords: Schiff Base, Cobalt, Extractive Spectrometric Method

Submission:39.

A STUDY OF EFFECT OF GREEN TEA ON ORAL BACTERIA

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ABSTRACT:

Green tea is that the most soughtful beverage of both the young and old age groups. Thanks to its numerous health uses. Numerous studies have proved the antioxidant properties of tea. Present study investigates its role in reducing the count of streptococcus mutans within the mouth and its effect on the salivary pH. The aim of this research work is to gauge the salivary pH and streptococcus mutans count in healthy individuals before and after rinsing the mouth with green tea. From this experiment we observed increase in salivary pH and reduce in streptococcus mutans count after rinsing the mouth with green tea solution. This study concludes that green tea might be advisable as a healthy drink and may include it in mouthwashes, toothpaste and chewing gums.

Key-words: Green tea, streptococcus mutans, salivary pH, antioxidant properties.

Submission:40.

ESTIMATION OF ORGANIC AND INORGANIC CONSTITUENTS OF SOME MEMBERS OF FAMILY EUPHORBIACEAE FROM DAPOLI TAHASIL.

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ABSTRACT:

It is a very important to encourage researcher and clinicians to work hard in order to clarify the main active ingredients which can be extracted from medical plants. *Ricinus communis* L., *Bridelia retusa* Spreng., *Euphorbia hirta* L., *Bridella stipularis* Blume, *Codiaeum variegatum* L. etc was selected for estimation for some organic and inorganic constituents.

Euphorbia hirta L. has the highest chlorophyll a, chlorophyll b and carotenoids content and *Ricinus communis* L.having lowest chlorophyll a, chlorophyll b and carotenoids as compared to other selected plants.

The stem of *Euphorbia hirta* L. showed that highest Manganese contents and lowest amount was found in *Bridelia retusa* Spreng.

The leaves of *Euphorbia hirta* L.shows the highest contents of Manganese. while *Codiaeum variegatum* L. observed that there is zero amount of manganese. Amongst all, only *Codiaeum variegatum* L. shows zinc in its leaves. In this way different concentration of organic and inorganic constituents are estimated in different selected genera.

Keywords: Organic and inorganic, *Ricinus communis* L., *Bridelia retusa* Spreng., *Euphorbia hirta* L., *Bridella stipularis* Blume, *Codiaeum variegatum* L. etc.

Submission:41.

STUDIES ON ANTIMICROBIAL ACTIVITY OF *STRYCHNOS NUX-VOMICA* (L.)

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ABSTRACT:

In the present paper was carried out to check the antimicrobial activity of seed extract of *Strychnos nux-vomica* (L.) The antimicrobial assay using agar cup method was done. The *Strychnos nux-vomica* against two selected pathogenic bacteria i.e. *Escherichia coli* and *Staphylococci aureus*. The seeds of *nux vomica* was collected from Sacred grooves and dried for powder making. Crude extract was prepared with the help of methanol and D.W. The crude methanolic extract showed inhibitory action against *S. aureus* 6538P. and there was no inhibition found in the growth of *E. coli*.

The extracted component alkaloid showed the inhibitory action against both the test organisms that is *E.coli* and *S.aureus* 6538P indicating that the antimicrobial activity of *nux-vomica* seeds is due to the presence of alkaloids. In this way, traditional herbal medicines must perforce grant the benefits of modern science and technology to serve further global needs. The drugs derived from herbs may have the possibility of their use in medicine because of their good antibacterial activity.

Key words : *Strychnos nux-vomica* (L.), *Escherichia coli, S.aureus* 6538P

Submission: 42.

COMPARATIVE STUDY OF LIPASE PRODUCTION BY SURFACE FERMENTATION AND SSF OF *ASPERGILLUS NIGER.*

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ABSTRACT:

Due to the numerous applications of lipases in industry, there is a need to study their characteristics, because lipases obtained from different sources may present different properties. This work aimed to accomplish the partial characterization of lipases obtained through surface fermentation and solid-state fermentation by species of *Aspergillus.* Fungal strains were isolated from diesel-contaminated soil and selected as good lipases producers. Lipases obtained through surface fermentation presented optimal activities at 37°C and pH 7.5 and those obtained through solid-state fermentation at 30 and pH 7. The enzymes produced by surface fermentation were more temperature-stable than those obtained by solid-state fermentation, presenting 72% of residual activity after one hour of exposition at 90°C. Lipases obtained through surface fermentation had 80% of stability in acidic pH and those obtained through solid-state fermentation had stability greater than 60% in alkaline pH.

Keywords: Solid-state fermentation, surface fermentation, lipase, *Aspergillus.*

Submission: 43.

STUDIES OF THE PHYSICO-CHEMICAL PARAMETERS AND SEASONAL CHANGES IN THE WATER SAMPLES FROM DIFFERENT WATER RESERVOIRS FROM VILLAGE MENDHOSHI, TAL PATAN, DIST SATARA (M.S.)

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ABSTRACT:

The present work is carried out with an aim to 'studies of the physico-chemical parameters and seasonal changes in the water samples collected from different water reservoirs from Village Mendhoshi, Tal Patan, Dist Satara (M.S.). In the present study, water samples are collected from five different locations of Mendhoshi which is residential village of Patan tehsil and is also busy with several agriculture activities. Seasonal Changes in physico chemical parameters during monsoon, post monsoon and during winter season in various water reservoirs of the village are studied. The variations are found to be marginal and not significant.

Key words: Physico Chemical Parameters, Water Reservoir, Seasonal Changes

Submission: 44.

TO STUDY THE CONCEPT OF ANTIBUBBLE AND ITS EXISTENCE

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ABSTRACT:

Some people may think that antibubbles have no practical significance that they are just a childish waste of time. I suppose those people have more important things to worry about. I Know antibubbles are important. If nothing else, they prove that even the simplest things may surprise us. I like things that surprise me.

An antibubbles is similar to a bubble, but the roles of the water and the air reversed. This experiment shows you the characteristics of an antibubbles. Antibubbles formation has been well studied in soapy water Systems. These structures can affect mixing of liquids when poured. In my experiment I tried to study the existence time of an antibubble and some properties such as its shape and size.

Keywords: Antibubble, existence of antibubble, Properties of antibubble

Submission: 45.

ANTIMICROBIAL ACTIVITY OF *BRYOPHYLLUM PINNATUM* LEAF EXTRACT AGAINST *E. COLI* AND *S. AUREUS*

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ABSTRACT:

This study focuses on antimicrobial activity of *Bryophyllum pinnatum* leaf extract against gram positive and gram-negative bacteria, *Bryophyllum pinnatum* is also known as miracle leaf and it is popular house plant, best known for its medicinal uses In traditional system, it has antimicrobial activity and has been used to treat many diseases as it is consider as edible plant**.** (Odunayo R. Akinulire, Ibukun E. Aibinu, et al. 2007)**.** The antimicrobial activity of *Bryophyllum pinnatum* leaf extract (pure extract) detected against selected gram positive & negative bacteria i.e. *S.aureus* & E.coli by using agar well diffusion method which showed great inhibitory effect against both the selected organisms & further compared it's activity by preparing silver nanoparticles from *Bryophyllum pinnatum* leaf extract.

Keywords: *Bryophyllum pinnatum*, extraction, antimicrobial activity, nanoparticles, biofilm

Submission:46.

DIVERSITY AND BIOTECHNOLOGICAL POTENTIALS OF GENUS *ASPERGILLUS* ISOLATED FROM RHIZOSPHERE SOIL OF OKARA.

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ABSTRACT:

Aspergillus is one of the most dominant genus of fungi commonly isolated from various habitats including water and air as well as from the terrestrial environments, however, only a few species have been studied in rhizosphere soil. In this study diversity of Aspergillus investigated from rhizosphere soil of Okara plant, focusing on exploration of their biotechnological potentials. A total of 15 isolates were isolated from three different localities, based on morphological characteristics seven species of *Aspergillus* has been identified. All isolates were screened for their biotechnological potentials qualitatively. Out of fifteen isolates eight isolates exhibited phosphate solubilising ability, five isolates showed cellulase activity, three were exhibited amylase activity and one isolate showed tannase activity. Based on primary screening, the isolates which showed promising activity were undertaken for quantitative analysis of above activity. The *A. niger* showed the ability to produce all screened extracellular enzymes and phosphate solubilising potential while *Aspergillus japonicas* only exhibited phosphate solubilising ability. The *Aspergillus nidulans*, *Aspergillus wentii*, *Aspergillus aculeatus* and *Aspergillus terreus* showed enzyme cellulase activity. Enzyme amylase produced by *Aspergillus flavus* and *Aspergillus nidulans* while enzyme tannase secreted by only *Aspergillus niger*. This study contributes to catalogue genus *Aspergillus* from rhizosphere soil, and also provides additional information to support future research about the industrial potential of these isolates that may produce enzymes of industrial interest.

Key words: Rhizospher fungi, Phosphate solubilizers, Extracellular enzymes.

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Submission:47.

METAL CONTENT IN SELECTED TISSUES AND SHELL OF *PERNA VIRIDIS* (L) FROM COAST OF RATNAGIRI TEHSIL

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ABSTRACT:

Mussels are good bio accumulators of metals and have been used as indicators for environmental monitoring. In this study on *Perna viridis* (L) from coast of Ratnagiri tehsil. Metal content (Aluminium, Lead, Cadmium, Copper and Zinc) were analysed in selected tissues and shell nacre. The metal content shows that digestive gland accumulates higher concentration of metal ions followed by gill, mantle and shell of different component (digestive gland, gill, mantle and shell nacre) of the organism. Only shell nacre exhibited significant relationship with ambient level and therefore can be applied to temporal monitoring of metal contamination.

Key words: Mussels, Trace Metals, Soft hard tissues, Monitoring

Submission:48

EFFICIENT SYNTHESIS OF BENZOPYRONE DERIVATIVES USING GREEN PROTOCOL.

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ABSTRACT:

Intermediate 5-Hydroxy-8H-1-oxa-8–aza-anthracene-2,7-dione was prepared by environmentally benign microwave assisted method from easily available cheap raw material 4-methyl amino coumarin and malonic acid with catalytic amount of phosphorus oxychloride. From this same intermediate 4,11-dimethyl -6H-1,8-dioxa -6–aza-benzo [a] anthracene-2,5,9-trione was synthesized by using ethyl acito acetate and 11-methyl-6H-8,13-dioxa-6-aza-pyrano benzo [b] anthracene-5,9,14-trione pyrazine was synthesized by using methyl salicylate and catalytic amount of pyridine. Environmentally benign microwave assisted method provides high yield product with quality nature which is convenient to isolation.

Key Words: Microwave, Malonic acid, Pyrazine.

Submission: 49.

MICROPLASTIC POLLUTION: A MAJOR THREAT TO AQUATIC ECOSYSTEM: A SHORT REVIEW

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ABSTRACT:

Microplastic (MP) is produced from plastic and have a lethal effect on aquatic as well as on human health, due to its highly fragmented forms. It can be derived from various sources and have diverse forms, for example, fibers, fragments and foams etc. The MP can be detected by different methods such as microscopy and spectroscopic methods (Raman, FTIR and NMR). As these highly toxic molecules are consumed by a large number of aquatic biota, it is essential to study their possible effects on aquatic as well as on human life. Hence, we thoroughly reviewed the literature for the sources and dispersion of MP pollution in freshwater (including wastewater treatment plants) as well as in marine ecosystems. In this context, such type of study is essential to develop a scientific approach towards the issue by promoting recycling processes (3R Process) and creating awareness in the society by different means; feature formation of the legal framework will help to resolve the issue of MP at some extend.

Keywords: Microplastic, Pollution, Aquatic, Ecosystem, Review.

Submission: 50.

STUDIES OF PHYSIOCHEMICAL PARAMETER OF SOIL SAMPLE FROM RATANAGIRIAND RAIGAD REGION.

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ABSTRACT:

The present work is carried out with an aim to "Studies of physiochemical parameter of soil from different location in Ratnagiri and Raigad District". In the present study of soil sample are collected from five different location Ratnagiri and Raigad Districts.

Attempt has been made to examine the soil temporal variability of micronutrient viz. copper, zinc, Manganese etc. All chemical used AR grade, cu, zn, mg are determined by using Atomic Absorption Spectrophotometer. And other element like Organic carbon, phosphorous determine by Visible Spectrophotometer. From the results, it observed that the concentration of some micronutrient is found too high.

Keywords: Soil sample, Parameter, Fertility, Quality,

Submission:51.

LEAF ARCHITECTURE AND ANATOMICAL STUDY OF ARISAEMA NEGLECTUM SCHOTT.

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ABSTRACT:

The Arisaema neglectum is an endemic plant to Konkan region and also observed in areas around Kalavantin pinnacle. For leaf architecture the chlorophyll pigments from leaves were removed and stained afterwards with alcoholic safranin. The microscopic studies of venation were recorded with the help of stereo zoom microscope. The leaves of A. neglectum shows comptodromous with festooned brochidodromous venation. Stomata are paracytic while the anatomical studies shows the presence of prismatic and spherical calcium oxalate crystals along with raphides and rosettes in corm, stem and petiole. Key words: Leaf architecture, comptodromous, brochidodromous, paracytic stomata, anatomy, calcium oxalate crystals, xylem lacunae, hard basts.

Submission: 52.

STUDIES OF THE PHYSICO-CHEMICAL PROPERTIES IN THE WATER SAMPLES FROM DIFFERENT WATER SOURCES OF VILLAGE GIMHAVANE TAL DAPOLI DIST RATNAGIRI (M.S.)

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ABSTRACT:

The present study is carried out with an aim to 'check the physico-chemical properties of the water samples collected from different water sources of Village Gimhavane Tal Dapoli Dist Ratnagiri (M.S.). Gimhavane is residential village of Dapoli tehsil and is also busy with several agriculture and horticulture activities. In the present study, water samples are collected from five different locations of Gimhavane. Physico chemical properties of water samples are examined by standard methods. All the studied physico chemical properties of five water samples from five different water sources of Gimhavane village are found to be under permissible limit as per IS10500 and hence water samples from all these water sources are potable.

Key words: - Physico Chemical Properties, Water Sources, IS10500.

Submission:53.

DIVERSITY OF BIRDS, FROGS AND SNAKES ON SHIVAJI UNIVERSITY KOLHAPUR CAMPUS, MAHARASHTRA INDIA.

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ABSTRACT:

The campus of Shivaji University, Kolhapur, Maharashtra, India is about 850 acres and it is rich in biodiversity. Between April 2019 and March 2020, a total of 115 species of birds belonging to 55 families, 11 species of frogs and 7 species of snakes have been recorded in this area. One thing that is clear from this study is that the area is a safer place for animals as a total of 9 species of raptors have been found in the area which are at the upper tropical level of the food chain. More species will grow in the area in the future as they are provided with abundant security and food.

Key words: Shivaji University, diversity, birds, frogs, snakes.

Submission:54.

DIVERSITY OF BIRDS IN SAWANTWADI CITY AREA

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ABSTRACT:

The present report puts forth a systematic checklist of bird species observed at Sawantwadi city area in Sindhudurg district of Maharashtra from 2017 to 2020 along with the information on their status. A total number of 167 bird species were recorded which is 30.36 % of total birds of Maharashtra . A family-wise analysis show that the family Muscicapidae with 11 species and Ardeidae with 10 species followed by Nectarniidae and Alcedinidae (7 each) and Pycnonotidae , Dicrunidae, Columbidae, Picidae (6 each) are dominated the avifauna of the region . The study also revealed that the area consisted of 5 species of the bird that are classified under near threatened category and two under vulnerable category of IUCN. This study highlights the urgent need to conserve Narendra hill and Mahadev Bhatale the biodiversity rich area of Sawantwadi city with long term plans.

Keywords: Diversity, Vulnerable, Near Threatened

Submission: 55

PROTEIN CONTENT OF FRESHWATER CRABS (DECAPODA: BRACHYURA) FROM DAPOLI TEHSIL, DISTRICT-RATNAGIRI, MAHARASHTRA (INDIA)

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ABSTRACT:

Among the decapod crustacean crabs are an interesting group due to it's nutritional richness and delicacy. However, scanty information about ecology and biochemical aspects of these crustaceans is available. The present study aims to describe the Protein content of freshwater crab ***Barytelphusa cunicularis*** **(Westwood, 1836)** which very common in Dapoli tehsil. This freshwater brachyuran decapod is the representative of family, **Gecarcinucidae.** Samples were collected during the monsoon season in the months of September 2018. The protein estimation is carried out by Lowry et.al method. This crab showed high Protein value in their tissue 0.080 mg. to meet the protein requirement of the man in affordable rate.

Keywords: Freshwater, crab, Protein.

Submission: 56.

AN EARTH FRIENDY HERBAL PESTICIDE FROM MILLETTIA PINNATTA

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ABSTRACT:

Today use of hazardous chemical pesticides is a major environmental problem in global agriculture. The large-scale use of these pesticides is degrading soil quality, underground and surface water quality, food quality of products. Herbal pesticides are a potential option for their chemical counterparts. It was observed that the crop fields where *Milletia pinnata* trees are planted, there is less or no infestation of various insect-pests round the year. The trees of *Millettia pinnata* are found all over India and the use of *Millettia* as pesticide is cost effective, environment friendly and is in the reach of common villagers and farmers of India. Bio-pesticides are developed from naturally occur-ring living organisms such as animals, plants, and microorganisms (e.g., bacteria, fungi, and viruses) that can control serious plant- damaging insect pests by their nontoxic eco- friendly mode of actions, therefore reaching importance all over the world. Bio-pesticides and their by-products are mainly utilized for the management of pests injurious to plants. Considering the cost, health and environment hazards of synthetic pesticides, there is a need to find and develop practical, safe and effective alternatives.

Keywords: Herbal, Pesticide, Millettia Pinnatta

Submission: 57.

ANALYSIS OF POLYCYCLIC AROMATIC HYDROCARBON IN AMBIENT AIR

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[2]ENVIRONMENTAL ASSESSMENT DIVISION,

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ABSTRACT

Polycyclic aromatic hydrocarbons (PAHs) are a group of organic compounds composed of two or more fused aromatic rings of carbon and hydrogen atoms. These pollutants are generally formed by incomplete combustion of organic materials, as well as through natural and other anthropogenic activities. In the atmosphere, they may adsorb and condense on the surface of aerosols (particulate phase) or exist in gaseous phase. The present study includes measurement of PAH concentrations at Trombay. In this study the concentration of PAHs in atmospheric air arises because of their derivatives are found to be carcinogenic and mutagenic.

A method was developed to allow routine quantitative analysis of polycyclic aromatic hydrocarbons (PAHs) in dust particulates at BARC, Trombay with 24 hours sampling. High volume sampler was used for the collection of respirable suspended particulate matter samples. Ultra sonic method of extraction was followed to extract the PAH compounds. Compare to soxhlet extraction method ultra sonic method of extraction is very advantageous due to high extraction efficiency. Separation and characterization of polycyclic aromatic hydrocarbons in air was performed using isocratic HPLC system.

Sixteen different PAH compounds were analyzed. There was a gradual reduction in PAH concentration observed in the particulate matter as the winter months of January and February came to an end. The concentrations distribution of each PAH compound is different. M This method for estimation of polycyclic aromatic hydrocarbon (PAHs) in aerosol samples using high pressure liquid chromatography (HPLC) with UV detection is described. The analytical method allows the quantification of PAHs present in aerosols at ultra-trace level.

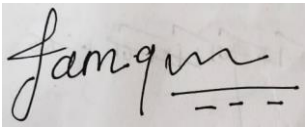
ACKNOWLEGEMENTS

Dr. Bapu Yamgar
Organizing Secretory,
NCRLEE-21
Dapoli Urban Bank Senior Science College

It gives me great pleasure Dapoli education society's, Dapoli Urban Bank Senior Science College, Dapoli has organize Online Two days National Conference on Recent trends in Life science, Energy and Environment(NCRLEE 2021) on 24, 25 th september 2021.The conference is organized to know the recent trends in the field of life science, energy and environment. The response received from various organization is good and more than 100 delegates are participated.

On behalf of organizing committee, I would like to thank to Dapoli education society for their constant encouragement during the organization of conference. I express my thanks to our principal Dr Sandesh P. Jagdale, for giving the inspiration for organization of national conference. I also thankful to members of organizing committee as well as all faculty members of the college for their constant support and co-operation. I also thank all resource persons, chairpersons, participated delegates for your valuable response given for conference.

Thank you.



Dr. Bapu Yamgar
Organizing Secretory,