
Proceedings of National Conference on “*Conservation of Biodiversity in India, Some Issues*” (NCCBI 2012)” Held at Arts and Commerce girls College, Devendra Nagar, Raipur, 492001, (C.G) India, 16th and 17th, October 2012

Some rare and uncommon fungi isolates from environment of Chhattisgarh

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Abstract:

Fungal biodiversity is vast in environment. Some fungi, many time repeated in a particular area and season but few of them obtain very rare and uncommon in environment. The fungi of the present investigation were isolated from waste site of some coal based iron industries of Raipur city. The fungi living in industrial source have great potency to tolerate pollutants, such as heavy metal and xenobiotic compounds. The fungi were pure cultured and their morphological study was done. Microscopic study was done using Labomed image device with software application. The rare fungi of present work include *Isaria* sp., *Beltraiella* sp., *Choaneophora cucurbitarum*, *Phoma chrysenthemicola* and *Curvularia verruculosa*. Some of these fungi are first time reported in industrial effluent of Chhattisgarh so that physiological, biochemical and study for removal of pollutant from environment will carry out.

Key words : Environment, Chhattisgarh, Fungal Biodiversity, Raipur city.

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Developing a sustainable method for harvest of gum from *Boswellia serrata* and *Sterculia urens* Roxb.

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Abstract:

Gums and resins are important non-timber forest products having a lot of application in fabric, pharmaceutical and paint industries. These gum yielding plants are frequently found in the tropical dry deciduous forest patches of Odisha. *Boswellia serrata* and *Sterculia urens* are two such important gum yielding plants. The gum of both the plants have a lot of economic importance in Paper, Petroleum, Cosmetics, Ayurvedic pharmaceutical industries. But no standardized methods for sustainable harvest of gums from these two plants are available. Very few people engaged in the business of gum collecting mercilessly exploit the plant for their gum extraction resulting in the death of the plant. In the present paper attempt has been made to develop a standardized technique for sustainable harvest of gums from these two plants. The study revealed that a wound made up to a depth of $\frac{1}{2}$ the thickness of the bark of size 20 X 30 cm as recommended by Shiva (2008) is the most appropriate for extraction of gum. The gum can be extracted throughout the year but April-May is the most ideal period of the year when the gum yield is at its maximum. Apart from this it was observed that gum production starts in *Boswellia serrata* when it attains a girth size of 38 cm. and that of *Sterculia urens* at a girth size is 41cm. The gum producing ability gets stabilized when the plants of *Boswellia serrata* attains a girth of 86cm. and *Sterculia urens* a girth of 119cm. The girth size and gum producing capacity is positively correlated in a girth class range of 38 to 86 cm. in case of *Boswellia serrata* and 41 to 119 cm. in case of *S. urens*.

Keywords: sustainable method, *Boswellia serrata*, Gums and resins

Diversity of fish fauna

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Abstract:

From pre-historic period fishes have been used as very good source of food because its flesh is rich in protein. In fish oil certain nutrients like decosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) are found. It has been documented that both DHA & EPA should be taken in about 200mg/day in diet it improves learning abilities, eyesight, and circulation of blood and reduces rheumatoid arthritis pain. In fatty fishes Omega-3 fatty acid is found which protecting the heart & significantly lower blood pressure in people suffering from hypertension & suppress cancer formation and also lower rates of type 2 diabetes. As protein rich food, fish species are great commercial value. In this concern the fishes are chosen as an economically important aquatic faunal diversity. Fishes have been also used as indicator for balanced ecosystem because they are excellent indicator for water pollution and of watershed health because their life solely depends upon water and they exhibit differ in their tolerance to amount and types of pollution. Fishes also play an important role in food chain of aquatic system as a second trophic level. It is necessary to know the base line data for the evaluation of fish faunal diversity. Hence a study was conducted to document the fish fauna of River Mahandi, Dhamtari district. Results reveal that Cypriniformes was a dominating group.

Key words: Cypriniformes, water pollution, diversity, fish fauna, Mahanadi River and fish species.

Antioxidants, lipid peroxidation and reactive oxygen species in ageing chickpea seeds

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Abstract:

Changes occurring in seed during ageing are very significant for seed quality/longevity. The pace at which the deterioration takes place depends on the ability of seed to resist deteriorative changes and protection mechanisms, specific for each plant species. The chickpea (*Cicer arietinum*) seeds were subjected to accelerated ageing (40°C, 100% RH) for varied timings. The content of reactive oxygen species (ROS), malondialdehyde (MDA) and protein were studied along with activities of superoxide dismutase, catalase and ascorbate peroxidase, in relation to seed germination. To explore the status of cell membranes of ageing seeds, electrolytes leakage was estimated. Data reflected remarkable decline in the seed viability with ageing hours. Progressive leakage of electrolytes confirms perturb cell membranes of ageing seeds. Both ROS and MDA exhibited significant increments, other way depletion in antioxidants was reported during ageing. The findings underscored the importance of controlled ROS homeostasis in counteracting ageing imposed oxidative stress situation.

Keywords: antioxidant enzymes; chickpea; electrolyte leakage; malondialdehyde; ROS; seed ageing

Ethno-medicinal diversity of Bilaspur district traditionally used by rural people

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Abstract:

Plants are an integral part of nature reflects the creativity of God. The plants are designed with a specific purpose and they are life sustaining force on the earth. The present study was carried out in the Bilaspur district of Chhattisgarh to document the ethno-medicinal use of diversified plants. The information was based on general description, interviews and detailed personal discussions with local herbal practitioners, elderly men and women of different tribal communities. The medicinally important plants were botanically identified and characterised. In this study a total of 61 plant species of 51 genera belong to 32 families were reported with ethno- medicinal values. Generally fresh part, mostly leaves are used to prepare medicine. The plant parts, viz. leaf, bark, seed, root, tuber, fruit and whole plant were used in raw or cooked forms for the treatment of piles, asthma, skin disease, fever, rheumatism etc. Attention should be made on proper exploration and utilisation of these medicinally important plants.

Key words: Ethno-medicinal, Bilaspur district; Chhattisgarh, Traditional uses, Skin disease.

E-waste utilization and environmental protection

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Abstract:

Rapid economic growth in Asia and the increasing transboundary movement of secondary resources will increasingly require both 3R endeavors (reduce, reuse, recycle) in each country and appropriate control of international material cycles. Recently, managing electrical and electronic waste (E-waste) has become an important target for domestic and international material cycles from the viewpoints of environmental preservation and resource utilization efficiency. To understand the current status of E-waste issues in the context of international material cycles and to discuss the future tasks related to achieving 3R in the region, we organized the National Institute for Environmental Studies (NIES) E-waste Workshop in December 2004. This article reviews past studies on E-waste and briefly describes the topics presented and discussions held at the workshop. The topics at the workshop included E-waste generation, recycling systems, international trade, and environmental impacts. In addition, we discussed various issues such as terminology, current environmental concerns, and possible solutions. Transboundary shipments of E-waste should be conducted taking into consideration the concept of sustainable development. The direction of future research and possible collaborations are also discussed.

Key words: E-waste - Asia - Recycling systems - Material cycles - Environmental preservation

Effect of global warming on environmental sustainability

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Abstract:

Since the 1850s the effects of global warming have been anticipated by the rise of temperature in many big cities. In addition, vegetation changes in central European cities have been well documented. This paper explores the changing urban distribution of some ruderal herbaceous species and discusses changes in distribution and physiological changes in tree and shrub species in response to this rise in temperature. Examples of affected species covered here include *Acer negundo*, *Ailanthus altissima*, *Amelanchier spicata*, *Berberis julianae*, *Buddleia davidii*, *Colutea arborescens*, *Cornus alba*, *C. stolonifera*, *Cotoneaster bullatus*, *Cytisus multiflorus*, *C. striatus*, *Juglans regia*, *Laburnum anagyroides*, *Ligustrum vulgare*, *Mahonia aquifolium*, *Paulownia tomentosa*, *Philadelphus coronarius*, *Platanus hispanica*, *Populus canadensis*, *Prunus armeniaca*, *P. laurocerasus*, *P. mahaleb*, *P. persica*, *P. serotina*, *Pyrus communis*, *Quercus cerris*, *Q. rubra*, *Q. robur*, *Ribes aureum*, *Robinia pseudacacia*, *Sambucus spp.*, *Sorbus intermedia* agg., *Symphoricarpos albus*, and *Syringa vulgaris*. The responses of some woody scramblers and creepers are also examined. For many of these species, there was a long lag time between introduction and invasion in the wild. We briefly review phenological investigations, including studies of *Aesculus hippocastanum* and *Tilia euchlora*. Finally, we consider the extent to which cities can act as simulators of global climate change. We conclude that although other ecological and socioeconomic factors are affecting the vegetation in urban areas, many of the nonnative invasive species found colonizing cities (or naturalizing within them)

Keywords: Environmental Sustainability , Effects of global Warming , Ecologic and Socioeconomic Factor.

Making predictions of weed competition in rice fields of Bilaspur (Chhattisgarh)

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Abstract:

Shifts in the species composition of any weed/crop community are likely to occur due to the long term changes in cultural practices or the seasonal and annual fluctuations in environmental conditions. Thus the necessity to predict the occurrence and competitive success of weed species under the constraints of a productive but constantly changing environment is evident.

Three key factors must be considered for predicting competitive relationships in weed/crop communities. These are spatial arrangement, timing of germination and growth rate of plants.

The success of a crop species in relation to its competitors i.e. weeds should be predictable as a function of growth and germination of both species. Once basic relationships between germination growth and competition have been determined for specific weed/ crop combinations, further experiments can be initiated to link management practices more closely with community structure. Present paper deals with some models in this direction so that management options may be predicted.

Keywords: rice fields, Bilaspur, weed/crop

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Long term follow – up of CML cases with gleevec induction: a hematological and cytogenetic based report

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Abstract:

Chronic Myeloid leukemia (CML) is a blood cancer of myeloid progenitors initiated with a triphasic absolutely curable with a targeted genedrug Imatinib mesylate. This study was conducted to reveal the effectiveness of Imatinib mesylate in 40 CML patients subjected with a follow – up of 12 months to evaluate their remission of the disease status. Complete hematological and Cytogenetic analysis was performed to find out the response of Imatinib mesylate against CML in every follow – up. Majority of the CML patients had showed a positive response in decreased level of abnormal cell proliferation and loss of Philadelphia positive chromosome (Ph+ve) in their profile. Our Research evidenced a potential activity of Imatinib mesylate as a targeted gene therapy drug against CML.

Key words: Chronic Myeloid Leukemia, Imatinib Induction, Long term follow – up studies

Effects of two common traditional plants: a follow up study as trial

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Abstract:

Traditional Plants like Garlic and Ginger are the well known name in the field of research. The value of Garlic and Ginger as crop has been recognized from very ancient times and estimated that cultivated for over 5000 years. During all this time it has been used as food, condiment and medicine by many civilizations in Asia and the Mediterranean region. Many Scientists are working from the ancient age to till now. And at the end of this era, many findings already came and since everybody are working in the different field of biological science. Preliminary research indicates that nine compounds found in ginger may bind to human serotonin receptors which may influence gastrointestinal function. Thus it could possibly prevent or decrease the damage in the human body caused by free radicals. Daily consumption of ginger was shown to help ease muscle pain associated with exercise by 30%, suggesting a new cost-effective treatment to pain associated with recent exercise. In limited studies, both plants were found to be more effective than placebo for treating nausea caused by seasickness and morning sickness although ginger was not found superior to placebo for pre-emptively treating post-operative nausea. Other preliminary studies showed that ginger may affect arthritis pain or have blood thinning and cholesterol lowering properties, but these effects remain unconfirmed. Zingerone may have activity against enterotoxigenic *Escherichia coli* in enterotoxin-induced diarrhea.

Keywords: Traditional Plants, Active Compounds, Routine Consumption, Analysis, *Escherichia coli*