
Proceedings of National Conference on “*Conservation of Biodiversity in India, Some Issues*” (NCCBI 2012)” Held at
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Diversity and seasonal variation of aquatic fungi from bilaspur region of Chhattisgarh.

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Abstract:

Biodiversity and seasonal fluctuation in aquatic fungi at different depths in pond water of Bilaspur city was studied. During present course of investigation eighteen different water bodies (Ponds / Ditches) were selected in Bilaspur region of Chhattisgarh. From each study site samples were collected and through plating method fungal species were isolated, then analyzed microscopically. Samples were collected monthly to determine seasonal variation of these fungi in different water bodies. The fungal diversity showed resemblance with marked vertical variations. Surface water samples yielded the highest number of aquatic fungi (13 species), while water samples collected from near the bottom (15-20 m deep) were low (3-4 species). This reduction in fungal diversity, correlated markedly with the reduction in the amount of organic matter. The most common genera were *Achlya*, *Aqualinderella*, *Pythium* and *Saprolegnia* (moderate occurrences), whereas *Allomyces*, *Aphanomyces*, *Dictyuchus* and *Pythiopsis* were of rare occurrence and irregularly distributed in vertical state.

Key words: Aquatic fungi, seasonal variation, vertical state, organic matter.

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Studies of aeromycoflora in an outdoor environment of Dr. Bhim rao Ambedkar hospital, Raipur

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Abstract:

In this study, an aeromycological survey on the outdoor environments of Dr. Bhim Rao Ambedkar Hospital, Raipur was carried out for a period of one year from June 2005 to July 2006 by using petriplates method from five outdoor sampling sites. A total of 101 fungal species belonging to 38 genera were identified, of which 2.39% of the fungal colonies belonging to Zygomycotina, 1.56% to Ascomycotina, 91.82% to Anamorphic fungi and 4.21% to Mycelia sterilia. Maximum percentage contribution were recorded that *Cladosporium cladosporioides* (17.91%) followed by *Aspergillus versicolor* (11.56%), *Alternaria alternata* (7.51%), *Aspergillus niger* (5.61%), *Alternaria citri* and *Nigrospora oryzae* (4.04%), *Curvularia lunata* (3.46%) and *C. pallescens* (2.55%). Variation in the fungal species in different seasons and months was also observed. Maximum 79 fungal species were observed in winter season, moderate 66 fungal species in rainy season and minimum 44 fungal species in summer season. Maximum (49) fungal species in air were found in the month of December, while minimum (20) fungal species in the month of April and May.

Key words: Aeromycoflora, outdoor, environment, hospital

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Establishment of *in vitro* micropropagation protocol for an endangered medicinal plant: *Curcuma caesia* Roxb.

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Abstract:

Curcuma caesia Roxb. (Kali Haldi) is an important medicinal plant belonging to family Zingiberaceae. The rhizome has a high economical importance owing to its putative medicinal properties and commonly used as folklore medicine. Micropropagation technique is an efficient tool for *in vitro* propagation of medicinal plants for their conservation and commercial exploitation of valuable and superior quality plant-derived pharmaceuticals. This technique is of prime importance for those medicinal plants which have attained the status of being critically vulnerable or endangered. The development of plant regeneration system depends upon various factors such as explant type, composition of culture media, exogenous supply of hormone and cultural conditions. The type of explants has been identified as one of the major factors affecting the *in vitro* response. The present study was conducted using various parts of the plant viz. leaf, root, rhizome piece, mature bud of rhizome and sprouted bud of rhizome in different hormone concentration and combinations in MS media for shooting. Only mature bud and sprouted bud from the rhizome responded while others did not show any sign of morphogenesis. Mature bud showed bud break in MS + BAP (8 mg/l) but then failed to form shoots while sprouted bud showed best response in MS +BAP (4 mg/l) and developed into a whole plant. Thus sprouted buds of the rhizome can be exploited for further micropropagation studies

Keywords: *in vitro* micropropagation, *Curcuma caesia* Roxb.

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A preliminary study of butterfly diversity in Rajeev Gandhi smriti van raipur

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Abstract:

Butterflies are abundant and diverse groups of insects and receive reasonable amount of attention throughout world. In Indian sub region about 1504 species of butterflies are recorded. But the butterflies abundance and species richness at city levels and human impacted areas are very few. The present study was started with a view to survey the diversity of butterfly in Rajeev Gandhi Smriti Van. Selected site is located 12k.m. from Raipur city. It is a unique ex situ conservation site spreading over area of 14 acres. It was develop to improve public awareness towards the conservation of nature and environment. The butterfly's diversity of this garden was recorded from October 2011 to August 2012 in every week from 8a.m. to 4p.m. A total of 42 species were recorded belonging to family Papilionidae, Pieridae, Lycaenidae, Nymphalidae and Hesperidae. The highest number of butterflies recorded belonged to the family Nymphalidae(17), followed by Lycaenidae(7), Pieridae(7), Hesperidae(6) and Papilionidae(5). Butterflies occupy a vital position in ecosystem and their presence and diversity are considered as a good indicator of the health of any biotope. The diversity of butterflies will be increased by the suitable measures for the conservation of larval and nectar host plant and to prevent destruction of natural biotopes.

Keywords: Butterflies, Rajeev Gandhi Smriti Van, Papilionidae

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Biodiversity of pgpr of pulses crop from Bilaspur district in Chhattisgarh

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Abstract:

Plant growth promoting soil rhizobacteria (PGPR) are naturally occurring soil bacteria that aggressively colonize plant roots and benefits plants by providing growth promotion. Little is known about the composition of bacterial diversity associated with plant roots. The present work was carried out to determine the diversity of PGPR population in the rhizosphere of various pulses crop. During present course of investigation rhizospheric soil samples were collected from the marked sampling site from different region respectively in and around of Bilaspur city. Rhizospheric soil samples were collected in triplicate in sterile polythene bags, taken to the laboratory and were subjected to isolation of microbes, their identification and characterization. In search of efficient PGPR strains with multiple activities, different microbial strains were isolated from fifty samples collected during investigation. These test isolates were screened *in-vitro* for their plant growth promoting traits. Plant growth promoting rhizobacteria (PGPR) fulfill important functions for plant growth and health by various manners. The result of the present study indicates that rhizospheric region harbour more microbial population than non-rhizospheric site and there is need to conserve such diversified microorganisms for agro productivity.

Keywords: Diversity, PGPR, Bacterial Strains, Rhizosphere.

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Some economically important wild mushrooms from the particular region of Chhattisgarh

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Abstract:

The state of Chhattisgarh exhibits varied climatic and topographic conditions, and provide congenial environment for the luxurious growth of diverse group of fungi. However, the literature shows limited and scanty information on the species of macrofungi from this state. In this backdrop, a systematic study of mushroom diversity from the particular region of Chhattisgarh was undertaken. During the course of intensive field research over the last few months in the forests of some regions of Bhilai & Durg region, the authors collected a number of wild macrofungi belonging to *Ascomycetes* and *Basidiomycetes*. Collection was mainly concentrated in the dense coniferous and mixed forest areas. Brief morphological description, macro- and microscopic details, locality, habitat and edibility status of some economically noteworthy mushrooms have been presented in the present communication.

Keywords: Macrofungi, Macro & Microscopic Identification, Economic Aspects

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Sustainable bioethanol production from mahua flowers by indigenously isolated yeast

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Abstract:

Energy crises and environmental concerns are making bioethanol an attractive renewable fuel source. Bioethanol is fermentation alcohol produced through distillation of the ethanolic wash emanating from fermentation of biomass derived sugars. The use of yeast as a producer of fuel ethanol is becoming increasingly important as concerns regarding the depletion, environmental impact, and security of nonrenewable fossil fuel sources make renewable fuel alternatives highly attractive. The present investigation involved isolation and screening of indigenous yeasts from mahua flower collected from different regions of Chhattisgarh state and evaluation of their potential for ethanol production utilizing mahua flowers as substrate for bioethanol production. Mahua flowers are one of the major non-timber forest products and are fairly distributed across the state with every region producing some quantities of it. A total of 12 yeast strains were isolated using yeast peptone glucose agar medium, morphologically characterized and primarily screened for their fermentation ability by carbohydrate fermentation test and subjected for bioethanol production using sterilized mixture of mahua flower and water as fermentation medium under controlled condition of temperature and agitation. Bioethanol concentration was determined by specific gravity method and highest ethanol yield was obtained from yeast strain MB-S₁₀. The indigenous yeast with good fermentation ability naturally, yielding appreciable ethanol percentage and minimize production cost, could be obtained from mahua flowers.

Keywords: Bioethanol; fermentation; mahua flower; specific gravity

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Seasonal variation of leaf surface mycoflora of *Barleria prionitis* L.

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Abstract:

During present studies percentage contribution of leaf surface mycoflora of *Barleria prionitis* was observed fortnightly with the help of gravity petriplate method, the percentage frequency of the leaf surface mycoflora was also observed. *Chaetominum aureum*, *Aspergillus niger*, *Asp flavus*, *Penicillium rugulosum*, *Curvularia clavata*, *Alternaria alternate*, were most frequent fungi, maximum percentage contribution were observed in winter season (39.62), minimum percentage contribution were (25.71) in summer season and (35.12) moderate in rainy season. Month wise percentage contributions of the leaf surface mycoflora were also recorded. Maximum percentage contribution (32) were observed in the month of November while minimum percentage (14.60) in month of May. Environmental factor also effect the percentage contribution on leaf surfacemycoflora.

Key words: Percentage contribution , zygomycotina, Anamorphic.

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Ecosystem services rendered by a sacred grove of Odisha

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Abstract:

Sacred groves are patches of native vegetation protected and preserved by indigenous local communities mostly tribal for their cultural and religious beliefs. These protected patches usually harbor rich biodiversity and are considered as traditional protected area meant for in-situ conservation of species. Ecologically such sites render a diversity of services which ranges from providing food, fodder, fuel and recreation to health services for the local people. In rendering so many ecosystem services such patches thus act as the source of subsistence for the local people. In the present context of climate change and green house gas emissions, the standing biomass of these sacred patches is expected to play a vital role in carbon sequestration. Many such patches exist in the state of Odisha because it is a tribal dominated state. But, unfortunately no attempts have been made for their inventorisation and assessment of the ecosystem services provided by these sacred groves. In the present paper attempts have been made to document some ecosystem services and significance of a sacred grove of Odisha.

Keywords: Ecosystem, Sacred groves, tribal dominant

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Medicinal plants: Their conservation through sustainable harvest methods

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Abstract:

Medicinal plants are one of the valuable forest resources throughout the world. Now also 80% of the world's population depends on the medicinal plants for curing them from various ailments. Efficacy of many such herbal medicines have also been proved scientifically. Herbal drugs are becoming the first choice of people all over the World because it has no side effects and are comparatively cheaper than the synthetic drugs. India being a mega biodiversity center having a range of climatic zone is the store house of such valuable natural resources. But unfortunately, once the medicinal properties of a plant are proved, it is exploited in such an indiscriminate manner that it faces the threat of extinction very soon. Many such plants are now facing the problems. 41 such medicinal plants have been identified in Odisha which faces the threat of extinction. Unless urgent conservatory measures and methods of sustainable harvest of their plant parts are developed, more such plants are going to vanish from our forest floor. In the present paper conservatory measures of some common but important plants along with the methods for their sustainable harvest has been highlighted.

Keywords: Medicinal plants, Conservation, Forest resources