NATIONAL SEMINAR ON ENVIRONMENTAL PERSPECTIVES AND MANAGEMENT STRATEGIES IN THE NEW MILLENNIUM

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ABSTRACTS

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Phylloplane mycoflora have been shown to neutralize the noxious effect of gaseous pollutants like NH₃, HCN and CO₂ etc. They have mostly studied for their indirect effects on plants acting as phytoparasites and antagonistic to plant pathogens. Antibiotics, enzymes, sidrophores, ammonia and HC like chemicals are responsible for antagonism. Phylloplane mycoflora produce substances similar to growth regulators induce lignification of cell wall and involve in senescence of plant parts. Phylloplane mycoflora varied quantitatively as well as qualitatively on senescing leaves. Test phylloplanic microfungi affected the chlorophyll content of Jackfruit (Artocarpus heterophyllus) excised leaves to a variety of extents. The total chlorophyll contents of leaves inoculated on the surface by Aspergillus niger (3.05 mg/g), Cladosporium herbarium (2.29 mg/g), Curvularia lunata (3.61 mg/g) and Drechslera hawaiensis (3.81 mg/g) were reduced whereas Fusarium oxysporum (4.98 mg/g) caused insignificant loss but Alternaria alternata (4.03 mg/g) had no obvious effect on pigment content of leaves.
AEROMYCOLOGICAL INVESTIGATION OF POLLUTANT AFFECTED URBAN AREAS OF JAUNPUR CITY (U.P.), MISHRA K.N. & H.C. SRIVASTAVA.

Different Patches (i.e. highly affected, medium affected and less affected sites) of Jaunpur city have been investigated from January 1999 to June 2000. Three sites i.e. RSS (along road site), KRS (densly populated) and TDS (less affected atmosphere) have been selected for the detail study. 65 genera and 150 species are isolated by the petriplate exposure technique (Turner, 1966) in all the sites and in these sites KRS is most affected, RSS was medium affected while TDS is least affected. The maximum 25 genera have been recorded in the month of December 1999 however the month of May, June and October 2000 showed minimum number of about 12 genera due to higher wind velocity. The maximum 45 species isolated in the month of March 2000 while minimum 30 species were detected in August 1999. The members of Deuteromycetes were comparatively more common than that of Phycomycetes and Ascomycetes. The percentage distribution of Deuteromycetes and other fungi were respectively 70.3 and 29.7. The common dominant members of three localities are Alternaria, Aspergillus, Absida, Botrytis, Curvularia, Colletotrichum, Chaetomium, Cephalosporium, Chrysosporium, Cunninghamela, Cercospora, Drecheslera, Fusarium, Mucor, Monila, Monosporium, Phoma, Penicillum, Rhizopus, Rhizoctonia, Trichotheclium etc.

PENICILLIUM TOXINS ASSOCIATED WITH POST-HARVEST FRUIT ROT OF CRAB APPLES (DOCYNIA INDICA DCNE). YASH PAUL SINGH & GEETA SUMBALI, Mycology and Plant Pathology Laboratory, Department of Botany, University of Jammu. Jammu-180 006.

Two Penicillium toxins viz. patulin and citrinin were found to be associated with P. expansum rotted crab apples cv. Scarlet Siberian. Both these toxins were detected in very high amounts. Patulin was detected upto 36 mg/kg whereas, citrinin level was comparatively lesser (upto 6 mg/kg of the fruit). These amount are very high in comparison to W.H.O. recommended tolerance level. This research work, therefore, suggests that proper storage and sortings of crab apples before marketing is very necessary, so that P. expansum rotted fruits are not consumed.

IN VITRO ANTIMICROBIAL ACTIVITY OF LEAVES OF SOME MEDICINAL PLANTS AGAINST HUMAN PATHOGENS, A.P. SAXENA, Department of Botany, Pt. J.N.P.G. College, Banda (U.P.).

Expressions of about 40 samples of fresh leaves belonging to 35 species of ethnobotanically important medicinal plants were tested in vitro by Agar–diffusion method for their antimicrobial activity against six pathogenic micro-organisms including Bacillus subtilis, Streptococcus faecalis, Escherichis coli, Trichophyton mentagrophytes, Candida albicans and Appergillus fumigntus.
Advance Abstracts

PROCEEDINGS OF THE
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The air of tropical countries are full of dust, microbial spores, mycelia and pollen grains etc which deteriorates the plants and causes allergic reactions in human beings. Ehrenberg (1844) first identified algae in dust sample collected over the sea. M. V. Overeem (1936-87) collected 24 air samples on six different occasions from the aeroplane over Holland. In U. K. Gregory et al (1955) and Hamilton (1959) collected Gloecapsa from the atmosphere using a first spore trap but did not study how they remain viable in the atmosphere. Brown et. al (1964) reported ah genera of Cholophyceae, 17 genera of Cyanophycae and 7 genera of Chrysophyceae from aeroflora of north Carolina USA. Smith (1972-73) reported the contributory role of algae in air pollution and effect of meteorological conditions on airborne protozoa and algae. Tiluk and Vishew (1978) reported airborne algae in Aurangabad. Air sampling by Balakrishnan and Guttale (1980) showed that the dominant element of Poona aeroflora was blue green algae, representing by 60 species. Y. B. Gaikwad (1981) studied airborne algae from Ahmedpur, with the help of air sampler. Asha Singh (1985) studied algal aeroflora of Varanasi and reported 27 genera of Chlorophyceae. 2 genera of diatoms and only one genera of other algae. The present investigation has been under taken to assess the number and quality of algal aeroflora in different localities under varying pollutant pressure of in Jaunpur district (U.P.)

### Key Words: Algae, Air localities, Jaunpur.

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### 81. Algal Diversity in Ganges River

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### Key Words: Biodiversity, Ganges, C. Sur.

Biodiversity is defined as the variety and variability of plants, animals and microorganisms. All organisms include algae, fungi, bacteria and viruses of the ecosystem, are often overlooked topics. Some of them are
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isolated from submerged decaying leaf litter as well as water foam accumulated at the barrier of a fast flowing fresh water stream of Kumaun Himalayas. Of these, one species viz. Tetracladium apinense was found as new to India while two species viz. Clavatopsis azlani and Tetraploa aristata were found new to Kumaun Himalaya (Uttaranchal).


The leaf leachates rich in nutrient have a direct enhancing effect on growth and multiplication of micro-organism. The variety of exudates full of organic molecules are able to stimulate or sometime inhibit the fungal spore germination in phylloplane of many plant spp. The germination of conidia and germ tube growth are characterized to their carbohydrates and amino acid compositions or through interaction between them and other chemicals present on the leaf surface. Assending paper chromatographic detection of plant leaf extract clearly indicated that young leaves have lesser number of amino acids (alanine, asparagine, histidine, methionine) and sugars (xylose, sucrose, glucose) in exudate and extract than mature ones. It contains amino acids (alanine, asparagine, histidine, methionine, isoleucine, glycine) and sugars (xylose, sucrose, glucose, ramnose, ribose % mannose). The exudate and extract of both young and mature leaves promote the growth and conidial germination of Fusarium oxysporum, Cladosporium cladosporiodes, C. herbarum, Curvularia lunata and Alternaria alternata but in case of Cercospora betica, exudate of young leaves of Pigweed (Chenopodium album) showed inhibition in linear growth and conidial germination. This type of inhibition is also reported in cow pea leaves, sugarbeet leaf and leaf leachates of Syringa vulgaris against some specific pathogens. The inhibition is due to some secondary chemical (terpenoids and phenolic compounds) which inhibit germination and released by phyilosphere micro-organisms and certain other inhibitory substance which is originated by leaf itself.

I-11 FUSARIUM SEMITECTUM AS A DOMINANT SEED-BORNE PATHOGEN IN DALBERGIA SISSOO ROXB., ITS LOCATION IN SEED AND PHYTOPATHOLOGICAL EFFECT, SARIKA GUPTA & TRIBHUWAN SINGH, Department of Botany, University of Rajasthan, Jaipur-302 004.

Legume trees are widely grown as avenue trees and possesses immense economic values in terms of medicine, timber, tannin, gum, feed and fodder etc. Sixty one seed samples of Dalbergia sissoo Roxb. collected from various regions of Jaipur, in the year 2001-2002 were studied for seed abnormality, mycoflora associated and their photopathological effect. Besides flat, reniform and brown coloured normal seeds (57.0-75.75%), dark brown to black discoloured (4.0-18.0%) and dull to shiny appearing (0.5-9.25%) seeds were recorded in dry seed examination. 12 seed samples on incubation tests in standard blotter method revealed 26 species of 17 genera. Of these Alternaria alternata, Aspergillus flavus, A. niger, Chaetomium globosum, Cladosporium cladosporioides, Curvularia lunata, Drechslera australiensis, Fusarium culmorum, F. semitectum and Rhizoctonia bataticola were dominant and significantly reduced seed