

Spore calendar of Bilaspur city with special reference to allergy

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ABSTRACT

Aeromycoflora of Bilaspur city was studied during March 2009 to Feb 2010. Total 1760 fungal spores represented 21 fungal types were observed during the present investigation period. *Cladosporium oxysporum* showed the maximum percentage contribution of aero-mycoflora with the percentage of (14.09%), was followed by *Alternaria alternata* (10%). Both *Trichoderma* sp. (1.07%) and *Bispora* sp. (1.25%) showed the minimum percentage contribution of aero mycoflora were observed. Higher concentration of spores was observed during August (263) and lower concentration in the month of April (80). Out of total flora *Aspergillus* sp, *Cladosporium* sp., *Curvularia* sp and *Aspergillus niger* are allergenic in nature.

Key words: Aeromycoflora, Fungal Sporas, Concentration.

INTRODUCTION

A great variety of fields are represented under the umbrella of aerobiology, including plant, human and animal pathology, entomology, air pollution effects, palynology, phytogeography and meteorology. Aerobiology is the study of airborne biological material, chiefly pollens and spores and their transport on other organisms. Microorganisms always present in the nature and they migrate through one place to another by air current. Fungus is the common microorganisms in our environment, and always present in form of spores. Airborne dusts containing fungal spores are associated with a range of respiratory diseases. The study of airborne fungal spores enables their occurrence to be related to the incidence of respiratory symptoms in exposed individuals. The particulate materials considered important in aerobiology include smokes and dusts, radio nuclides, pesticides and the biological forms, bacteria, fungi, fragments and spores of algae, protozoa and fern spores, pollen, plant fragments, minute seeds, insects and other micro fauna.

MATERIALS AND METHODS

During the present investigation gravity Petri plates methods was used for aeromycological survey of Bilaspur city. The survey conducted for one year March 2009 to Feb 2010. Ten sterilized

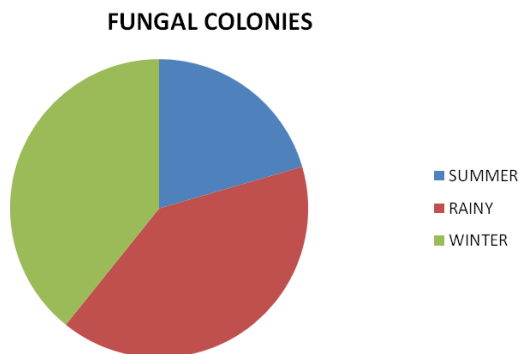


Fig. 1

Petri plates containing PDA medium will expose for 5-10 minutes at different places of Bilaspur city at one meter height above the ground level. Then the Petri plates, brought into the laboratory and incubated at $26\pm 1^\circ\text{C}$. for seven days. At the end of the incubation period the percentage contribution and percentage frequency were assessed. At the end of incubation period the fungal colonies were counted, isolated and identified with the help of available literature. (Ellis, 1949 ; Barnett, 1969 ; Nagmani *et al.* 2006).

RESULTS AND DISCUSSION

During the investigation period total 1760 fungal colonies belonging to 21 species from 13 genera were observed. Out of which 444 fungal colonies in summer, 628 in rainy & 688 in winter season were observed (Fig.1). Percentage frequency and percentage contribution were also observed during investigation period. *Cladosporium oxysporum* showed the maximum percentage contribution of aero-mycoflora with the percentage of (14.09%), was followed by *Alternaria alternata* (10%). Both *Trichoderma* sp. (1.07%) and *Bispora* sp.(1.25%) showed the minimum percentage contribution of aero mycoflora were observed (Table-1) Out of total flora *Aspergillus* sp, *Cladosporium* sp., *Curvularia* sp and *Aspergillus niger* are allergenic in nature.

Aspergillus sp. was observed throughout the study period similar result was also reported by

Tiwari *et al.* (2006). Anamorphic fungi recorded as the most contributed fungal group throughout the study period similar result also recorded by (Jadhav and Tiwari 1994; Tiwari *et al.* 2005).

Table 1: % contribution of fungal flora

S. No.	Fungal Species obtained	Percentage contribution (%)
1	<i>Alternaria alternata</i>	10.00
2	<i>Aspergillus awamori</i>	1.42
3	<i>Aspergillus flavus</i>	3.52
4	<i>A. fumigatus</i>	6.47
5	<i>A.japonicus</i>	1.98
6	<i>A. nidulans</i>	2.27
7	<i>A. niger</i>	9.94
8	<i>A. temari</i>	2.55
9	<i>Bispora</i> sp.	1.25
10	<i>Cladosporium oxysporum</i>	14.09
11	<i>Curvularia lunata</i> .	9.48
12	<i>Curvularia clavata</i>	6.07
13	<i>Drechslera</i> sp.	6.59
14	<i>Fusarium</i> sp.	5.56
15	<i>Mucor</i> sp.	2.67
16	<i>Mycelia sterilia (white)</i>	4.54
17	<i>Nigrospora</i> sp.	1.53
18	<i>Penicillium crysogenum</i>	4.26
19	<i>P. frequentaus</i>	1.81
20	<i>Rhizopus</i> sp.	2.84
21	<i>Trichoderma viride</i>	1.07

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