

Study of Aeromycoflora from Dnyanganga Wild Life sanctuary of Buldhana, Maharashtra

Rasika. N .Patil¹, Sahadeo .P. Rothe²

Research Student, Department of Botany, Shri Shivaji College, Akola (M.S), India¹

Professor and Head, department of Botany, Shri Shivaji College, Akola (M.S), India²

Abstract: Aeromycoflora of Dnyanganga Wild Life sanctuary of Buldhana studied with the help of Petriplate method. Total 250 fungal colonies represented 15 fungal species were observed during the present investigation period. Environmental factor play an important role for the distribution of the fungal spores. The fungal species were Cladosporium, Alternaria, Fusarium, Aspergillus, Penicillium, Curvularia, Rhizopus, Trichoderma species were observed. It is found that maximum percentage contribution is observed for Cladosporium, followed by Aspergillusniger, A. flavus, A fumigates. On the contrary, minimum percentage contribution is observed for Aspergillusnidulans. Spores are released into the environment from fungi growing as saprophytes or parasites. Saprophytes are fungi that grow on dead or decaying organic matter in the soil or elsewhere in the environment. Parasites, on the other hand, infect living host plants. Fungal spore concentrations outdoors are usually high in the late summer or fall.

Keywords: Dnyanganga, Environmental, Cladosporium, Saprophytes, Fungal, summer, etc.

1. INTRODUCTION

In the present era aerobiology is a vast branch of science which draws information from various disciplines life plant pathology, forestry, mycology, Allergology, Materology, Palynology, Palaebotany, veterinary Science and biodeterioration. Environmental factor play an important role for the distribution of the fungal spores .Several forms of microbes are found in the atmosphere, some of which may be pathogenic to host and some are allergic for human beings (Adhakari et.al 2004). The fungal spores are liberated in air from various sources in massive concentration and can remain airborne for a long time. Fungal spores are important source of various plants and animals diseases.Hence, its concentration should be known.

The study of atmospheric constituents, living and non-living e.g. Airborne fungal spores are essential step for existence of life and over come on life threatening problems(Arora 2003). The bioparticulates implicated to cause allergic symptoms are pollen grains, fungal spores, insect debris, house dust mites, animal dander, chemicals and foods etc. Among all these agents, pollen grains and fungal spores are the most predominant allergens in the air (Sharma 2004).

However, for the effective diagnosis and therapeutic management of these ailments, detailed information on the daily, seasonal and annual variations of various bioparticles is essential similarly aerobiological investigation. A profusion of fungi exists in the environment. Somefungiareableto cause atmospheric constituents, living and non- living e.g. Airborne fungal spores are essential step for existence of life and over

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A profusion of fungi exists in the environment. Some fungi are able to causean invasive infection in otherwise healthy individuals. Other fungi are opportunistic fungi that become invasive when immune defenses are compromised. Diagnosis of fungal infection is difficult. There are many problems when you try to connect a test result disease. Fungi are so abundant and there are so manyvarieties in every environment that it is seldom easy to pick just one cause among many (Kunjam, S. 2007). Environmental factor play an important role for the distribution of the fungal spores.

2. MATERIALS AND METHODS

For the study of aeromycoflora, fifteen sterilized Petri plates containing PDA media are exposed 5 to 15 min. in selected site. These exposed Petri plates brought in to the laboratory and incubated at 28±10°C for incubation period. At the end of incubation period fungal colonies are counted, isolated and identified with the help of available literature and finally identified by available mycological keys.

List of Isolated Aeromycoflora

Sr. no	Name of Fungi	Fungal colony count (%)
1.	Alternariaalternata	2.76
2.	Aspergillusflavus	21.87
3.	Aspergillusfumigatus	6.89
4.	Aspergillusnidulans	5.70
5.	Aspergillusniger	27.58
6.	Cladosporiumcladosporioides	0.74
7.	Curvulariaclavata	0.50
8.	Curvularialunata	0.48
9.	Fusariummoniliforme	0.87
10.	Fusariumoxysporum	0.85
11.	Nigrosporaoryzae	0.54
12.	Penicilliumnotatum	2.88
13.	Phomastipata	0.35
14.	Rhizopusstolonifer	1.76
15.	Trichodermaviridae	0.65
16.	Phomastipada	0.24
17.	Mucorsp.	1.25



Fig.4

3. RESULT AND DISCUSSION

Mixed culture of Aeromycoflora from selected site (Fig 5-6)



Fig-5



Fig-6

Pure culture so some dominant fungal species (Fig a-e)



a.Pure culture of Aspergillus niger

Collection sites of Aeromycoflora of Dnyanganga Wild Life sanctuary(Fig 1-4)



Fig.1



Fig.2

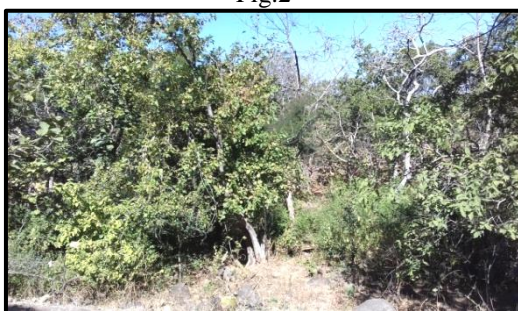
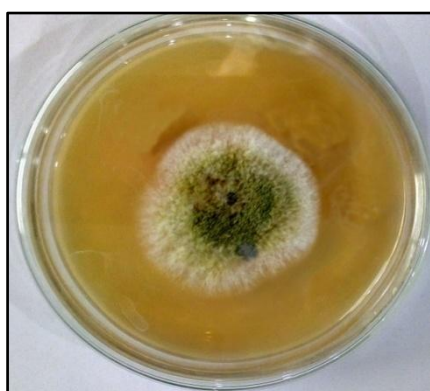
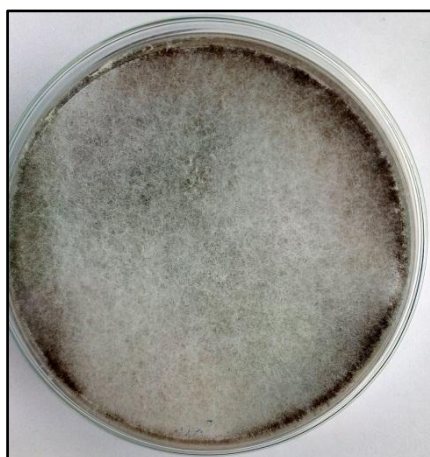


Fig.3


b. Pure culture of *Aspergillus nidulans*

c. Pure culture of *Aspergillus flavus*

d. Pure culture of *Aspergillus fumigatus*

e. Pure culture of *Rhizopus stolonifer*

4. RESULT AND DISCUSSION

Disease increases are particularly common for fungi dispersed in air. These airborne fungi have in the past, been unimportant because the human body has an effective immune response has been removed by agents of disease or medical intervention (Sharma K. 2001). With the increased medicalisation of human life, it is likely that disease caused by air borne fungi will increase. Inhalation of spores in most cases has no effect on humans. The spore lodge on the moist surfaces of the lining of the airways and they are subsequently expelled in mucus (Pande 2011). The remaining spores are neutralised by the immune response and cause respiratory disease. Many molecules including melanin reduce the penetration of radiation especially in the UV range. Melanin is contained in walls of spores and so is the first barrier to UV. However, a range of other UV absorbing molecules are found in spores. The consequence is that energy is transformed usually to heat, which can be readily radiated from the spore in air (Sharma 2009).

5. CONCLUSION

Present study clear that high contamination of fungal spores with multiple allergic in atmospheric condition poses a serious problem to tribal people of nearby villages of the sanctuary. Thus, this data helped us to prepare the fungal calendar on this region and gives scope for the further such studies.

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