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STUDY OF INTRAMURAL AEROBIOLOGY WITH REFERENCE TO LIBRARY

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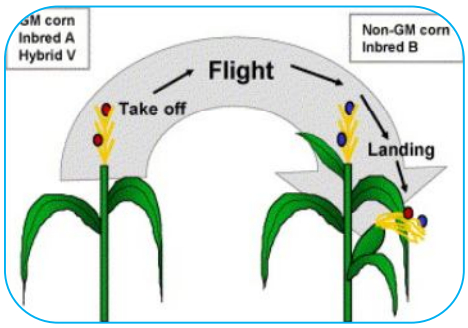
ABSTRACT



Atmospheric air is a mixture of different gases, vapours, dust and is not necessary but now and then various transient microorganisms like viruses, bacteria, fungal spores etc. With pollen grains. These all become major components of our environment and when in the air these aerobic biological particles form bioaerosols. Air serves as a medium for propagation of these microorganisms until fertile material is obtained for reproduction.This study focuses on one of the most dangerous factors responsible for the deterioration of library material, such as Burshi and Shivaji College, Renapur, Latur, Maharashtra. Adequate arrangements have been made to deal with the various factors that affect the health of books.

KEYWORDS: *Intramural Aerobiology, different gases.*

INTRODUCTION

Tilak (1984) discusses biology and cereal crops. Some fungi are harmful not only to plants and vegetables but also to humans. This branch of biology has gained more and more importance because air is the medium of dispersal of micro-organisms which are the carriers of most infectious diseases, on the other hand useful pollen is also transported to their destination by the same air. In their life cycle, microorganisms emerge from surfaces such as soil, water, or plants. Once they are carried in the air they are carried by the air to different places or they remain at the mercy of the air until they get some surface swell. The components of aerosols, which are viruses, bacteria, fungi, yeasts and protozoa, are exposed to the harshness of the atmosphere. Many of them adapt to these adverse weather conditions. Between their entry into the atmosphere and finding the right material to thrive, they are exposed to adverse weather conditions. If they survive, some of these microorganisms find their way to the clouds and begin to decompose organic matter. With rainwater these microbes find their new destination to build colonies. The drops in the clouds are large enough to keep microorganisms hydrated; Drops, on the other hand, are so small that they can hang in the air.

A library is an organized repository of knowledge and a collection of sources of information that may be maintained by individual, private or public authorities and accessible to some defined or general public for reference or borrowing. The books of knowledge are inherited from generation to generation. It takes decades for writers to achieve what they set out to do. Man's life is relatively short, so if books did not exist, the progress of mankind could be imagined. If there were no books, everything would be destroyed in the course of time and this raises the question of preservation of books.

Knowledge of the past, which is indispensable for present and future generations, is preserved in library books. These thoughts, ideas and facts from all ages, fields and directions make the library a storehouse of knowledge.

MATERIAL AND METHOD:

The method adopted for capturing aroma mycoflora was culture plate exposure method. Potato dextrose agar (PDA) was used for fungal culture. Potato dextrose agar (PDA) is a source of dextrose in carbohydrates which stimulates growth and acts as a nutrient base for the growth of luxurious fungi. Agar is added as a soldering agent. The structure of fungal culture media is as follows:

Composition Media of Fungal Culture

1. Potato:	200 grams
2. Dextrose:	200 grams
3. Agar:	Agar – 20 grams
4. Distil Water:	1 Litre
5. Ph:	-5.7

The Process of Isolation of Fungal Culture

- Isolation of Indoor Aromycoflora
- Isolated Fungal Species Identification
- Process for culture of pure fungal species
- Study of Ecology

RESULT IN THE STUDY AT SHIAVJI MAHAVIDYALAY LIBRARY:

This is a 2015-16 study conducted by Shivaji College, Renapur, Latur District (Maharashtra) which shows the presence of Indoor Aromycoflora and the effect of population and their height and seasonal differences. The presence and quantity of fungal spores is also considered an indicator of environmental bio-pollution. It has been observed that there is no uniformity in the fungal population throughout the year. The aim of the present study is to detect the presence of various fungal plants in the indoor environment at different heights in the library.

1. Aeromycoflora Identification and Survey in Library:

The presence of fungal spores has been detected throughout the study period. Out of a total of 74 fungal species, 64 belong to the anamorphic fungus, which is the dominant subdivision. During the inspection period 74 fungal species (3179 colonies) out of 34 species were found. Of the total fungal species found, 8 fungal species (93 fungal colonies) fall into 3 species of Zygomycotina, 2 fungal species (24 fungal colonies) belong to 3 species of Ascomycotina, and 3 fungal species (137 fungal colonies) belongs to Mycelia sterilia.

2. Predomination Fungal Spore Identification in Library:

Anamorphic fungi are the most dominant subdivision with the most (64) fungal species followed by Zygomycotina (9), Ascomycotina (5) and Mycelium disinfection (4). In Zygomycotina subdivision, 4, 4, 3 and 2 fungi species are trapped in winter on the ground floor, first floor, journal section and second floor, respectively. In summer, 4, 4, 3 and 3 fungal species are found in the same subdivision on the ground floor, first floor, journal section and second floor, respectively. The recoding of 4,8,4 and 4 fungal species on the ground floor, first floor, journal section and second floor, respectively, led to a slight increase in the number of fungal species during the rainy season. Three fungal species of Ascomycotina subdivision have been identified and all three are winter only. 3, 3, 2 and 2 fungal species are recorded on the ground floor, first floor, journal section and second floor. No species of fungus was caught in this subdivision during summer and rainy season.

The highest number of fungal species reported in this study is from the Anamorphic Fungi subdivision. During the winter season, 44, 58, 52 and 36 fungal species were recorded on the ground

floor, first floor, journal section and second floor, respectively. During the summer season, 24, 30, 30 and 21 fungal species were recorded on the ground floor, first floor, journal section and second floor, respectively. The ground floor, first floor, journal section and second floor recorded 36, 42, 34 and 35 respectively during the rainy season.

3. Variation of Fungal Spore study at Qualitative and Quantitative:

Climate, geography of the area and many other factors play an important role in the spread of fungal spores. Favorable weather indicates a sudden increase in the number of spores. Out of a total of 74 fungal species, 64 are anamorphic fungi. During the inspection period, 74 fungal species (3175 colonies) of 38 species were found. Of the total fungal species found, 7 fungal species (96 fungal colonies) fall into 2 species of Zygomycotina, 3 fungal species (28 fungal colonies) belong to 2 species of Ascomycotina, 2 fungal species (139 colonies) belong to 1 genus. The highest number of Mycelia sterilia and fungal species 64 (2920 fungal colonies) is found in 35 species of anamorphic fungi.

4. Aeromycoflora study at different height in floor wise:

During the study period, distribution of fungal spores was observed on different floors of the study site. Elevation plays an important role in the propagation and growth of fungal spores. The number of floor species and trapped fungal colonies were recorded during the study period. The percentage of how often fungal colonies appeared during the observation period is indicated by the frequency floor. The second floor, which was the top floor of the study site, showed wide differences in the frequency of fungal species and colonies.

• **Ground Floor:** The number of fungal species which were observed in ground floor with the high percentage frequency was Aspergillus niger (100%), A. fumigatus (92.21%), A. oryzae (67.17%), A. luchuensis (62.57%). The number of species colonies that were lesser in numbers were Mucor circinelloides, Myrothecium Verrucaria, Colletotrichum gloeosporioides, Drechslera spicifera, D. hawaiiensis, Epicoccum purpurascens, Fusarium solani, Gilmaniella humicola, Helminthosporium tetramera, , Phoma glomerata, Stemphylium sps. (4.20%), Chaetomium globosum, Myrothecium roridum, Chaetomella raphigera, Curvularia lunata, Nigrospora oryzae, Paecilomyces varioti, Penicillium sclerotiorum, Pestalotiopsis glandicola, Phanerochaete chrysosporium, Pithomyces chartarum, Trichoderma viride (8.38%), Botryodiplodia theobromae,, Stachybotrys alba, Tricothecium roseum (12.57%), Rhizopus stolonifer, Alternaria tenuissima, A. citri, Cladosporium sphaerospermum, Drechslera tetramera, Epidermophyton floccosum, Emericella nidulans, Fusarium oxysporum, Monilla sps, Phoma herbarum, Scytalidium lignicola (16.63%).

• **First Floor:** On the first floor, where the highest number of fungal colonies was reported, the number of fungal species with high percentage frequency was Aspergillus niger (100%), A. oryzae (84.03%) and Penicillium chrysogenum (71.09%). Myotythium Roriadum, Penilsium Expansum, Pestalotiopis Glandico (4.16%), Myrticium Verukeria, Acromonium Struck, Botriodiplodia Theobroms, Emerisel Nidulons, Gilmania Hummesella, Penisillium Italicum, Pithomyces chartarum (8.33%), Phanerochaete chrysosporium, Mucor circinelloides, Fusarium moniliforme, Rhizopus ehrenberg, Helminthosporium tetramera, Paecilomyces varioti (16.28%), Curvularia lunata, A. parasiticus, Trichoderma viride (12.52%), R. nigricans, Scytalidium lignicola, Epicoccum purpurascens, Monilla sps., Aspergillus carneus, Acremonium kiliense, Drechslera tetramera, Chaetomella raphigera, Penicillium citrinum, C. pallescens, Chaetomium globosum, Curvularia clavata,

• **Second Floor:** Out of a total of 74 fungal species on the second floor, Aspergillus niger (100%), a. Fumigatus (91.89%), A. Lucensis (71.01%) showed the highest percentage frequency. Low frequency species and colonies reported Alternaria tenuisima, Curvularia lunata, Drechslera Hawiensis, Emerisus nidulans, Fuserium moniliform, Helminthosporium tetramera, Pacillomyces varioti, Penicil. Stamberotium, Stamberotium, Alternaria, S. (4.18%). Curvularia pallescens, Rhizopus stolonifer,

Rhizopus stolonifer, Penicillium expansum (12.72%), Aspergillus nidulans, A. carneus, Humicola grisea, Epicoccum purpurascens, Fusarium chlamydosporum, Alternaria citri, Colletotrichum gloeosporioides, Phanerochaete chrysosporium (8.65%), R. nigricans, Mucor racemosus, Nigrospora oryzae, Epidermophyton floccosum, Mucor circinelloides, Chaetomella raphigera, Acremonium strictum, A. parasiticus, Fusarium oxysporum, Aspergillus ochraceus, Chaetomium globosum, Gilmaniella Humicola, Myrothecium roridum, Trichoderma viride, (16.94%), Botryodiplodia theobromae, Aspergillus terreus, Drechslera spicifera, Monilla sps., Rhizopus oryzae. Some fungal species and colonies do not show their presence on the second floor, Scytalidium lignicola, Pestalotiopsis glandicola, Myrothecium verrucaria, Curvularia clavata, Drechslera tetramera, Penicillium citrinum, Pithomyces chartarum, Fusarium solani, Acremonium kiliense, and Tricothecium roseum.

• **Journal Section:** A high percentage of fungal species between the second and first floors was reported in the journal section, including Aspergillus niger (100%), a. Flavors (88.10%), a. Fumigatus (84.05%), Mycelia sterilia white (78.21%). Fungal species and colonies with low percentage of reported mucor cersinelloids, acremonium cillians, pacilomyces variant (4.21%), Curvularia clavata, Stachybotrys alba (8.33%), Penicillium citrinum, R. oryzae, Fusarium moniliforme, P. sclerotiorum, Rhizopus ehrenberg, Gilmaniella humicola, Pithomyces chartarum, M. verrucaria, Mucor pusillus, Phanerochaete chrysosporium, Alternaria tenuissima, Epicoccum purpurascens, Botryodiplodia theobromae, Colletotrichum gloeosporioides, Humicola grisea, Myrothecium roridum, P. italicum, Helminthosporium tetramera, Nigrospora oryzae, Drechslera tetramera, Acremonium strictum, A. parasiticus, Phoma glomerata, Stemphylium sps., Chaetomella raphigera, Rhizopus nigricans, Penicillium expansum, Curvularia pallescens, Alternaria citri, Trichoderma viride (16.31%). Some fungal species and colonies that did not show their presence on the second floor are: mucor resmosus, Chetomium globosum, Aspergillus carnius, Fuserium solani.

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