RESEARCH ARTICLE

BIODIVERSITY OF MYCOFLORA IN MANGROVES HABITAT OF MUMBRI CREEK OF SOUTH KONKAN, MAHARASHTRA.

Dekate HM[1], Yeragi SG[2] and Yeragi SS[2]

[1]ICLES Motilal Jhunjhunwala College, Vashi, Navi Mumbai.
[2]K. J. Somaiya College of Science, Vidyavihar, Mumbai-400077.

ABSTRACT

The present investigation is carried out in Mumbri Creek of Sindhudurg district (Lat. 16º 21' N. Long. 73º25' E). The main aim of this work is to find out the productivity of the Mumbri creek. This abstract consists of major mycoflora such as Phycomycetes, Ascomycetes, *Zygomycetes* and Deuteromycetes. The mycoflora help in making the wetlands highly nutritious which enhances commercially important resource organisms.Pneumatophores of *Avicenniamarina* provide excellent media to grow the fungi on large scale. The Deuteromycetes were dominating group.

Keywords : Mycoflora, Mangrove, Mumbri Creek.

INTRODUCTION

The diversity and density of mycoflora associates with root surfaces of one major mangrove species in Mumbri creek, South Konkan, Maharashtra was studied during Jan.-Sept. 2013. The species recorded in the present investigation belonged to *Phycomycetes, Ascomycetes, Zygomycetes* and *Deuteromycetes.* The fungi were observed on one dominant mangrove species namely *Avicennia marina*, whichharbours 12 genera and 17 species and some unidentified colonies. Among the species, *Aspergillus spp.* was most dominant species on the mangroves.

From the mycofloral point of view, tannin is an important secretion of mangrove that protects the protoplast against dessicational decay which plays an important role in establishment of mycoflora. The tannin along with, entangled fine silt or sand particles, from a film around the roots in which spores and fungi germinate to establish mycoflora in this interesting microhabitat. The film seen as a nutrient broth or medium in which the fungi are trapped and grow luxurious developing colonies of different classes.

MATERIAL AND METHODS

Regular fortnight samples of the pneumatophores of *Avicennia marina* were collected for a period during Jan.-Sept.2013. The fungi were obtained by serial washing of roots following Harley and Waid (1955) method.

RESULTS

In all genera, A*spergillus spp*. was the dominating genus with highest average percentage to be followed by *Curvularia*. The percentage distribution was *Deuteromycetes* (42.22), *Zygomycetes* (12.88), Phycomycetes (16.00), Ascomycetes (25.77) unidentified colonies (3.11). *Chaetomium olivaceum* (Ascomycetes) was the percentage wise lowest species. The class percentage of fungi was lowest in monsoon compared to pre monsoon and post monsoon periods. The maximum number of species was recorded in the months of October to March, while minimum in July to August. The observed variation in density can be attributed to extreme hydrological condition like heavy rainfall, high velocity of water currents, flooding and mechanical stress due to wind and water currents that prevent formation and stability of slime film formation around roots. In the case of *Avicennia marina*, 12 genera and 17 species

and some unidentified colonies were recorded of mycofloral diversity. Among the fungal class, *Deuteromycetes* was dominating over the other three and A*spergillus* was the most abundant species.

Aspergillus niger or *A. niger* is a fungus and one of the most common species of the genus *Aspergillus*. It causes a disease called fruit scab on certain fruits and vegetables such as grapes, onions, and peanuts, and is a common contaminant of food. It was seen that altogether five diseases caused by *Aspergillusniger, Aspergillus flavus, Alternaria* Sp., *Botrytis cinerea* and *Rhizopus stolonifer* were recorded. However, fruit scab by *Penicillium expansum*was recorded at maximum places and on more varieties. Baviskarand Suryawanshi (2013).

Aspergillus fumigatus is a fungus of the genus *Aspergillus,* a saprotroph wide spread in nature, is typically found in soil and decaying organic matter, such as compost heaps, where it plays an essential role in carbon and nitrogen recycling.

List of fungal species

1) Phycomycetes
   a) *Absidia ramose*
   b) *Rhizopusnigricans*
   c) *Syncephalastrumolivacum*
2) Ascomycetes
   a) *Emericellanidulans*
   b) *Cirrenaliatropicalis*
3) Deutromycetes
   a) *Aspergillusfumigatus*
   b) *A. nidulans*
   c) *A. niger*
   d) *A. terreus*
   e) *A. flavus*
   f) *Cladosporiumoxysporum*
   g) *Curvulariaoryzae*
   h) *C. tuberculata*
   i) *Fusariumoxysporium*
   j) *Penicillumnigricans*
   k) *Trichothesumroseum*
4) Zygomycetes
   a) *Mucorracemosus*
5) Unidentified colonies

Check list of fungi species isolated from the mangroves.

Sr. No.	***Avicennia marina***
01	*Absidia ramose*
02	*Mucorracemosus*
03	*Rhizopusnigricans*
04	*Syncephalastrumolivacum*
05	*Aspergillusfumigatus*
06	*A. nidulans*
07	*A. niger*
08	*A. terreus*
09	*A. flavus*
10	*Cladosporiumoxysporum*
11	*Curvulariaoryzae*
12	*C. tuberculata*
13	*Emericellanidulans*
14	*Fusariumoxysporium*
15	*Penicillumnigricans*
16	*Trichothesumroseum*
17	*Cirrenaliatropicalis*
18	Unidentified colonies

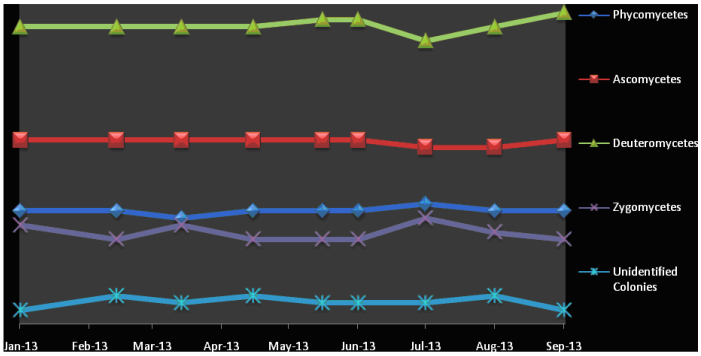
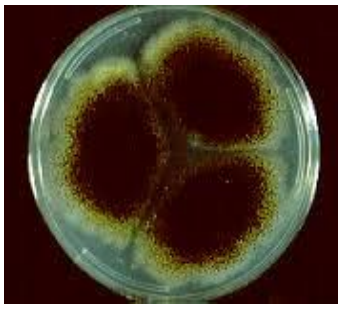


Fig. 1: Percentage composition of fungal classes isolated from *Avicennia marina*.



Aspergillusniger

Aspergillusfumigatus

DISCUSSION:

Patole (2009) has recorded that the stilt roots are better for the abundant growth of mycoflora than for the pneumatophores of *Avicennia* species. The stilt or prop roots also differentiate that the inner roots show more fungi than those in the outer peripheral region because of comparatively more humidity on the inner side. The humidity is directly proportional to both qualitative as well as quantitative growth of fungi. Babu (1999) noticed that the mycofloral growth is affected in monsoon than in any other season. In monsoon, due to the breaking of the waves on the root surfaces, the freshly developed film gets washed out thus inhibiting the multiplication of mycoflora. Parkinson (1967) described the root surface fungi of rhizoplane fungi. Untawale, A. G.,Dwivedi, S. N. and Singbal, S. Y. S. (1973)have investigated rhizoplane fungi of certain plants and also those colonizing inter-tidal region of the mangrove swamps.

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