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Short Communication

Mycoflora Association With the Decomposition of Leaf Litter of Three Endangered Plant Species in Deciduous Forest of North Sahyadri, Nashik District

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ABSTRACT

Fungal association with decomposing of three endangered plant species like *Tectona grandis*, *Madhuca longifolia* and *Butea monosperma* were studied by using the soil dilution plate count method in deciduous forest of Nashik district under the field conditions. Among the fungi *Aspergillus* sps. and fungi imperfect were predominant in comparison with other fungi. In all the species, maximum fungal number were recorded in monsoon season while lower in summer and least in winter. Leaf litter of *Tectona grandis* shows maximum fungal occurrence followed by *Butea monosperma* and *Madhuca longifolia*.

The percentage and nature of litter which is the major source of a variety of organic matter has an important bearing on soil formation and its fertility. Litter decomposition is an important process of the nutrient cycling in forest ecosystems (Charley & Richards 1983). The decomposition of plant litter on the soil surface is brought about by a variety of microorganism's including fungi, bacteria and actinomycetes (Jensen 1974) Among these, fungi are the chief colonisers and decomposers (Dickinson & Pugh 1974). The present investigation reports the succession of fungi on decomposing leaf litter of *Tectona grandis, Butea monosperma and Madhuca indica.*

The mycoflora from the decomposing litter was studied by the soil dilution plate-count method of Timonin (1940) using Waksman's synthetic agar medium. The litter was cleaned free of extraneous materials, air-dried, powdered and 1g material of each litter separately taken into 100 mL sterile water in 250 mL conical flasks. Diluted 1mL suspension of each was transferred separately to triplicates and plates were incubated at room temperature (30±4°C) for ten days. The developing fungal colonies were transferred to Waksman's synthetic agar medium slants for pure culture and sporulation which facilitate identification. The plates were observed for a period of 10 days and the colonies of fungi were enumerated and identified with the help of type of sporulation, colour of fungal colonies and nature of mycelium.

A total 32 species of fungi and one sporulated mycelium were isolated from the decomposing leaf litter of different plant species in different seasons, which is presented in Table 1. As compared to *Madhuca longifolia,* the *Tectona grandis* and *Butea monosperma* species showed higher isolated fungi in all the seasons. The most dominant fungi of all the leaf litter species were *Aspergillus niger, A. flavus, A. carbonarius, Rhizopus stolonifer, Mucor globosum, Alternaria alternata, Fusarium oxysporum, Rhizoctonia soloni* and *Cladosporium harbarium*. The results showed that a good number of fungi were common in all the decomposing material, while a few were restricted to each type of litter. This may be due to the occurrence of species specific fungi (Macauley & Trower 1966).

Table: 1 Fungal diversity in decomposing leaf litter of different species in different seasons.

Sr..	Fungal species	Monsoon			Summer			Winter		
No		1	2	3	1	2	3	1	2	3
1.	*Aspergillus carbonarius*	+	+	+	+	+	+	+	+	-
2.	*A. fvavipes*	+	+	+	+	-	+	-	+	-
3.	*A. flavus*	+	+	+	+	+	-	-	+	+
4.	*A. fumigatus*	+	+	-	-	-	-	-	-	-
5.	*A. niger*	+	+	+	+	+	+	+	+	+
6.	*A. sulphureus*	+	-	+	+	-	-	-	-	-
7.	*A. ustus*	-	+	+	-	+	-	-	-	-
8.	*A. zonatus*	-	+	+	-	-	-	-	-	-
9.	*Alternaria alternata*	+	+	+	+	+	+	+	-	-
10	*Curvularia lunata*	+	-	+	-	-	+	+	-	-
11	*C. pallescence*	+	+	-	+	-	-	-	-	+
12	*Cladosporium herbarium*	+	+	+	+	+	-	+	-	-
13	*Cunninghamella* sp.	+	-	+	-	-	-	+	-	+
14	*Drechslera longirostrata*	+	+	-	+	-	-	-	-	+
15	*D. tetramenra*	+	+	+	+	-	-	-	-	+
16	*Doliomyces* sp.	+	-	-	+	-	-	-	-	-
17	*Fusarium monilliformae*	+	+	+	-	-	+	+	-	-
18	*F.oxysporum*	+	+	-	-	+	+	+	-	+
19	*Geoglossum* sp.	-	-	+	-	-	-	-	-	-
20	*Mortierella* sp.	+	+	-	-	-	-	-	-	-
21	*Mucor globosum*	+	+	+	+	+	+	+	-	+
22	*Penicillium brefeldianum*	+	-	-	+	-	-	-	-	-
23	*P. funiculosum*	-	-	+	-	-	-	-	-	-
24	*P.verruuculosum*	-	+	-	-	-	-	-	+	-
25	*Peziza* sp.	+	+	-	+	-	-	-	+	-
26	*Phoma* sp.	-	-	+	-	-	+	-	-	-
27	*Pythium* sp.	+	-	-	+	+	-	-	-	+
28	*Phytophthora* sp.	-	+	+	-	-	+	+	-	-
29	*Rhizopus stolinifer*	+	+	+	+	+	+	+	+	+
30	*Sclerotium rolfasii*	+	-	+	+	+	-	+	-	-
31	*Trichoderma viridae*	-	-	+	-	-	-	-	-	-
32	*Rhizoctonia solani*	+	+	+	+	+	+	+	-	-
33	*Sterile mycelium*	+	+	+	+	-	+	+	+	-
	Total species	25	22	23	19	11	14	14	08	10

1 = *T. grandis*; (-) = Absent; 2 = *M. longifolia*; (+) = Present; 3 = *B. monosperma*

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