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Short Communication

Seed-Mycoflora of Some Forest Medicinal Plants of Nashik District, Maharashtra

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ABSTRACT

Twelve fungal species were isolated from the seeds of 13 forest medicinal plants. Most of the fungi were saprophytic and few were pathogenic. Fungi like *Mucor globosum, Mucor varienc* and *Rhizopus nigricans* appeared on the first day after plating the seeds in the plates. Maximum fungi were isolated on the seeds of *Holarrina antidisentrica* with lesser number on seeds of *Jatropha curcas* and *Caesalpinia bonducella*. Rich sporulation of all the fungi was observed from 6th day of incubation period.

Seed mycoflora isolated from the plants of deciduous forest of Nashik district, *Acacia catechu* (Khair), *Terminalia chebula* (Kalam), *Terminalia belirica* (Behada), *Mitragyna parviflora* (Kalam), *Semecarpus anacardium* (Bibba), *Cassia fistula* (Bahava), *Holarrhena antidyscenterica* (Dahikuda), *Sapindus laurifolius (*Ritha*), Ougenia dalbergioides* (Tivis), *Albizzia procera* (Kilai), *Caesalpinia bonducela* (Sagargota), *Caesalpinia sepiaria (Chilar)* and *Jatropha curcas* (Chandragol) showed variation in species and their intensity. In all 12 different fungal species were isolated. Seeds plated on Rose Bengal agar medium showed considerable influence on the incidence of seed-mycoflora. Such type of work on the seeds of forest plants has not been done previously in Nashik district but Khairnar (1987) has done same type of work on the seeds of Bajra. The present investigation is an attempt to study the seed mycoflora of forest tree plants of Nashik district.

The seed samples of different wild forest plants were collected from different places in deciduous forest of Nashik district during March to May 2011, and stored in polythene bags at room temperature for plating whenever required. Fungi associated with the seeds were isolated by blotter technique and agar plate method (ISTA 1966). Fifty seeds of each plant species were tested. Five seeds were plated in each Petri dish containing agar medium of sterilized moist blotter paper. Plates were incubated at room temperature (30 ± 2°C) and observations were recorded daily up to ten days.

Table 1: Incidence of seed mycoflora of some forest plants of Nashik district.

Name of fungal species	1	2	3	4	5	6	7	8	9	10	11	12	13
Aspergillus carbonarius	01	02	-	01	02	10	03	07	-	01	02	10	01
Aspergillus flavus	03	-	13	-	03	05	-	04	03	03	03	-	01
Aspergillus niger	01	-	-	03	09	06	03	01	02	-	01	01	02
Aspergillus terrus	-	-	-	-	02	-	-	-	-	-	-	-	-
Fusarium oxysporum	-	-	-	-	-	-	-	-	-	-	01	-	03
Mucor globosum	09	04	04	04	-	-	05	-	08	04	07	02	04
Mucor varienc	-	-	-	-	-	06	-	-	-	-	-	-	-
Pythium sp.	-	-	-	-	-		-	-	-	-	01	-	-
Rhizopus nigricans	-	-	-	-	-	-	-	-	08	-	03	-	-
Rhizoctonia soloni	-	-	-	-	-	-	-	-	-	-	02	-	-
Sclerotium rolfasi	-	-	-	-	-	-	-	-	-	-	01	-	-
Trichoderma viridae	-	-	-	-	-	03	-	-	-	-	-	-	-
Total number of fungi	04	02	02	03	04	05	03	03	04	03	09	03	05

1. *Acacia catechu* 2. *Jatropha curcas* 3. *Caesalpinia bonducella* 4. *Terminalia chebula* 5. *T. belerica* 6. *Mitragyna parvifolra* 7. *Caesalpinia sepiaria* 8. *Albizzia procera* 9. *Semecarpus anacardium* 10. *Cassia fistula* 11. *Holarrhena antidysentrica* 12. *Sapindus laurifolius* 13. *Ougenia dalbergioides*

Table 2: Effect of incubation period on percent incidence of fungi.

Name of fungal species	1	2	3	6	8	10	12
Aspergillus carbonarius	+	+	++	+++	+++	+++	+++
Aspergillus flavus	+	+	++	+++	+++	+++	+++
Aspergillus niger	+	+	++	+++	+++	+++	+++
Aspergillus terrus	-	+	++	+++	+++	+++	+++
Fusarium oxysporum	-	-	+	++	+++	+++	+++
Mucor globosum	+	++	+++	+++	+++	+++	+++
Mucor varienc	+	+	++	+++	+++	+++	+++
Pythium sp.	-	-	+	++	+++	+++	+++
Rhizopus nigricans	+	++	+++	+++	+++	+++	+++
Rhizoctonia soloni	-	-	+	+	++	++	+++
Sclerotium rolfasi	-	-	+	++	++	+++	+++
Trichoderma viridae	-	-	+	++	+++	+++	+++

+ : Growth appeared on seeds below 10%; ++ : Growth appeared on seeds above 10%; +++ : Rich sporulation

Results given in Table 1 show that less incidence of seed mycoflora was observed on all the seeds of forest plants. The incidence of saprophytic fungi is higher than pathogenic ones. Highest number of fungi was observed on the seeds of *Holarrina antidisintrica*, and lower number on the seeds of *Jatropha curcuas* and *Caesalpinia bonducella*. Low incidence of fungi occurs due to hard seed coat of all the seeds. Fungi can not penetrate their mycelium inside the seeds, thus unable to cause infection.

Table 2 shows some saprophytic fungi like *Mucor globosum, Mucor varienc, Rhizopus nigricans, Aspergillus carbonarius* and *A. niger* were appearing on 1st day after incubation. The member of Deuteromycetes and other fungi appeared after 3rd day of incubation period. Maximum sporulation of all the fungi was observed after 6th day of incubation period.

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REFERENCES

Khairnar, D.N. 1987. Studies on seed-borne fungi of Bajra. Ph.D. Thesis BAM University, Aurangabad.

ISTA 1966. International Seed Testing Association Proc., 3: 1-152.