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Studies on Foliicolous Microfungi from Amravati University Campus, Amravati, Maharashtra, India

Shilanand V. Hiwarale[1], Dilip V. Hande[2]
[1]Sant Gadge Baba Amravati University, Amravati, Maharashtra, India
[2]Shri Pundalik Maharaj Mahavidyalaya, Nandura, Buldhana , Maharashtra, India
Corresponding Author- Shilanand V. Hiwarale
Email: svhiwarale@gmail.com

Abstract:
Foliicolous fungi are an essential part of the ecosystem and should be thoroughly researched sincethey are essential to the emergence and control of plant diseases. To study the foliicolous fungi present study was carried out in regions of Amravati Maharashtra from June 2022 to August 2023.Twenty plant samples with various disease symptoms were collected and brought to the laboratoryand cultured on PDA media and kept one to two weeks for incubation. We found 8 genera and 10species of foliicolous fungi prominently *Alternaria, Bipolaris, Cercospora, Curvularia, Dreschlaria, Fusarium* etc. The fungal samples were identified with the help of standard monographs and online databases.

Keywords: foliicolous fungi, Amravati, University campus, identification

Introduction:

Sant Gadge Baba Amravati University, formerly Amravati University, located at Amravati in the Vidarbha region of the state of Maharashtra, India with 480 acres campus. This campus is with diverse vegetation and habitats having huge potential for the growth and explorations of fungal diversity. Since foliicolous fungi are crucial to the appearance and management of plant diseases, they should be thoroughly studied as an integral element of the ecosystem. It is possible for facultative or obligatory parasitic fungus to exist in both favorable and adverse environments. These produce diseases by infecting leaves of various plants from both sides and exhibiting symptoms including leaf spots, hypertrophy, canker, die-back, etc. Shade and decorative trees are most commonly affected by leaf spots, a disease that not only damages the tree but also lowersits value. Though the surface of leaf provide a hostile environment for fungal growth, where interesting interactions occur betweenleaf and fungi (Andrews & Harris 2000). Kinkel (1997) reported that a thin nutrient film deposited from the atmosphere on the leaf surface further facilitates the microbial colonization for growing plants make new surfaces available for fungi. The richness of fungi varry according to biotic and abiotic limitations (Iara F. Santiago *et.al.,* 2018). Over 95% of the diversity of fungi is still unknown, andthose that have been identified lack scientificnames. Hibbett (2016). Keeping this view in mind, present study has been conducted in Amravati University campus during from June 2022 to August 2023.

Material and Methods:

Plant leaves with various disease symptoms were collected in the separate paper bags. The herbarium of samples were made by pressing and dried in blotting paper and the papers were changed after short interval of time till the specimens were completely pressed and dried. The infected samples were further processed by microscopic investigations, which involved hand sections and preparation of the slides has been done in a drop of Lacto phenol, Cotton blue and glycerine (Dubey *et.al.,* 2019). In the laboratory,nail polish techniques were used to study the structural and morphological characters of fungi (Hosagouder and Kapoor, 1984). The infected part of leaves were also cultured on PDA media and kept one to two weeks for incubation or sporulation. The fungal samples were observed under compound microscope and identified with the help of standard monographs and online databases.

Results and Discussion:

The extensive survey of foliicolous fungi was carried out from June 2022 to august 2023 in Sant Gadge Baba Amravati University, Amravati campus. The foliicolous fungus with respective hosts and family is enumerated in Table 1. Table 1 reveals that there are twenty angiospermic host plants representing nine families infected by ten fungal species representing eight fungal genera. Several hosts are being reported to be infected with same fungi. Few fungi have been found infects to two or three different host (Kumar A and Mall, TP., 2013). All the fungal genera can be divided into some categories viz. *Alternaria* represented by two fungal species where as *Fusarium* by two species, *Bipolaris, Cercospora, Cladosporium, Colletotrichum Curvularia, Drechslera* by one

species each. The nine families of angiospermic hosts can also be categorized into some groups. Members of Fabaceae (*Bauhinia variegata* (L.), *Cassia fistula* (L.), *Bauhinia variegata* (L.), *Saraca asoca* (Roxb), *Acacia arabica* (L.) Willd. *Acacia arabica* (L.) Willd. *Dalbergia sissoo* Roxb. And *Casia tora* (L.) Roxb.) are most susceptible to be infected by five fungal species followed by Apocynaceae (*Alstonia scholaris* (L.), *Plumeria alba* (L.), and *Catharanthus roseus* (L) G.Don) by three species; Moraceae (*Ficus benghalensis* (L.) and Ficus religiosa (L.)) and Myrtaceae (*Syzygium cumini* (L.) Skeels., and *Eucalyptus globules* Labill.) by two; Bignoniaceae (*Tecoma stans* (L.) Juss. ex Kunth.), Meliaceae (*Azadirachta indica* A.Juss.), Poaceae (*Bambusa vulgaris* Schrad), Sapotaceae (*Mimusops elengi* (L.)) and Verbenaceae (*Lantena camera* (L.)) are being infected by single fungal species each.

Conclusion:

Fungal species infecting to the host plants severely which is a situation of challenge for humans so for as the health of the host plant like decreasing rate of photosynthesis, other metabolic activities and quality of their products.

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Table 1: List of Foliicolous Fungi and their Host with family collected from Amravati University campus

Sr. No.	Fungus	Host	Host family
1	*Alternaria alternata*	*Tecoma stans* (L.) Juss. ex Kunth.	Bignoniaceae
2	*Alternaria alternata*	*Mimusops elengi* (L.)	Sapotaceae
3	*Alternaria* spp.	*Bauhinia variegata* (L.)	Fabaceae
4	*Alternaria* spp.	*Ficus benghalensis* (L.)	Moraceae
5	*Bipolaris* spp.	*Cassia fistula* (L.)	Fabaceae
6	*Bipolaris* spp.	*Bauhinia variegata* (L.)	Fabaceae
7	*Bipolaris* spp.	*Saraca asoca* (Roxb)	Fabaceae
8	*Cercospora* spp.	*Acacia arabica* (L.) Willd.	Fabaceae
9	*Cercospora* spp.	*Azadirachta indica* A.Juss.	Meliaceae
10	*Cladosporium* spp.	*Bambusa vulgaris* Schrad.	Poaceae
11	*Cladosporium* spp.	*Cynodon dactylon* (L.) Pers.	Poaceae
12	*Colletotrichum* spp.	*Syzygium cumini* (L.) Skeels.	Myrtaceae
13	*Curvularia* spp.	*Alstonia scholaris* (L.)	Apocynaceae
14	*Curvularia* spp.	*Ficus religiosa* (L.)	Moraceae
15	*Drechslera* spp.	*Plumeria alba* (L.)	Apocynaceae
16	*Drechslera* spp.	*Dalbergia sissoo* Roxb.	Fabaceae
17	*Drechslera* spp.	*Eucalyptus globules* Labill.	Myrtaceae
18	*Drechslera* spp.	*Lantena camera* (L.)	Verbenaceae
19	*Fusarium* spp.	*Casia tora* (L.) Roxb.	Fabaceae
20	*Fusarium oxysporium*	*Catharanthus roseus* (L) G.Don	Apocynaceae

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