



DIVERSITY OF CERCOSPOROID FUNGI OF THE FOREST OF JALGAON DISTRICT WITH THEIR PATHOLOGICAL IMPORTANCE

S. A. Firdousi

H. J. Thim College of Arts and Science, Mehrun, Jalgaon (M.S.), India.

E-mail : shakeel.talk@gmail.com

Abstract

A frequent extensive and intensive survey was conducted in the forests, fields, plantations and nurseries of Jalgaon district in order to collect phytopathogenic and follicolous fungi. About 5 genera were found in the different plant trees of the district. These genera are – *Pseudocercospora*, *Cercospora*, *Stigmina*, *Scoleco stigmina*, *Passlora* and *Sirosporium*. They caused different type of pathological symptoms like necrosis, brown spots, black spots and shot hole formation. Most of the disease symptoms starts during the rainy season and continue upto February-March. Some of the disease prolong December-January. They cause serious disease and responsible for pre-mature defoliation.

Key words : *Pseudocercospora*, *Cercospora*, *Stigmina*, *Scoleco stigmina*, *Passlora* and *Sirosporium*, necrosis, brown spots, black spots and shot hole formation.

Introduction

The forest of Jalgaon is a tropical, dry, deciduous types. The vegetation varies with the changes in altitudes aspect and rainfall. There are various subtypes of the forest in the area. In the Manudevi forest, there are a number of the parasitic fungi causing various types of the foliage diseases in the forest tress in this area.

This geographical area of Jalgaon is 11765 sq.kms and the total forest lies on the Satpuda range in The Jalgaon district. It is about 60 kms away from the Jalgaon city. It is in continuation with Pal wild life sanctuary. The forest is tropical dry deciduous and have various trees, shrubs and herbs (table 1).

Study site

Manu Devi Forest, Pal Forest, Yawal Forest, Chopda Forest, Scrubbed forest around Jalgaon.

Materials and Methods

In order to collect the follicolous and phytopathogenic fungi of the forest of Jalgaon district a frequent survey was conducted into different sites like Manudevi Forest, Pal Forest, Scrubbed Forest, Yawal Forest, Nurseries, Plantation, Garden and Road Side Plantations. In the field

the symptomology and other information such as place of collection, locality, local names of the plant and date of collections were noted. Scrap mount were prepared from infected portion in lactofuschin and glycerine and lactophenol and cotton blue. Free hand section were also made when needed. Some infected leaves or other suitable parts of selected specimen were preserved in F.A.A. for further use. Microscopic studies were made. The Fungi has been described and identified with the help of various monographs, reviews, authentic books, research papers published in the standard journals.

Identification

The fungal pathogens with have been described were identified with the help of various monographs, reviews, authoritative books and research papers published in the standard Journals. The detailed taxonomic studies of Hyphomycetes have been carried out with the help of "Monographs" including mainly the genus *Cercospora* (Chupp, 1953), "Indian Corcosporae" (Vasudeva, 1962), "Dematiaceous" (Ellis, 1971, 1976), "Hyphomycetes" (Subramanian, 1971), "The Fungi", (Ainsworth *et al.*, (1973 a) and several mycological papers" (Deighton, 1967 a, 1973, 1974, 1976a, 1979; Sutton 1973, 1975).

Table 1 :

S. no.	Genera	Generic characters
1.	<i>Cercospora</i>	Conidia Acicularsclolecosporous, obclavate, hyaline conidio prominent. There is a clear scar on the conidogenesis cells. Cause serious leaf spot disease.
2.	<i>Passlora</i>	Usually phytopathogenic causing leaf spot. Stroma absent or well developed. Conidiophore solitary macronematous unbranched, sub hyaline, two pigmented. Conidigenous loci consticous. Conidia solitary to Catenate.
3.	<i>Pseudocercospora</i>	Symptom less or almost so. But usually forming distinct leaflesin. Mycellia, superficial, branched, conodiophore solitary arising from superficial hyphae, pale olibacous to medium dark brown, smooth Conidigenous cell, loci un-thickened and not darkened. Conidia solitary are catenate pigmented hyla un-thickened. Not darkened.
4.	<i>Sirosporium</i>	Colonies puncteforme effuse Olivaceous, reddish brown or dark black. Conodiophore macronematous Conidigenous cell, polyblastic integrated terminal on stipe, terminal and branched. Conidia solitary, dry, acropleurogenus, simple, state and flexous.
5.	<i>Scolecospora</i>	Sprodochia immersed, conodiophore, numruous, densely arranged arising from conidogenous cells. Conidia solitary, formation, holoblastic, scolecosporus usually sub-cylindrical obclavate.
6.	<i>Stigmata</i>	Cikibues follicolous mycelium internal, mycelium hyaline to brown septate hyphae. Conodiomata superficial, dry, produced in gelatinous matrix, punctiform to applantae, Conodiophore absent or micronematus conidia apical, dry, cylindrical, Schizolytic.

Table 2 :

S. no.	Host	Fungi	Symptoms	Locality	Period
1	<i>Adina cordifolia</i>	<i>Cercospora adinae</i> .	Brown Spot	Manudevi forest	Sept. to Jan.
2	<i>Agleis marmelos</i>	<i>Cercospora</i>	Black spot	Farmer's Field around jalgaon	Oct. to Jan.
3	<i>Albizia lebbek</i>	<i>Cercospora appi</i>	Black spot	Road side plantation	Jan to Mar
4.	<i>Ficus hispida</i>	<i>Cercospora annulata</i> cook	Leaf spot	Chopda forest	Aug. to Jan
5.	<i>Butea monosperma</i>	<i>Cercospora buteae</i>	Brown spot surrounded by yellow region	Pal forest	Sept. to Jan
6.	<i>Cieba pentendra</i>	<i>Cercospora ceibae</i> . Chupp and Viegas	Leaf spot	Yawal forest	Aug to Dec.
7.	<i>Dios pyros</i> sp.	<i>Cercospora dios pricola</i>	Black spots	Manudevi	Oct. to Feb
8.	<i>Miliusa</i> sp.	<i>Passalora annona cearum</i>	Brown	Yawal forest	Sept. to Jan
9	<i>Bambusa nutans</i>	<i>Passalora bambusae</i> (Cook)	Black spot	Plantations	Aug to Jan
10	<i>Bauhinia varigeta</i>	<i>Passalora bauhinigena</i>	Brown spot	Road Side plantations	Aug. to Feb.
11.	<i>Butea monosperma</i>	<i>Passalora buteae</i>	Black spot	Chopda forest	Aug to Dec.
12.	<i>Cordia mixa</i>	<i>Passalora cordiae</i>	Brown Spot	Manudevi	Sept to Feb.
13.	<i>Dalbergia sissoo</i>	<i>Passalora dalbergiae</i>	Brown spot	Pal forest	Oct to Feb
14.	<i>Erythirinae indica</i>	<i>Passalora eupatorii</i>	Brown spot to shot hole formation	scrubbed forest around Jalgaon	Sept. to Jan
15.	<i>Gliricidia maculate</i>	<i>Passalora gliricidiae</i>	Brown spot	Road Side plantations	Aug. to Jan
16.	<i>Grvia asitica</i>	<i>Passalora grviae</i>	Brown spot	Manudevi Forest	Aug. to Jan
17.	<i>Anogussus accuminata</i>	<i>Pseudocercospora accuminatae</i>	Brown spot to shot hole formation	Manudevi Forest	July to Dec.

Table 2 continued....

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18.	<i>Adina cordifolia</i>	<i>Pseudocercospora adinae</i>	Brown spot	Manudevi Forest	Oct. to Jan
19	<i>Annona squamosa</i>	<i>Pseudocercospora annonae</i>	Black spot	Scrubbed forest	July to Dec
20	<i>Anogeissus latifolia</i>	<i>Pseudocercospora anogeissia</i>	Brown spot	Manudevi Forest	Sept. to Jan.
21.	<i>Terminalia arjuna</i>	<i>Pseudocercospora arjunae</i>	Shot hole	Manudevi forest near river	July to Dec.
22.	<i>Bambusa</i> sp. bambusae	<i>Pseudocercospora</i>	Brown	Yawal Forest	July to Dec.
23.	<i>Bauhinia varigeta</i>	<i>Pseudocercospora bauhiniana</i>	Brown spot	Yawal forest	July to Dec.
24.	<i>Bridelia retusa</i>	<i>Pseudocercospora brideligena</i>	Shot hole	Scrubbed forest around Jalgaon	Aug. to Jan
25.	<i>Buchanania lanzen</i>	<i>Pseudocercospora buchanaia</i>	Black spot	Manudevi forest	Sept to Jan.
26.	<i>Butea monosperma</i>	<i>Pseudocercospora buteae</i>	Black spot	Pal forest	Aug. to Jan
27.	<i>Chlorosylon swietenia</i>	<i>Pseudocercospora chlorosylica</i>	Black spot	Yawal forest	Sept. to Jan.
28	<i>Ficus</i> sp.	<i>Pseudocercospora ficola</i>	Brown spot	Manudevi forest	Aug. to Jan
29.	<i>Gymnosporia spinosa</i>	<i>Pseudocercospora gymnosporiae</i>	Brown spot and necrosis	Scrubbed forest around Jalgaon	Jul. to Dec.
30.	<i>Cassia fistula</i>	<i>Sirosporium plurisepta</i>	Black spot	Pal forest	Sept to Jan
31.	<i>Ziziphus xylopora</i>	<i>Sirosporium xylopyri</i>	Black spot	Yawal forest	Oct to Jan
32.	<i>Mangifera indica</i>	<i>Scolecostigmina mangifera</i>	Black spot	Farmer's field around Jalgaon	Sept to Jan.
33	<i>Diospyrosus meloxylon</i>	<i>Scolecostigmina diospyrosis</i>	Black spot	Pal forest	Aug. to Jan
32	<i>Ficus benghalensis</i>	<i>Scolecostigmina macaulata</i>	Brown spot	Yawal forest	Jul to Dec.
33	<i>Bauhinia varigeta</i>	<i>Scolecostigmina phaecorpae</i>	Brown spot	Manudevi forest	Sept to Jan
34.	<i>Ouegenia oogenessus</i>	<i>Stigmina delberoduneisis</i>	Black spot	Pal forest	Sept. to Jan
35.	<i>Dendrocalmus</i> sp.	<i>Stigmina dendrocalmi</i>	Black spot	Yawal forest plantations	Aug to Jan
36.	<i>Diospyrosus meloxylon</i>	<i>Stigmina diospyri</i>	Black spot	Manudevi forest	Aug. to Feb.
37	<i>Erytherina indica</i>	<i>Stigmina erythrinae</i>	Brown spot	Pal forest	Aug. to Jan
38	<i>Tamarinds indica</i>	<i>Stigmina tamarandi</i>	Leaf spot	Scrubbed forest around Jalgaon	Sept to Jan.
39	<i>Terminalia arjuna</i>	<i>Stigmina terminalliae</i>	Black spot	Yawal forest Near river	Sept to Feb.

Conclusion

During the study, four study sites were thoroughly surveyed and studied about 39 fungal disease were collected and studied. Among the Phytopathogenic fungi, i.e. *Cerco spora*, *Passlora*, *Pseudocercospora*, *Siro sporium*, *Scolecostigmina*, *Stigmina* were very common. Seven sp. of *Cercospora*, 6 Sp. of *Passlora*, 10 sp. of *Pseudocercospora*, 2 sp. of *Siro sporium*, 4 sp. of *Scolecostigmina*, 4 sp. of *Stigmina* were found as phytopathogenic. These are the first survey report of follicolous fungi from the forest of Jalgaon. Most common symptoms are black spot brown spot shot hole.

These disease are found after rainy season at the end of winter season.

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