Status of Susceptible Host for Foliicolous Fungi from North Terai Forests of (Uttar Pradesh) India

[1*]T.P. Mall, [2] D.P. Singh, [3*]Ajay Kumar and [4]Sangeeta Sahani

Department of Botany, Kisan P. G. College, Bahraich – 271 801, U. P, India.

[1*]drtpmall@rediffmail.com, [2]drdpsinghfungi@gmail.com,

[3*]ajay.botany1988@gmail.com, [4]sahanisangeeta0@gmail.com

Abstract

The present report elucidates a rich and unique profile of mycobial as well as phytodiversity of research area surveyed with two hundred four angiospermic host plant species representing one hundred fifty two genera of sixty three different families being parasitized by two hundred thirty seven fungi representing sixty three genera. The survey and documentation has resulted more than twenty one new host records and twenty three new fungal species to Indian mycoflora.

Keywords: Foliicolous fungi, Susceptible Hosts Status, North Terai Forest, U.P.

1. Introduction

Plant leaves provide a very suitable habitat for the growth & development of fungal pathogen by providing ample surface area and nutrient supply. Such leaf inhabiting fungi are known as foliicolous fungi and the invaded area of the leaf appears as leaf spot or leaf lesion. The weed and forest plants serve as reservoir of leaf spot pathogen which on getting opportunity may spread to agricultural and horticultural plants.

World constitute twenty mega diversity countries in which warm tropical region between the tropic of cancer and tropic of capricorn on either side of the equator (between $23^{½°}$N and $23^{½°}$ S around the globe) have since long provided the most suitable habitat for living organisms with a rich and diverse plant, animal and microbial life forms. The twelve mega diversity countries constitute about 65% of the total biodiversity.

India is one of the twelve mega diversity countries of the world has two of the worlds eighteen biodiversity hot spots located in the Western Ghat and in the Eastern Himalayas. In north Terai Forests, the Himalayas rise as a virtual wall beyond the snow line. Above the alluvial plain lies the Terai strips, a seasonally marshy zone of sand & clay soils. The Terai has higher rainfall than the plains and the downward-rushing rivers of the Himalayas show down and spread out in the flatter terai zone depositing fertile silt and reproductive means during the mansoon season and receding in the dry season. The Terai, as a result has high water level and is characterized by moist sub tropical conditions and a luxuriant turn-over of green vegetation all the year around. The climatological and topographical conditions favour the luxuriant growth & development of foliar fungi. This North-Terai region of U.P. is next only to Eastern and Western Ghats as one of the hottest spots for biodiversity in general and the diversity of fungal organism inhabiting plant leaves in particular offers an ideal opportunity for the taxonomic exploration of fungal organism in general and foliicolous fungi in particular . The Foliicolous Fungi causes huge losses every year in different parts of world. The fungal pathogens producing leaf spots infect a large variety of hosts including most of the crops, forests and other plants. The destruction caused by these enemies of leaves is a serious problem before us. The focus of this research is identification & documentation of foliicolus fungi which will assist in the discovery of new fungicides and ideas to overcome from the severity of these enemies of nature as well as in the protection of floral diversity from the infection of these pathogens and also in the conservation of valuable flora of the area. Keeping this in view the authors surveyed the North Western Terai forests of U.P. which include East & West Sohelwa, Shrawasti, Bahraich forest division, Katarniaghat Wildlife Sanctuary, Dudhwa tiger Reserve, Kishanpur Wildlife Sanctuary and Pilibhit Forest Division during July, 2006 to September, 2011.

2. Materials and Methods

During collection, infected leaf samples were taken in separate polythene bags. Suitable mounts of surface scrapping and hand cut sections were prepared from infected portions of the leaf samples. Slides prepared in cotton blue lactophenol mixture were examined and camera lucida drawing were made which seems to be new as described by Verma *et al*., 2008. Morphotaxonomic determinations of taxa were done with the help of current literature and resident expertise available. All the fungal taxon were identified after making microscopic preparations and later confirmed by Prof. Kamal, Emeritus Scientist (DST), DDU Gorakhpur University, Gorakhpur. The fungal Holotype specimen has been deposited in HCIO, IARI, New Delhi. References given in the text has also been provided with their wave links which are available.

3. Result and Discussion

The authors surveyed periodically the very diversified habitat of North Western Terai Region of Uttar Pradesh during July, 2006 to September, 2011 so as to collect and document foliicolous fungi. The author collected two hundred four angiospermic host plant species representing one hundred fifty two genera belonging to sixty three different families being parasitized by two hundred thirty seven fungal species representing sixty three fungal genera. The host plants and their parasites are enumerated below.

Table.1 *List of Hosts with their respective Foliicolous Fungi*

S. No.	Name of the family & Host	Name of the fungus	**
1.	Acanthaceae Justicia sp. Linn.	Cercospora justicicola Tai.	31
2.	Alismaceae Sagittaria sagittifolia Linn.	Alternaria bahraichensis sp. nov.	20
3.	Amaranthaceae	Alternaria Nees. sp.	01
	Achyranthes aspera Linn.	Cercospora achiyranthina Thrim. & Chupp.	20
		Stenella Syd. sp.	36
	Alternentha sp. Forsk.	Pseudocercospora alternantherae Yen. Kar. & Das	11 23
	Aerva sp. Linn.	Stenella Syd. sp.	
4.	Anacardiaceae	Ascochyta mangiferae Batista	17
		Meliola rhois Henn.	20
	Mangifera indica Linn.	Periconia Tode sp.	01
		Sooty mold	17
5.	Annonaceae	Asteromella Coelo. sp.	19
	Annona squamosa Linn.	Cercospora Fres. sp.	27
	Miliusa tomentosa H. & F.	Pseudocercospora miliusae M. D. Mehrotra & R. K. Verma	11
6.	Apocynaceae	Alternaria ichnocarpicola sp. nov.	11
	Ichnocarpus frutescens (Linn.) R.Br.	Alternaria Nees. sp.	19
		Cercospora sp. Fres.	19
		Corynespora ichnocarpii sp. nov.	20
	Carissa carandus Linn.	Meliola frutiscentis Hosag et al.	19
		Pseudocercospora apocynacearum B. K. Gupta & Kamal	21
	Carissa congesta Weight.		
	Holarrhena antidysentrica Wall.	Corynespora carissae sp. nov.	20
		Pseudocercospora carissae B. B. Singh & P. Mukerjee	11
	Alstonia scholaris R. Br.		
		Sirosporium sp. Bubak & Serebrian	21

		Discosia hiptages Tilak.	19
		Glomerella cingulata (Stonem) Spauld & Shrenk	02
		Periconia byssoides Pers. Stenella sp. Syd.	01 26
	Araceae	Colleotricum dematium (Pers. ex. Fr.) Grove	17
7.	Colocasia esculenta Linn.	Drechslera colocaceae Tandan & Bhargava	19
	Asclepiadaceae	Alternaria aternata (Fr.) Keissler.	20
8.	Calotropis procera R. Br.	Passalora sp. Fr. et. Mont.	22
	Calotropis gigentia R. Br.	Alternaria aternata (Fr.) Keissler.	17
	Asparagaceae	Alternaria sp. Nees.	17
9.	Dracaena marginiata Linn.	Asterina sp. Lev.	18
		Stenella sp. Syd.	17
	Asteraceae	Alternaria carthami Chawdhury et al.	19
	Canthemus tinctorius Linn.	Alternaria tejensis sp. nov.	20
	Eupatorium cannabinum Linn.	Alternaria sp. Nees.	01
		Corynespora sp. Gissow.	11
	Parthenium hysterophorus Linn.	Leptoxyphium sp. Speg.	01
	Ageratum conyzoides Linn.	Passalora sp. Fr. et. Mont.	22
		Alternaria zinniae Ellis Pape.	01
	Sphaeranthus indicus Linn.	Alternaria sp. Nees.	20
10.		Alternaria sp. Nees.	09
	Xanthium strumarium Linn.	Cercospora sphaeranthi Patil	21
	Elephantopus scaben Linn.	Cercospora neosphoeranthia Bhartiya N.	20
	Spilanthes echmella Hook f.	Kumari & P. N. Singh	17
	Chrysanthamum roseum Linn.	Cercospora xanthicola Heald. & Worf.	19
	Echinopus sp. Linn.	Pseudocercospora sp. Speg.	23
	Tridex sp. Linn.	Corynespora elephantopii sp. nov.	36
		Oidium spilanthedis Link. ex. Fr.	11
		Pseudocercospora sp. Speg.	01
		Puccinia pulvinata Rabenn.	36
		Stenella sp. Syd.	
	Basellaceae	Macrophomina phaseolina (Tass) Goia.	02
11.	Basella alba Linn.	Selerotium relfsii Sacc.	01
	Baringtonaceae	Phomopsis barringtoniae Kamal & Singh	11
12.	Barringtonia acutangula Gaertn.		
	Bignoniaceae	Leptoxyphium sp. Speg.	11
	Haplophragma adenophyllum (Wall) P. Dop.	Mycovellosiella haplophragmatis Kamal & Singh	21 17
13.		Oidium sp. Link. ex. Fr.	23
	Heterophragma sp. Linn.	Passalora sp. Fr. et. Mont.	27
		Phoma sp. Desm.	01
		Pseudocercospora sp. Speg.	
	Boraginaceae	Alternaria tenuis Nees.	10
	Cordea mixa H.S.K.	Leptoxyphium sp. Speg.	11
14.	Heleotropium indicum Linn.	Meliola eugeniae jamboloidis Hansf.	09
		Oidium sp. Link. ex. Fr.	11
	Cordia dichotoma Forst.	Phaeoramularia cordiae Kumar & Kamal	10
	Cordia creanata Delile Fl.	Stenella myxa J. E. Gray	36

15.	Brassicaceae Raphnus sativus Linn. Lunaria annum Linn. Brassica compestris Linn. Brassica oleracea var. capitata Linn. Brassica oleracea Linn	Alternaria raphani Groves. & Skolko Alternaria sp. Nees. Curvularia lunata (Walker) Bold. Rhizoctonia solani Kiihn. Sclerotinia sclertiarum (Linn.) Bac.	23 17 24 19 22
16.	Burseraceae Commiphora macrophylla Jacq	Asterina sp. Lev. Phoma sp. Desm. Pseudocercospora sp. Speg.	20 27 32
17.	Caesalpiniaceae Cassia tora Linn. Cassia fistula Linn.	Pseudocercospora cassiae S. K. Singh & Bhalla Stenella cassiicola Seema Mishra, A. K. Srivast. & Kamal	11 11
18.	Capparidaceae Capparis horrida Linn.	Asterina sp. Lev.	02
19.	Cannabinaceae Cannabis sativa Linn.	Phomopsis cannabina Curzi Pseudocercospora cannabina (Wakef.)	17 36
20.	Caricaceae Carica papaya Linn.	Corynespora sp. Gissow. Oidium caricae Noack. Sirosporium sp. Bubak & Scrab.	23 17 17
21.	Celastraceae Celastrus peniculatus Willd. Hippocratea sp. Linn.	Corynespora celostricola sp. nov. Stenella celastri A. N. Rai & Kamal Stenella hippocratiae Srivastava et al.	20 11 33
22.	Chenopodiaceae Spinacia oleracia Linn. Chenopodium album Linn.	Alternaria aternata (Fr.) Keissler. Rhizoctonia solani Kiihn. Pernospora parasitica (Pers.)	21 19 22
23.	Combretaceae Terminalia arjuna W. & A. Terminalia tomentosa W & A.	Cercospora sp. Fres. Corynespora tomenticola sp. nov	31 20
24.	Convolvulaceae Ipomoea fistulosa Linn.	Cercospora ipomoeae Wint. Cladosporium sp. Link. Periconia sp. Tode Stenella sp. Syd.	20 22 22 11
25.	Cornaceae Alangium salvifolium (Linn.f.) Wang.	Phyllosticta alangii Hasija.	24
26.	Cucurbitaceae Luffa acutangula (L.) Roxb. Cucurbita maxima Linn. Momordica charantia Roxb. Lagenaria siceraria (Mol.) Standl. Lagenaria vulgaris Ser. Coccinia indica W. & A. Trichoxanthes dioica Roxb.	Alternaria aternata (Fr.) Keissler. Cercospora citrullina Cook. Leveillula taurica (Lev.) Arnaud Cercospora momordica Mc. Rai. Cladosporium cucumerinum Ellis & Arth Curvularia verruculosa Ellis. Glomerella cingulata (Stonem) Spauld & Shrenk. Oidium sp. Link. ex. Fr. Pseudocercospora lagerstroemiiyenna Gon. & Hsien.	01 21 21 11 21 24 19 01 33
27.	Cycadaceae Cycas circinalis Linn.	Alternaria sp. Nees. Drechslera monoceros Subram . Jain. Sphaeropsis cycadis Mundkar & Ahmad Stenella sp. Syd.	17 17 17 17

28.	Cyperaceae Typha sp. Linn.	Meliola sp. Fr.	22
29.	Dipterocarpaceae Shorea robusta Gorten. f.	Ceratophorum helicosporum Sacc. Mycovellosiella sp. Rangel. Pseudocercospora shoreae (Thirum & Chupp) Deighton	31 31 10
30.	Ebenaceae Diospyros tomentosa Roxb. Diospyros abrms Yurk. Diospyros melanoxylon Roxb.	Aecidum rhyismoideum Berk. & Br. Cercospora kaki Ell. & Ev. Diatrypella quercina (Ces. & De Not.) Sac. Trichothecium roseum Link. Leptoxyphium sp. Speg. Pseudocercospora kelleri (Earle) Deight Sarcinella gorakhpurensis Kamal & R. P. Singh	11 11 02 02 11 09 10
31.	Euphorbiaceae Codiaeum variegatum Bl. & Hort . Spiral, Small and Narrow leaf Croton. Mallotus philippensis Muell. Arg. Euphorbia pulcherrima Wild ex. Klotz. Putranjiva roxburghii Wall. Croton roxburghii Bat. Jatropha baladona Linn. Euphorbia hirta Linn. Bridilia stipularis Blum.	Alternaria aternata (Fr.) Keissler. Alternaria kamalella sp. nov. Corynespora sp. Gissow. Glomerella cingulata (Stonem) Spauld & Shrenk. Mycovellosiella malloti Bhalla et al. Pestalotiopsis palmarum(Cke.) Stey. Phoma malloti Desm. Zygisporium sp. Mont. Alternaria tenuissisma (Kunz ex. Pers.) Wittshire Phyllactinia sub-spiralis Lev. Cercospora putranjivae Khan. Cladosporium sp. Link. Corynespora bahraichiana sp. nov. Phoma sp. Desm. Pseudocercospora sp. Speg. Stenella brideliicola Srivastava et al.	18 24 19 20 09 10 24 11 02 20 20 01 17 17 31
	Fabaceae Bauhinia vahlii W. & A. Prod. Dalbergia sissoo Roxb. Cassia fistula Linn. Dolichos lablab Linn. Lynos. Medicago sativa Linn. Flemingia bracheata Roxb. Albizia lebbek Benth. Pongamia pinnata Vent. Acasia bipar Linn. Inga edulcis (Roxb.) Kurtz. Butea frondosa Koen. ex. Roxb. Bauhinia varigata Linn. Desmodium pulchellum Benth ex.	Alternaria bauhinia sp.nov. Alternaria bauhinia Singh and Mall Corynespora sp. Gissow. Alternaria delbergicola Nees. Phoma nivea (Syd.) Majumdar et al. Phyllactinea sp. Lev. Alternaria tenuis Nees. Cercospora dolchi. Ellis & Ev. Phoma herbarum West. Pseudocercospora dolichi Ell & Ev. Cercospora sp. Fres. Cercospora sp. Fres. Carynospora albizicola Sharma et al. Corynespora pongamcola sp. nov. Fusicladium pongamiae Syd. Corynespora sp. Gissow. Diatrype disciformis Kar & Maity	19 20 21, 22 36 36 17 11 17 24 23 20 20 19 02 02 02 02

32.	Desmodium trifolium DC.	Haplosporella baumontina Ahmad.	01
	Bauhinia racemosa Lamk.	Leptoxyphium buteae Speg.	17
	Bauhinia purpurea Linn.	Leptoxyphium buteae Speg.	21
		Stenella buteae Mishra et al.	21
		Macrophomina phaseolina (Tass) Goia	22
		Mycovellosiella sp. Rangel.	17
	Acacia concinna Wall.	Oidium sp. Link. ex. Fr.	02
	Cassia occidentelis Linn.	Pestolotia lambertiae Petr.	19
		Phoma sp. Desm.	27
		Phoma sp. Desm.	28
	Millettia sp. W. & A. Fl. Brit.	Phomopsis bauhiniae Bansa Alealdi	20
	Mellettia ovalia W. & A. Fl.	Pseudocercospora acaciae Kamal & R. P. Singh	17
		Pseudocercospora nigricans Cooke.	01
		Septori sp. Sacc.	20
		Pseudocercospora sp. Speg.	
		Stenella millettiae R.K. Chaudhary, Tripathi, P.N. Singh & S. Chaudhary	26
33.	Flacoutiaceae	Meliola flacourticola sp. nov.	37
	Flacourtia indica Merrill		
	Lamiaceae	Alternaria sp. Nees.	19
	Ocimum sanctum Linn.	Cercospora ocimicola Petrak & Ciferri	17
34.		Cercospora neptae Trehan	19
	Nepta hindostana (Roth.) Hains.	Meliola sp. Fr.	02
	Ocimum basillicum Benth.		
	Lauraceae	Alternaria longipes (Ellis. & Ev.) Mason	11
	Litsea chinensis Lamk.	Asteromella sp. Coelo.	02
		Asteromella sp. Coelo.	10
	Litsea sp. Lour.	Fuligomyces indica Khan & Kamal	11
		Fuligomyces indica Khan & Kamal	31
	Litsea polyanthus Juss.	Mycovellosiella litseae Munjal & Kulshreshtha	21
	Litsea glutinosa (Lour.) C.R. Robinson	Phomopsis litseae Kamal & R. P. Singh	17
			27
		Corynespora sp. Gissow.	33
35.	Litsea albernaria Lour.	Phoma sp. Desm.	10
		Diatrype citricola Ellis & Ev.	21
		Mycovellosiella litseae Munjal & Kulshreshtha	22
		Pseudocercospora litseae (A. N. Rai, B. Raj & Kamal) U. Braun	33
		Stenella litseae sp. nov.	27
		Phoma sp. Desm.	
	Lecythidaceae	Acrodictys sp. Ellis.	11
	Barringtonia acutangula Gaertn.	Pestalotiopsis sp. Steyaert.	26
36.		Zygosporium echnosporum Mont.	02
	Careya arborea Roxb.		
	Lytheraceae	Alternaria aternata (Fr.) Keissler.	33
37.	Lagerstroemia parviflora Roxb.	Cercospora lythracearum Heald & Wolf.	11
	Malvaceae	Alternaria dianthi Stev. & Hall.	01
	Hibiscus mutabilis Linn.	Alternaria longipes (Ellis. & Ev.) Mason	01

	Hibiscus rosa-sinensis Linn.	Microxphium fagi (Pers.) Hughs.	20
38.		Cercospora sp. Fres.	33
	Abutilon indicum Sweet. Hort.	Phomopsis abutilonis M C. Rai.	11
	Sida rhombifolia Linn.	Oidium sp. Link. ex. Fr.	11
	Meliaceae	Acremonium sp. Link.	11
	Toona ciliata Roem.	Alternaria aternata (Fr.) Keissler.	23
39.		Stenella sp. Syd.	27
	Azadirachta indica A Juss.	Oidium azadirachtae Narayan & Ramakr.	17
		Septoria sp. Sacc.	17
	Menispermaceae	Acrodictys sp. Ellis.	01, 19
	Tinospora malaverica Miers.	Acremonium moniformae Fr.	11
		Phoma sp. Desm.	10
40.	Tiliocora acuminate (Lam) Miers.	Stenella sp. Syd.	11
	Teliocorpa sp. (Hook f.)	Acremonium zonatum Gams.	11
	Tinospora cordifolia Willd.	Colleotrichum capsici Butter & Bisby	21
	Tinospora sp. Linn.	Pseudocercospora cocculi (Syd.) Deight	19
	Menispermum canadense Linn.	Sirosporium sp. Bubak & Scrab.	11
	Mimosaceae	Cercospora albizicola Fres.	37
	Albizzia procera Linn. Benth.	Cercospora oudhensis Mall	11
	Indopiptandenia oudhensis (Brandis)	Phomopsis mendex(Sacc.) Trab.	17
41.	Brenum	Ramularia sp. Sacc.	20
	Albizia lebbeck Linn. Benth.	Pseudocercospora sp. Speg.	37
	Albizzia sp. Linn. Benth.		
	Moraceae	Alternaria aternata (Fr.) Keissler.	01
	Ficus carica Linn.	Cladosporium fici-carica sp. nov.	31
		Alternaria aternata (Fr.) Keissler.	20
	Ficus glomerata Linn.	Uredo fici Cast.	22
		Alternaria tenuissisma (Kunz ex.Pers.)Wittshire	20
	Artocarpus heterophyllus Lamk.	Cladosporium artocarpi Kuthare & Singh	19
		Pseudocercospora artocarpi (HP. Seed)	02
		Deighton	17
	Ficus rumphi Blume Bijdr.	Rhizoctonia solani Kiihn.	11
		Alternaria sp. Nees.	19
		Botrydiploidia theobromae Pat.	21
		Colleotricum dematium (Pers. ex. Fr.) Grove	17
42.		Oidium sp. Link. ex. Fr.	10
	Ficus scabrella Roxb.	Phomopsis sp. Sacc.	10
	Streblus asper Lour.	Phyllachora ficuum Niessa Blume	23
		Sooty mold	11
		Alternaria sp. Nees.	26
		Asterina sp. Lev.	01
		Meliola sp. Fr.	02
		Pseudocercospora strebli R. P. Singh.	02
	Ficus benghalensis Linn.	Cercospora fici Heald & Worf.	03
	Ficus religiosa Linn.	Cercospora fici – religiosa Heold & Worf.	02
		Fuligomyces sp. Morgan Jones & Kamal	20
	Ficus hispida Linn.	Mycovellosiella fici A. N. Rai. & Kamal	36

	Morus alba Linn. Ficus sp. Linn.	Pseudocercospora mori (Hard) Deighton Stenella rajendrella sp. nov.	20
43.	Musaceae Musa paradisiaca Linn.	Alternaria sp. Nees.	17
44.	Myrtaceae Syzygium sp. Linn. Syzygium euginia Linn. Euginia sp. Linn. Syzygium heynianum Wallex. Duthie. Psidium gujava Linn. Eugenia jambolina Linn. Syzygium cumini Linn. Skeel. Eugenia myrtifolia Linn. Eucalyptus lanceolatus Hill. Malpea.	Alternaria pemphiddioides Cooke Alternaria sp. Nees. Meliola syzygium sp. nov. Oidium sp. Link. ex. Fr. Asterina eugeniae Yates. Asternia eugeniae Yates. Asterina sp. Lev. Cladosporium tennussisma Cke. Mycovellosiella myrtacearum Rai & Kamal Rhizoctonia solani Kiihn. Meliola eugeniae jamboloidis Hansf. Penicillum expansum Link. ex. SF Gray. Meliola eugeniae jamboloidis Hansf. Penicillum expansum Link. ex. SF Gray. Meliola sp. Fr. Stenella sp. Syd. Stenella sp. Syd.	37 02 37 01 09 21 37 19 36 17 11 11 20 01 01 22 24
45.	Nyctanthaceae Nyctanthes arbor-tristis Linn.	Stenella sp. Syd. Stenella sp. Syd.	23 17
46.	Nyctaginaceae Boerhavia diffusa Linn.	Pseudocercospora sp. Speg.	11
47.	Papilionaceae Pisum sativum Linn. Cajanus cajan (Linn.) Millsp.	Helminthosporium sp. Link. Phoma cajani Rangel Khune and Kapoor	21 17
48.	Phyllanthaceae Bridelia retusa Spreng.	Colleotrichum gleosporiodes Penz. Periconia byssoides Pers. ex. Mandel	02 01
49.	Poaceae Arunda donax Linn. Saccharum munja Linn. Calanus tenuis Linn. Saccharum spontaneum Linn.	Cladosporium sp. Link. Helminthosporium sp. Link Pestalotiopsis sp. Steyaert. Ramularia sp. Sacc. Ramularia sp. Sacc.	20 32 20 11 19
50.	Polygonaceae Polygonum chinensis Willd. Polygonum sp. Willd.	Asterina sp. Lev. Cercospora poligonii Narayan et al. Pseudocercospora polygoni Speg.	37 37 37
51.	Rhamnaceae Ziziphus sp. Willd. Ventilago sp. Linn. Ziziphus xylopyrus Willd.	Meliola ziziphi Hosagouder et al. Pseudocercospora zizyphicola (Yen) Pseudocercospora zizyphi sp. nov. Stenella sp. Syd. Tandonella sp. Prasad & Verma	23 32 23 31 23
52.	Rosaceae Rosa indica Linn. Prunus persica Stocks. Eribotrya japonica Linn.	Acremonium sp. Link. Coelomyces sp. Stenella sp. Syd.	01 22 33
	Rubiaceae Adina cardiflia Hook. f.	Cercospora adiniana R. K. Srivastava et al. Cercospora adinicola (Kar & Mondal) Corynespora sp. Gissow.	01 21 20

		Mycovellosiella adinae Firdousi et al.	20
53.		Pseudocercospora adinae Singh & Kamal	11
	Mitragyna parvifolia Korth.		
		Pseudocercospora sp. Speg.	20
		Cercospora mitragynae Bhargava & V. Nath	20
		Corynespora mitragynae sp. nov.	22
	Gardenia gummifera Linn.	Mycovellosiella mitragynae Kumar & Kamal	21
		Stenella sp. Syd.	37
	Rutaceae	Alternaria aternata (Fr.) Keissler.	01
	Citrus lemon Linn.	Alternaria citri Ellis & Pierce	23
		Curvularia tuberculosa Ellis.	24
		Geotrichum canadidum Link. ex. Pers.	19
		Meliola sp. Fr.	19
	Citrus maxima Linn.	Alternaria citri Ellis & Pierce	21
	Citrus medica Linn.	Coniella citri Agarwal & Sharma	19
		Leptoxyphium graminum Pat.	21
	Citrus sp. Linn.	Alternaria sp. Nees.	11
	Glycosmis pentaphylla Correa. Willd.	Cercospora glycosmidis Abbasi et al.	02
		Corynespora glycosmidis Abbasi et al.	20
		Corynespora sp. Gissow.	11
		Phoma sp. Desm.	24
	Murraya exotica Linn.	Phomopsis sp. Sacc.	20
53.		Stenella sp. Syd.	19
		Botrydiploidia theobromae Pat.	11
		Colleotrichum exoticum Pavgi & Singh	02
	Murraya paniculata Spreng.	Leptoxyphium sp. Speg.	11
		Phoma herbarum West.	11
	Murraya sp. Linn.	Pestalotiopsis sp. Steyaert.	19
		Stenella peniculata Tripathi et al.	19
		Coelomyces sp. Keilin.	27
	Aegle marmelos Linn. Correa.	Pseudocercospora murroicola Cooke	27
		Colleotrichum capsici Butter & Bisby	20
	Murraya koehigii Spreng	Phoma glomerata (Cda.) Wr.	02
		Stenella sp. Syd.	31
54.	Samaydaceae Casearia tomentosa Linn.	Pseudocercospora caseariae sp. nov.	21
55.	Scrophulariaceae Scoparia dulcis Linn.	Pseudocercospora scopariicola Yen. Deighton	17
	Smilaceae	Stenella smilacis Kumar et al.	20
56.	Smilax Macrophylla Roxb.		
	Solanaceae	Alternaria aternata (Fr.) Keissler.	20
	Solanum tuberosum Linn.	Cladosporium sphaerospermum Penz.	21
		Alternaria solani Nees.	19
57.	Solanum melongena Linn.	Cladosporium oxysporum Berk & Curt	21
		Cladosporium tennussimum Cke.	19
	Lycopersicon esculentum Linn.	Colleotrichum capsici Butter & Bisby	21
	Datura stramonium Linn.	Phomopsis capsici Magn.	24
	Capsicum anum Linn.	Pseudocercospora atromarginalis (Atk.)	24
	Solanum nigrum Linn.	Deighton	
58.	Sterculiaceae	Meliola sp. Fr.	27

	Sterculia sp. Linn.		
59.	Teliaceae Corchorus olitorius Linn. Grewia asiatica Linn. Grewia sp. Linn. Grewia elastica Linn.	Cercospora macutensis Syd. Phomopsis sp. Sacc. Pseudocercospora grewiicola Bagyanarayan et al. Stenella grewiae Syd. Stenella sp. Syd.	02 28 20 01 20
60.	Ulmaceae Holoptelia integrifolia Planch. Trema sp. Blume	Colleotricum dematium (Pers. ex. Fr.) Grove Phoma exigua Desm. Zygisporium sp. Mont.	02 02 33
61.	Verbenaceae Clerodendron inerme Linn. Gaertn. Clerodendrum indicum Linn. Clerodendrum viscosum Linn. Clerodendrum sp. Linn. Lantana camara Linn. Lantana indica Linn. Premna mucronata Roxb. Clerodendrum phlomidis Linn. Tectona grandis Linn. Vernonia cinerea Less.	Amerosporium polynematoides Speg. Cercospora clerodendri Miyake. Fusarium concolor Reink. Corynespora clerodendri viscosae Giisow Pseudocercospora clerodendri Speg. Stenella clerodendri Syd. Corynespora clerodendri Myake. Corynespora clerodendroni viscosi Pal et al. Corynespora clerodendri viscosae Giisow Corynespora lanthanum Sharma et al. Sirosporium lantana Bubak & Scrab. Corynespora nana Meenu & Kamal Pseudocercospora sp. Speg. Cercospora premnae sp. nov. Cercospora phlomidicola Mall. Phomopsis variosporum Sacc. Stenella tectonic Syd. Uredo sp. Pers. Veronaea tectoni Cif. & Montem. Pseudocercospora cinereae (Pavgi& Singh) Deighton	20 20 19 20 19 17 01 31 11 17 01 02 20 02 01 23 01 11 23 19
62.	Zingiberaceae Curcuma domestica Linn.	Cercospora curcumina R. K. Srivastava, N.Srivast. & A. K. Srivast	19

3. ** Places of Collection

3.1 Sohelwa Wildlife Sanctuary

- Sohelwa Forest Range East
- Sohelwa Forest Range West
- Barahwa Forest Range
- Bankatwa Forest Range
- Tulsipur Forest Range
- Tulsipur unit (Village)
- Rampur Forest Range
- Bhabhar Forest Range

3.2. Shravasti Forest Division

- Hardutt Nagar Girant Forest Range
- Kakardari Forest Range
- Bhinga Forest Range
- Payagpur Forest Range

3.3. Bahraich Forest Division

- Chakia Forest Range
- Rupaidiha Forest Range
- Abdulaganj Forest Range
- Nanpara Forest Range
- Bahraich Forest Range
- Kaisarganj Forest Range

3.4. Katarniaghat Wildlife Sanctuary

- Katarniaghat Forest Range
- Nishangara Forest Range
- Murtiha Forest Range
- Dharmpur Forest Range
- Motipur Forest Range
- Kakarha Forest Range

3.5. Dudhwa Tiger Reserve

- Belraya Forest Range
- Sonaripur Forest Range North
- Sonaripur Forest Range South
- Gaurifanta Forest Range
- Bankati Forest Range
- Sathiana Forest Range
- Dudhwa Forest Range
- Dudhwa Paryatan

3.6. Kishanpur Forest Division

- Kishanpur Forest Range
- Mailani Forest Range

3.7. Pilibhit Forest Division

- Pilibhit Forest Range
- Botanical Survey of India Allahabad
- Mahabaleshwar Forest Range Satara Maharashtra

The perusal of the table reveals that there are two hundred four angiospermic host plant species representing one hundred fifty two genera belonging to sixty three families are being parasitized by two hundred thirty seven species of foliicolous fungi representing sixty three fungal genera in the whole surveyed area. The sixty three families can be categorized in to four categories.

The category first has family Fabaceae with twenty host plants where as category second is being represented by Asteraceae and Moraceae being parasitized by eleven hosts each; category third is represented by Cucurbitaceae, Euphorbiaceae, Menispermaceae, Myrtaceae, Rutaceae, Solanaceae, and Verbenaceae with seven, ten, six, nine, ten, six and ten host plants parasitized respectively. Rest of the fifty three families is being represented by one to five parasitized hosts. No family has been found infected with more than twenty hosts.

Mallotus philippensis, Ficus rumphi, Glycosmis pentaphylla are found to be most susceptible host being parasitized by seven fungus each where as Euphatorium cannabinium, Haplophragma adenophyllum, Litsea chinensis and Adina cardifolia are found to be infected with six fungus each; Shorea robusta with five fungus; Mangifera indica, Cycas circinalis, Diospyros tomentosa, Artocarpus heterophyllus, Syzygium sp., Mitragyna parvifolia and Tectona grandis has been found to be infected with four fungus each. Rest of the hosts are being found to be infected with two to three fungus and majority are being parasitized by a single foliicolous fungus. There are a number of the hosts which had been collected infected with the same fungus either in different season or in different locality or simultaneously both having different ecological condition shows the adaptability of the fungus in different ecological or climatological conditions.

Twenty one hosts are the new hosts record viz., Tinospora malaverica, Teliacora sp., Euginia sp., Albizzia procera, Lagerstroemia parviflora, Shorea robusta, Clerodendrum sp., Glycosmis pentaphylla, Litsea chinensis, Clerodendrum viscosum, Trichonthes dioica, Murraya sp., Polygonum sp., Albizzia lebbeck, Saccharum spontaneum, Carissa carandas, Grewia elastica, Tectona grandis, Eribotrya japonica, Zizyphus xylophyrus, Tectona grandis whereas twenty three fungal taxon are new species to their respective genera viz., Alternaria bauhinia, Alternaria bahraichensis, Alternaria ichnocarpicola, Alternaria kamalella, Alternaria tejensis, Cercospora oudhensis, Cercospora phlomidicola, Cercospora premnae, Cladosporium fici-caricae, Corynespora bahraichiana, Corynespora carissae, Corynespora celastricola, Corynespora elephantopii, Corynespora ichnocarpii, Corynespora mitragynae, Corynespora pongamicola, Corynespora tomenticola, Meliola flacourticola, Meliola syzyginea, Pseudocercospora casearіae, Pseudocercospora zizyphii, Stenella litseae, Stenella rajendrella.

The review of literature Bilgrami et al., 1979, 1981, 1991; Ellis 1971, 1976; Ellis and Ellis, 1997; Jamaluddin et al., 2004; Mukerji et al., 1974; Sarbhoy et al., 1986, 1996; Verma et al., 2008 reveals that all the fungus which has been reported to be a new record to Indian mycoflora.

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