



PLANT'S DISEASES OF DISTRICT MEERUT AND ADJACENT AREAS

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Abstract

The district Meerut comprised of three tehsils:- 1. Meerut, 2. Sardhana, 3. Mawana and 12 blocks:- Meerut, Rohta, Jani, Rajpura, Kharkhauda, Sardhana, Sarurpur, Daurala, Mawana, Machhara, Parikshit garh and Hastinapur. So in the present paper, all the total area of tehsils and blocks of district Meerut have been studied to find out the diseases of plants, those are growing in the area. In the district, 160 plant's diseases found growing in the cultivated and fallow field, water bodies or near water bodies.

Key words : Plant disease, host, pathogen, Meerut, herbarium.

Introduction

The district Meerut is 65 km. far from Delhi, situated in the upper Ganga-Yamuna doab. It is roughly rectangular in shape and is bounded in the North by Muzaffarnagar, in the East by Bijnor, in the South by Ghaziabad and in the West by Baghpat district. The district Meerut on the National map lies 29°, 01'N and 77°, 43'E with an elevation of 219 M above the sea level. In 1901, it was a large district.

A survey of plant's disease was conducted for 3 year (2005-2007), during the study period it has been put in mind that no place should be missed because every and each place is highly valuable and important to collect and record new plant diseases.

Materials and Methods

In the present study, the total more and more plants of different places e.g. cultivated field, fallow fields, Ravine, river banks, canals, ponds, pools, puddles, lakes and water channels have been studied and 160 diseases of plants have been surveyed. At every and each place excursions were made at least 4-5 times in a month of the year to see the plant's diseases and to collect the information. The attempts have been made to watch and record both the cultivated as well as wild plant diseases. All the plant's disease were identified with the help of expert mycologists and IARI Delhi. Their records as far as could be possible have been recorded immediately.

Observation

The table 1 is the list of plants diseases, pathogen and host were collected from different places during survey.

Table 1 :

Pathogen	Host and disease caused
Phycomycetes	
1. <i>Synchytrium endobioticum</i>	<i>Solanum tuberosum</i> (Wart disease on Potato)
2. <i>Pythium aphanidermatum</i>	<i>Cucurbita maxima</i> (Fruit rot of Cucurbits)
3. <i>Pythium aphanidermatum</i>	<i>Carica papaya</i> (Stem rot of Papaya)
4. <i>Pythium myriotylum</i>	<i>Zingiber officinale</i> (Rhizome rot of Ginger)
5. <i>Rhizopus artocarpi</i>	<i>Artocarpus heterophyllus</i> (Fruit rot of Jackfruit)
Ascomycetes	
6. <i>Phytophthora colocasiae</i>	<i>Colocasia antiquorum</i> (Blight of Colocasia) Arbi leaf.
7. <i>Diplocarpon rosae</i>	<i>Rosa indica</i> (Black spot on Rose leaf)
8. <i>Ciboria carunculoides</i>	<i>Morus alba</i> (Popcorn disease on white mulberry)

Table 1 continued...

Table 1 continued...

9. <i>Cercospora neriella</i>	<i>Nerium indicum</i> (Leaf spot on Oliander)
10. <i>Claviceps microcephala</i>	<i>Pennisetum typhoides</i> (Ergot of Bajra)
11. <i>Podosphaera fulginea</i>	<i>Hibiscus mutabilis</i> (Powdery mildew of Cottonrose)
12. <i>Cercospora hibiscina</i>	<i>Hibiscus cannabis</i> (Leaf spot on Patsan)
13. <i>Erysiphe polygoni</i>	<i>Abelmoschus esculentus</i> (Powdery mildew of lady's finger or okra).
14. <i>Sphacelotheca sehwieii furtheana</i>	<i>Sacharum munja</i> (Loose smut on ear)
15. <i>Erysiphe cichoracearum</i>	<i>Citrullus vulgaris fistulus</i> (Powdery mildew of <i>Citrullus vulgaris</i>)
16. <i>Erysiphe polygoni</i>	<i>Pisum sativum</i> (Podery mildew of Pea)
17. <i>Erysiphe cichoracearum</i>	<i>Coccinia cordifolia</i> (Powdery mildew of Coccinia)
18. <i>Zyginghiala jamaicens</i>	<i>Averrhoa carambola</i> (Small black dots on fruit can be rubbed off)
19. <i>Deightoniella torulosa</i>	<i>Musa paradisiaca</i> (Fruit speckle in Banana)
20. <i>Peronospora trifolii</i>	<i>Trifolium alexandriam</i> (Downy mildew of <i>Trifolium</i>)
21. <i>Taphrina deformans</i>	<i>Prunus persica</i> (Leaf curl of Peach)
22. <i>Taphrina maculans</i>	<i>Curcum longa</i> (Leaf spot of Turmeric)
23. <i>Septoria chrysanthemi</i>	<i>Chrysanthemum indicum</i> (Black leaf spots on leaves)
24. <i>Erysiphe cichoracearum</i>	<i>Chrysanthemum indicum</i> (Powdery mildew on leaves)
Oomycetes	
25. <i>Bremia lactureae</i>	<i>Sonchus oleracea</i> (Downy mildew of <i>Sonchus</i>)
26. <i>Claviceps microcephala</i>	<i>Pennisetum typhoides</i> (Ergot of <i>Pennisetum</i> , Champa)
27. <i>Sphaerotheca macularis</i>	<i>Phaseolus mungo</i> (Powdery mildew of <i>Phasiolus</i> , Urd)
28. <i>Uromyces setaria italica</i>	<i>Setaria italica</i> (Rust of <i>Setaria</i>)

Table 1 continued...

Table 1 continued...

29. <i>Sclerospora graminicola</i>	<i>Pennisetum typhoides</i> (Green ear disease of Bajra)
30. <i>Puccinia recondita</i>	Rust of <i>Triticum vulgare</i>
31. <i>Peronospora meliloti</i>	<i>Melilotus indica</i> (Downy mildew of <i>Melilotus</i>)
32. <i>Oidium ocimi</i>	<i>Ocimum sanctum</i> (Powdery mildew of <i>Ocimum</i>)
33. <i>Puccinia oxalidis</i>	<i>Oxalis corniculata</i> (Rust of <i>Oxalis</i>)
34. <i>Puccinia penniseti</i>	<i>Bajra Rust of pennisetum</i>
35. <i>Puccinia coronata</i>	<i>Avena sativa</i> (Oat leaf)
36. <i>Alternaria brassicae</i>	<i>Brassica oleracea botrytis</i> (Leaf blight of <i>Brassica oleracea</i>)
37. <i>Cercospora moricola</i>	<i>Morus alba</i> (Leaf spot of <i>Morus alba</i>)
38. <i>Peronospora destructor</i>	<i>Allium cepa</i> (Downy mildew of onion)
39. <i>Peronospora gaumani</i>	<i>Argemone maxicana</i> (Downy mildew of argemone)
40. <i>Peronospora pisi</i>	<i>Pisum sativum</i> (Downy mildew of Pea)
41. <i>Albugo candida</i>	<i>Brassica campestris</i> (White Rust of Crucifers)
42. <i>Albugo bliti</i>	<i>Amaranthus viridis</i> (White Rust of <i>Amaranthus</i>)
43. <i>Cystopus ipomoea pandoranae</i>	<i>Ipomoea pandorana</i> (Stem galls on <i>Ipomoea</i>)
44. <i>Cystopus candida</i>	<i>Eruca sativa</i> (White rust on <i>Taramira</i>)
45. <i>Cystopus occidentalis</i>	<i>Spinacia oleracea</i> (White rust on Spinach leaf)
46. <i>Plasmopara viticola</i>	<i>Vitis vinifera</i> (Downy mildew of Grapes leaf)
47. <i>Plasmopara viticola</i>	<i>Annona squamosa</i> (Downy mildew on <i>Annona</i> leaf)
48. <i>Phytophthora infestans</i>	<i>Solanum tuberosum</i> (Late blight of Potato)
49. <i>Podosphaera fusca</i>	<i>Momordica charantia</i> (Powdery mildew of <i>Momordica</i>)
50. <i>Oidium lagasciae</i>	<i>Luffa cylindrica</i> (Powdery mildew of <i>Luffa</i> , Torai)
51. <i>Oidium rysiphoides</i>	<i>Zigyphus jujube</i> (Powdery mildew of <i>jujube</i>)
52. <i>Spherotheca cassiae</i>	<i>Cassia occidentalis</i> (Powdery mildew of <i>Cassia</i>)

Table 1 continued...

Table 1 continued...

53. <i>Cercospora zizyphi</i>	<i>Zizyphus jujuba</i> (Leaf spot of <i>Zizyphus jujuba</i>)
54. <i>Peronospora effusa</i>	<i>Chenopodium album</i> (Powdery mildew of Bathua)
55. <i>Oidium leptadeaniae</i>	<i>Leptadenia reticulata</i> (Leaf spot of <i>Leptadenia</i>)
56. <i>Pestalotia psidii</i>	<i>Psidium guajava</i> (Leaf spots on Guava)
57. <i>Spherotheca pannosa</i>	<i>Rosa indica</i> (Powdery mildew of Rose)
58. <i>Podosphaera xanthii</i>	<i>Xanthium strumarium</i> (Powdery mildew of <i>Xanthium</i>)
Basidiomycetes	
59. <i>Alternaria geophila</i>	<i>Cannabis sativa</i> (Leaf of <i>Cannabis</i>)
60. <i>Melampsora lini</i>	<i>Linum usitatissimum</i> (Rust of Linseed)
61. <i>Puccinia kuehnii</i>	<i>Sacharum munja</i> (Rust of <i>Saccharum</i>)
62. <i>Alternaria dauci</i>	<i>Daucus carota</i> (Carrot leaf blight)
63. <i>Alternaria tenuissima</i>	<i>Sorghum vulgare</i> (Leaf blight of <i>Sorghum vulgare</i> , Black part)
64. <i>Ustilago</i> sp.	<i>Cyperus pumilus</i> (Smut of <i>Cyperus</i>)
65. <i>Cercospora miliae</i>	<i>Melia azedirachta</i> (Leaf spot of <i>Melia</i> , Bakain)
66. <i>Alternaria longipis</i>	<i>Nicotiana tabbaccum</i> (Leaf blight of Tobacco, tambacu)
67. <i>Cercospora withaneae</i>	<i>Withania somnifera</i> (Leaf spot of <i>Withania somnifera</i>)
68. <i>Cercospora averrhoae</i>	<i>Averrhoa carambola</i> (Reddish spots with whitecenters on leaves)
69. <i>Erysiphe cichoracearum</i>	<i>Lagenaria vulgaris</i> (Powdery mildew of <i>Lagenaria</i>)
70. <i>Entyloma oryzae</i>	<i>Oryza sativa</i> (Leaf smut of Rice)
71. <i>Uromyces phasiolitypica</i>	<i>Phasiolus vulgaris</i> (Rust of Beans)
72. <i>Uromyces trigonellae</i>	<i>Trigonella foenicum graecum</i> (Rust of methi)
73. <i>Sclerospora graminicola</i>	<i>Setaria italica</i> (Green ear disease of <i>Setaria</i> , kanguni)

Table 1 continued...

Table 1 continued...

74. <i>Uromyces decortus</i>	<i>Crotalaria juncea</i> (Rust spots on Sann hemp)
75. <i>Alternaria brassicae</i>	<i>Brassica compestris var toria</i> (Leaf blight of toria)
76. <i>Ustilago</i> sp.	<i>Cenchrus setigerus</i> (Smut of <i>Cenchrus</i>)
77. <i>Alternaria melongena</i>	<i>Solanum melongena</i> (Leaf blight of <i>Solanum melongena</i> , Brinjal)
78. <i>Alternaria ricinae</i>	<i>Ricinus communis</i> (Leaf blight of <i>Ricinus</i>)
79. <i>Puccinia ramognoliana</i>	<i>Cyperus rotundus</i> (Rust of <i>Cyperus</i> , Motha)
80. <i>Puccinia purpurea</i>	<i>Oxalis</i> sp. (leaf Rust of <i>Oxalis</i>)
81. <i>Puccinia</i> sp.	<i>Amaranthus spinosus</i> (Rust of <i>Amaranthus</i>)
82. <i>Alternaria cucumbrina</i>	<i>Cucumis sativus</i> (Leaf blight of <i>Cucumis sativus</i> , khira)
83. <i>Alternaria solani</i>	<i>Solanum tuberosum</i> (Early blight of Patato)
84. <i>Ustilago nuda var. tritici</i>	<i>Triticum vulgare</i> (Loose Smut of wheat, Gehun)
85. <i>Ustilago maydis</i>	<i>Zea mays</i> (Common Smut of maize, Corn smut)
86. <i>Ustilago hordei</i>	<i>Hordeum vulgare</i> (Covered Smut of Barley)
87. <i>Ustilago kolleri</i>	<i>Avena sativa</i> (Covered Smut of Oat)
88. <i>Ustilago cynodontis</i>	<i>Cynodon dactylon</i> (Loose Smut of Grass)
89. <i>Ustilago avenae</i>	<i>Avena sativa</i> (Loose Smut of Oat)
90. <i>Sphacelotheca sorghi</i>	<i>Sorghum vulgare</i> (Grain Smut of <i>Sorghum</i>)
91. <i>Ustilago</i> sp.	<i>Dactyloctenium aegyptium</i> (Smut of <i>Dactyloctenium</i> Samagrass)
92. <i>Alternaria alternata</i>	<i>Aloe vera</i> (Leaf blight of aloe)
93. <i>Alternaria tenuissima</i>	<i>Datura stramonium</i> (Leaf blight of <i>Datura</i>)
94. <i>Alternaria alternata</i>	<i>Shorea robusta</i> (Leaf spot of Saal Leaf)

Table 1 continued...

Table 1 continued...

95. <i>Alternaria rosicola</i>	<i>Rosa indica</i> (Leaf spots on Rose)
96. <i>Alternaria cucumbrina</i>	<i>Citrullus vulgaris</i> (Leaf blight of <i>Citrullus cucumbrina</i> , water melon)
97. <i>Alternaria dianthi</i>	<i>Tagetes erecta</i> (Leaf blight of <i>Tagetes erecta</i>)
98. <i>Malmsporsora lini</i>	<i>Linum usitatissimum</i> (Rust of Linseed)
99. <i>Cladosporium cladosporioidis</i>	<i>Albizia lebbek</i> (Leaf spots of Siris) <i>Alternaria alternata</i> .
100. <i>Cladosporium cladosporioidis</i>	Leaf spot of Cycas Leaf
101. <i>Alternaria tenuis</i>	<i>Calendula officinalis</i> (Leaf blight of Calendula)
102. <i>Alternaria brassicae</i>	<i>Raphanus sativus</i> (Leaf blight of <i>Raphanus</i>)
103. <i>Cercospora fici</i>	<i>Ficus benghalensis</i> (Leaf spots of Banyan tree)
104. <i>Cercospora subsessilis</i>	<i>Azadirachta indica</i> (Leaf spot <i>Azadirachta</i> , neem)
105. <i>Cercospora personata</i>	<i>Arachis hypogea</i> (Tikka disease of Ground nut)
106. <i>Cercospora carunculoides</i>	<i>Morus alba</i> (Mulberry fruit)
107. <i>Cercospora neriella</i>	<i>Nerium indicum</i> leaf
108. <i>Alternaria alterata</i>	<i>Luffa cylindrica</i> (Leaf blight of Ghia-torai)
109. <i>Graphiola phoenicis</i>	<i>Phoenix sylvestris</i> (Smut of <i>Phoenix sylvestris</i> , black)
110. <i>Urocystis tritici</i>	<i>Triticum vulgare</i> (Flag smut of wheat on leaf, black)
111. <i>Urocystis cepulae</i>	<i>Allium cepa</i> (Smut of onion) <i>Deuteromycetes</i>
112. <i>Fusarium oxysporum</i>	<i>Leucas aspera</i> (Leaf spot of <i>Leucas aspera</i> , black)
113. <i>Helminthosporium gramineum</i>	<i>Hordeum vulgare</i> (Leaf stripe disease of Barley)
114. <i>Helminthosporium oryzae</i>	<i>Oryza sativa</i> (Leaf spots of Rice)
115. <i>Botryodiplodia</i>	<i>Pothos scandens</i> (Leaf spot of <i>Pothos scandens</i> , Money plant)
116. <i>Cercospora personata</i>	<i>Arachis hypogea</i> (Tikka disease of groundnut)

Table 1 continued...

Table 1 continued...

117. <i>Cercospora riachuels</i>	<i>Cayratia carnos</i> (Leaf spot of <i>Cayratia carnos</i>)
118. <i>Piricularia oryzae</i>	<i>Oryza sativa</i> (Blast of rice, Rice yellowish Strip)
119. <i>Cercospora gossypina</i>	<i>Gossypium herbaceum</i> (Leaf spots of cotton)
120. <i>Phyllactenia dalbergiae</i>	<i>Dalbergia sissoo</i> (Powdery mildew of <i>Dalbergia</i>)
121. <i>Erysiphe cichoracearum</i>	<i>Impatiens balsamum</i> (Powdery mildew of <i>Balsamia</i>)
122. <i>Cladosporium zizyphi</i>	<i>Zizyphus oenoplea</i> (Leaf moulds of <i>Zizyphus oenoplea</i>)
123. <i>Fusarium oxysporum</i>	<i>Cyamopsis tetragonoloba</i> (Leaf spot of <i>Cyamopsis</i>)
124. <i>Fusarium udum</i>	<i>Cajanus cajan</i> (Wilt of Arher)
125. <i>Fusarium oxysporum</i>	<i>Vigna sinensis</i> (Leaf spot of <i>Vigna sinensis</i>)
126. <i>Curvalaria lunata</i>	<i>Setaria italica</i> (Leaf stripe disease of <i>Setaria</i> , Kanguni)
127. <i>Fusarium oxysporum</i> f. sp. Cepae	<i>Allium cepa</i> (Basal rot of) Onion
128. <i>Cercospora ternatae</i>	<i>Clitoria ternatea</i> (Leaf spot of <i>Clitoria</i>)
129. <i>Colletotrichum falcatum</i>	<i>Sacharum officinarum</i> (Red rot of Sugarcane)
130. <i>Harmodendrom</i> sp.	<i>Crotalaria juncea</i> (Leaf spot of <i>Crotalaria</i>)
131. <i>Botryodiplodia theobromae</i>	<i>Boerhaavia diffusa</i> (Leaf spot of <i>Boerhaavia</i>)
132. <i>Phyllacphora graminis</i>	<i>Cynodon dactylon</i> (Tar spot of <i>Cynodon dactylon</i>)
133. <i>Cercospora solani</i>	<i>Solanum nigrum</i> (Leaf spot of Makoi)
134. <i>Cercopora triumfetta</i>	<i>Triumfetta rhamnoidis</i> (Leaf spot of <i>Triumfetta</i>)
135. <i>Erysiphe acacia</i>	<i>Zizyphus jujuba</i> (Powdery mildew of <i>Zizyphus</i>).
136. <i>Phyllactinea thirumalacharii</i>	<i>Cordia myxa</i> (Powdery mildew of <i>Cordia</i>)
137. <i>Ustilaginoides virens</i>	<i>Oryza sativa</i> (False smut of <i>Oryza sativa</i>)
138. <i>Puccinia butleri</i>	<i>Launea asplenifolia</i> (Rust of <i>Launea</i>)
139. <i>Spherotheca euphorbiae</i>	<i>Croton sparsiflorus</i> (Powdery mildew of <i>Croton</i>)

Table 1 continued...

Table 1 continued...

140. <i>Cercospora cruenta</i>	<i>Phaseolus mungo</i> (Leaf spot of <i>Phaseolus mungo</i>)
141. <i>Colletotrichum capsici</i>	<i>Corchorus capsularis</i> (Leaf spot of <i>Corchorus</i>).
142. <i>Phyllactinea corylea</i>	<i>Morus alba</i> (Powdery mildew of <i>Morus alba</i> , Black leaf)
143. <i>Colletotrichum capsici</i>	<i>Capsicum annum</i> (Ripe rot on Chillies)
144. <i>Colletotrichum dematium</i>	<i>Crotalaria juncea</i> (Caused anthracnose in <i>Crotalaria</i>)
145. <i>Spherothica fuliginea</i>	<i>Cucurbita maxima</i> (Powdery mildew of <i>Cucurbita</i>)
146. <i>Cercospora physalides</i>	<i>Physalis peruviana</i> (Leaf spot of <i>Physalis</i>)
147. <i>Alternaria brassicae</i>	<i>Brassica oleracea var capitata</i> (Leaf blight of <i>Brassica oleracea</i> , Bandgobhi)
148. <i>Cercospora cruenta</i>	<i>Phaseolus radiatus</i> (Leaf spot of <i>Phaseolus radiatus</i>)
149. <i>Cercospora heliotropii</i>	<i>Heliotropium indicum</i> (Leaf spot of <i>Heliotropium</i> , Hatisura)
150. <i>Alternaria polandui</i>	<i>Allium sativum</i> (Blight of Garlic)
151. <i>Alternaria porri</i>	<i>Allium cepa</i> (Purple blotch on Onion leaf)
152. <i>Alternaria alternata</i>	<i>Calotropis procera</i> (Leaf blight of <i>Calotropis procera</i>)
153. <i>Botrytis squamosa</i>	<i>Allium cepa</i> (Leaf blight of onion)
154. <i>Botrytis gladiolorum</i>	<i>Gladiolus gandavensis</i> (<i>Botrytis</i> blight, brown spots on leaves)
155. <i>Cercospora calotropidis</i>	<i>Calotropis procera</i> (Dark brown Spotes on <i>Calotropis</i> leaves)
156. <i>Cercospora spinaceae</i>	<i>Spinacea oleracea</i> (Leaf spot of <i>Spinacea oleracea</i>)
157. <i>Cercospora achyranthina</i>	<i>Achyranthus aspera</i> (Leaf spot of <i>Achyranthus aspera</i>)
158. <i>Tolyposporium penecillariae</i>	<i>Pennisetum typhoides</i> (Smut of <i>Pennisetum</i> , Bajra)

Table 1 continued...

Table 1 continued...

159. <i>Alternaria dalbergiae</i>	<i>Dalbergia sissoo</i> (Leaf blight of <i>Dalbergia sissoo</i> , Spotbroom)
160. <i>Cercospora indica</i>	<i>Cajanus cajan</i> (Leaf spot of <i>Cajanus cajan</i> , Arher)

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Factors decreasing the number of plants

We all are aware about the fact that plants play a vital role for the existence of life on this planet Earth but the number of natural flora is going to be decreasing continuously with unbalanced ratio due to various factors such as industrialization, urbanization, dumping garbage. Uses of fungicides insecticides and pesticides, ozon layer depletion there by global warming, less use of domestic animal dung for crops production, testing of nuclear weapons, soil-erosion, plant diseases and other polluting performed by man.

Inference

Because we are planting cultivated plants ignoring other one for the proper existence of natural flora and fauna we should spare 40% land especially for the purpose of vegetation only we should control plant disease, undesir able activities which are responsible for reducing the number of flora and as well as founa globally.

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