

Studies on fungal and bacterial diseases of *Azadirachta indica*. A.Juss (neem) in Jalgaon district

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ABSTRACT

During the extensive and intensive survey of the forest fungal and bacterial disease of *Azadirachta indica* (Neem) growing in the road side, field, scrub forest near natural forest, plantations and nurseries, about nine type of fungal and bacterial disease were recorded during 2017-2019. The disease was damping off, leaf web blight, leaf spot, leaf blight, powder mildew, bacterial leaf spot, seedling blight were recorded in different study sites in the different season. The causal organism (pathogen) were identified as *Pseudosercospora*, *Alternaria*, *Oidium*, *Xanthomonas*, *Colletotrichum*, *Pythium*, *Phytophthora*, *Fusarium* and *Rhizoctonia*.

Keywords: *Pseudosercospora*, *Alternaria*, *Oidium*, *Xanthomonas*, *Pythium*, *Phytophthora*, *Fusarium*, *Rhizoctonia*.

INTRODUCTION

Azadirachta indica is an indigenous moderate size, deciduous tree with 12-15 feet height. On account of its habit, it is being planted under the social forestry programme in the barren land and in the road side. It is very common in the natural deciduous forest. It is also grown in the garden for its beautiful yellow flower which appear during April-June. The plant is very important for its fuels, timber and medicinal importance. The bark of this plant is used for tanning in the leather industry. The root, bark, seeds and leaves are known to posse's laxative property. Attack of various fungal and bacterial diseases are found in this plant (Firdousi and Khan, 2015).

MATERIAL METHODS

In order to collect phytopathogenic fungi and associated disease on Neem, a frequent survey was conducted in the forest and other places of Jalgaon. The symptomology and other information such as place of collection, locality, local names of the plant and date of collections were noted. The sample was kept in the polythene bag and brought in the laboratory. In the laboratory, host name was confirmed with the help of herbarium, Dept of Botany, Jalgaon (Maharashtra).

Fungi which are saprophytic was isolated in PDA medium after surface sterilization with .1% mercuric chloride and sterilized water.

Tentative identification was done with the help of monographs and, reference books and confirmed by experts Bakshi BK(1976), Jamaluddin, Rizvi and Bilgrami (2008), Ellis MB (1976).

RESULTS & DISCUSSION

Table 1 :

Sr.NO.	Diseases	Place	Symptom	Control measure
1	Leaf Spot disease by <i>Pseudocercospora sagarensis</i>	Jalgaon	The infection spots are brown in colour interspersed with white patches. The fungus sporulates on the under surface appear grayish in mass. The heavily infected leaves turn pale and are shed prematurely.	Application of Mancozeb in combination with Brestan is found effective in controlling the disease.
2	Leaf Spot disease by <i>Pseudocercospora subsessilis</i>	Jalgaon	.shot hole and brown spot	Application of Mancozeb in combination with Brestan is found effective in controlling the disease
3	Leaf Spot and blight by <i>Alternaria alternata</i>		It appears late in the growing season in the last week. It attacks the leaves when the leaves become old	Application of Bilttox fungicide (0.2%)
4	Leaf web blight by <i>Rhizoctonia solani</i>	Jalgaon	Development of grayish brown blotches which increase in size with the advancing fungal hyphae and ultimately adjoining leaves get joined together by the fungal hyphae as if caught in a spider's web.	Application of Bavistin (0.1% a.i)
5	Leaf spot and blight by <i>Colletotrichum gloeosporioides</i>	Jalgaon	The fungus causes leaf spots which increase rapidly in size covering large leaf areas. The infected leaves preserve. Severely infected seedlings show premature defoliation.	Application of Bilttox fungicide (0.2% a.i)
6	Bacterial spot by <i>Xanthomonas azadirachtatii</i>	Jalgaon	Brown spot on the leaf causing early defoliation.	Use of antibiotics.
7	Damping off by <i>Pythium</i> , <i>Phytophthora</i> , <i>Fusarium</i>	Jalgaon	Among the nursery diseases, damping off is the most prevalent and highly destructive disease and cause heavy disease namely pre-emergence and post-emergence damping off depending on the state of growth of seedling	Formalin and Bavistin
8	Stem and basal rot by <i>Ganoderma</i> sp.	Jalgaon	Stem and basal rot by <i>Ganoderma</i> . Complete tree wilted, dried and killed.	
9	Powdery mildew	Jalgaon	White patches seen on the surface of the leaves. The patches coalesced and covered the whole leaf lamina giving leaves and leaflets defoliated prematurely.	Bavistin fungicidal solution (0.01%)

CONCLUSION

A frequent survey was made to study the disease of *Azadirachta indica* in the different study site. The diseases were damping off, leaf web blight, leaf spot, leaf blight, powdery mildew, bacterial leaf spot, seedling blight were recorded in different study sites in the different season. The causal organisms (pathogens) were identified as *pseudosercospora*, *Alternaria*, *Oidium*, *Xanthomonas*, *Colletotrichum*, *Pythium*, *Phytophthora*, *Fusarium* and *Rhizoctonia*. Control measures were suggested.

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