

THE POWDERY MILDEW DISEASES FROM AURANGABAD DISTRICT (M.S.); INDIA

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Abstract: The powdery mildew diseases appears in the month of December to February in cold season. During the survey of tree diseases in the year 2008 - 2011, 06 host plants found to be affected in the study area. They were viz. *Azadirachta indica*, *Butea monosperma*, *Citrus sinensis*, *Dalbergia sissoo*, *Mangifera indica* and *Zizyphus mauritiana*. The powdery mildew is an easy recognizable, the symptoms are very apparent and are diagnostic. The symptoms, causal organism and season of occurrence were noted in the field itself.

Keywords: Powdery mildew, Aurangabad, Dalbergia and symptoms.

Introduction: Fungi are the largest group of plant pathogens. This group contains more complex morphological forms with more diverse life cycles, and more number of species than any other microbial group. All major groups of fungi have important pathogens. They cause various diseases like powdery mildews, downy mildews, smuts, rusts, leaf spots and many other diseases. Of these powdery mildew diseases are reported in present paper. Powdery mildews are commonly observed on different plant species, and they are easy to recognize. The fungal pathogen produces conspicuous colonies on the foliage, which may coalesce and with the advancement of disease the entire leaf lamina appear white in color. The white powdery mass of the pathogen can be observed on stem, floral parts, and fruits; in addition to leaves. The infected plants may be stunted and produce fewer and smaller leaves and fruits (Trigiano *et al.*, 2004).

Materials and Methods: A survey of powdery mildew diseases of trees was carried out during the years 2008-2011, In the field, observation were made on few aspects, whether the disease occurs on old or young leaves or on old or young trees. The disease trees were examined carefully in the field and description was recorded, as suggested by Rangaswami and Mahadevan (2005). For determining the taxonomic position of host, samples of flowers, fruit, leaves and stem were collected and studied in the laboratory. Naik (1998). Powdery mildew diseases occur during winter season. The disease specimens were collected in the field was preserved under the blotters in the laboratory. The diseases and pathogens were identified by using relevant literature. Diseases are described with respect to their host plant, causal organism and its locality.

Results and Discussions:

Azadirachta indica A. Juss. **Vernacular name:** Neem **Pathogen:** *Oidium azadirachtae* Narayanaswamy & Ramakr. **Locality:** Daulatabad, Gangapur, Bidkin: The white powdery mycelium and spores of the fungus are often visible from upper side of leaves. Infected portion of leaves shows yellowing, turn light green or yellow. This disease increases

progressively in the month of October –November. As the disease is severe, white powdery mass coats the entire leaf lamina, which reduces the sunlight (Fig.1). As a result of infection, drying, wilting and death of infected leaves were observed. Young weak plants are easily infected than old ones. The disease spread is very rapid during winter season. Earlier this disease has been noted by Prithiviraj *et al.*, (1998)

Butea monosperma (Lamk.) Taub. **Vernacular name:** Palas, **Pathogen:** *Erysiphe polygoni* DC. **Locality:** Bidkin, Wilda, Ladsawangi, Karmad: The disease is confined to all the above ground parts such as leaves and stem. A fine white powdery mass occurs on the leaves giving a dusty appearance. The fungus appears as white, minute, small and floury powder mass on the upper side of the leaves. Young plants are more susceptible than old ones (Fig.2). In severe cases, attacked plants are defoliated and weakened by the premature drying up and death of infected leaves. It has been observed that, the disease spread is rapid in cool and humid temperature. This disease occurs during winter season. This disease was reported by Harsh *et al.*, (1992).

Citrus sinensis (L.) Osbeck, **Vernacular name:** Mosambi, **Pathogen:** *Oidium tingitanium* Carte, **Locality:** Paithan, Karmad, Tongaon: The diagnostic key of the disease is the appearance of a whitish, powdery growth of the fungus on leaves and sometimes on fruits. The white growth can also be seen on the upper surface of young infected leaves, which completely covers with the fungal spores and mycelium. Severe infection of young leaves results in premature leaf fall (Fig.3). On mature leaves, the spot turn purplish-brown, even the white fungal mass disappears. In advanced stage of disease, affected portion of leaves develop a mottled yellowing, turn light green or frequently develop brownish patches. The disease trees were found wilting and shedding. This disease is observed during winter season. Similar disease has been reported by Holford *et al.*, (2010).

Dalbergia sissoo Roxb. ex DC. **Vernacular name:** Sheesham, **Pathogen:** *Phyllactinia dalbergiae* Pirozynski, **Locality:** Sillod, Phulambri, Ajanta: Powdery mildew of Sheesham was widely observed

throughout the study area. Disease tends to occur on underside of leaves, which is covered by white powdery mass of fungus. At first, spots were small, round, with white-pink tinge and measure 2-4mm in diameter (Fig.4). While from upper side, necrotic spots appear, regular – irregular, dark brown in color and measure 4-6mm in diameter. In severe infection, white mass becomes thicker along the midrib resulting in leaf curling, wrinkling and wilting. This disease is particularly destructive during winter season. This disease has been noted by Banerjee et.al., (1996)

Mangifera indica L. **Vernacular name:** Amba, **Pathogen:** *Erysiphe cichoracearum* DC. **Locality:** Aurangabad, Gangapur, Karmad, The disease symptoms on mango were observed on leaves, flower scales, inflorescence and buds. The infection manifests itself by the appearance of net like white mycelium on the affected parts (Fig.5). A white, tiny, minute and round fungal mass is seen on epiphyllous surface of leaf; while from lower side, necrotic lesions of dark brown color were observed. In severe infection, the fungal spores become dense and cover

the entire leaf surface, reducing the sunlight. Younger leaves are highly susceptible than old ones. As a result of infection, curling and leaf fall takes place. It has been also observed that, affected fruits do not grow in size and may drop before attaining maturity. This disease was noted during winter followed by early summer season. Similar disease has been recorded by Berthet (1914).

Zizyphus mauritiana Lamk. **Vernacular name:** Ber, **Pathogen:** *Oidium erysiphoides* Fr., **Locality:** Chowka, Patri, Golegaon, The disease appears on lower side of leaves under favorable conditions. The disease manifests by powdery patches on young leaves, flowers and stem. On leaves, the white powdery mass enlarges and the leaf lamina becomes dusty, whereas on upper surface yellow-brown spots are observed (Fig.6). In severe cases, white powdery growth turns grey in color leaving a purplish tinge on the affected tissues. As a result of infection, the affected fruits appear rusty and most of them fail to ripe. Disease spread is very fast during winter season. Mitter and Tandon (1930)



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