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SOOTY MOULD DISEASES OF SOME TREES FROM AURANGABAD DISTRICT, MAHARASHTRA (INDIA)

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ABSTRACT

Sooty mould diseases of Tress from Aurangabad district were surveyed. During the survey of tress, 5 species were found infected by fungal pathogens causing sooty mould diseases. Disease is easily identifiable by the presence of a black, velvety growth covering the leaf surface area. The fungus produces mycelium which is superficial and dark grows on the flowers, leaf, stem and sometime on fruits also. The severity of disease depends on the honeydew secretions by insects. The diseases were found to be caused by 5 species of fungi viz. *Capnodium anonae, C. ramosum, Capnodium sp., Meliola bangalorensis and Meliola ranganthii.*

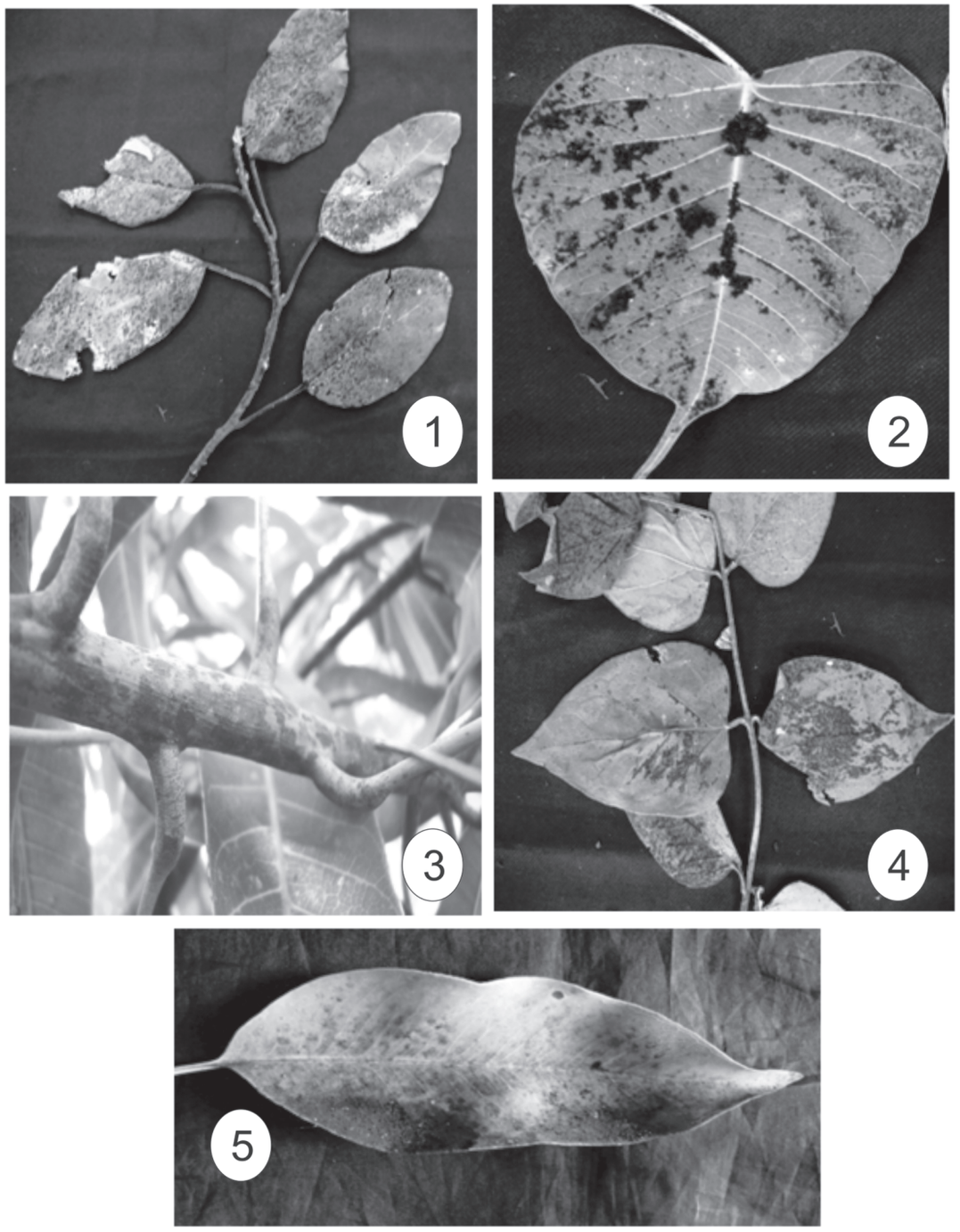
Figures : 05 References : 09 Table : 00
KEY WORDS : Aurangabad, *Capnodium*, Fungus, Sooty mould.

Introduction

Trees are the structural elements of the ecosystem. Trees are an important renewable, natural resources gifted by nature. They play an important role in ecosystem. Trees represent a major ecosystem with high degree of life-sustaining capacity. Trees are dominated in forests rather than other species. Trees are playing an important role in regulating climatic conditions, which also help to balance the environment. The trees are contributing substantially to the economic development as well as for ecological balance. The trees are diminishing day by day, due to various factors; which may be either biotic or abiotic stress factors. Biotic diseases are caused by various pathogens including, fungi, bacteria, viruses *etc.* of these fungal diseases are of more importance, since they are known to infect different plant parts of tress. The diseases occurring on different parts of trees are recorded during investigation. The sooty mould disease arise one of the questions most frequently asked at plant disease clinics in Hawaii regarding the annoying black growth that covers the surface of plant leaves. This growth, called "Sooty mould", results from interactions among sap-feeding insects and non-parasitic fungi. These mould fungi do not infect the plant tissues- their damage is cosmetic- yet the science of plant pathology treats them as plant diseases because of their negative effects on photosynthesis: they block sunlight from reaching leaf chloroplast, where the plant "harvests the sun" and produces energy for growth[8]. The photosynthetic ability of the plant is highly reduced. Black coating is also found on the fruits of *Mangifera indica*[1].

Materials and Methods

A survey of Sooty mould 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[7]. For determining the taxonomic position of host, samples of flowers, fruit, leaves and stem were collected and studied in the laboratory[6]. Sooty mould 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[5].



Figs. 1-5 : Fungal diseases- Sooty mould (1) Sooty mould of *Ficus racemosa*,(2) Sooty mould *F. religiosa*, (3) Sooty mould of *Mangifera indica*, (4) Sooty mould of *Nyctanthes arbor-tristis*, (5) Sooty mould of *Syzygium cumini*

Results and Discussions

1) *Ficus racemosa*

Vernacular name:-Umbar

Pathogen:-*Capnodium anonae*

Locality:-Babra, Sillod, Ajanta

The growth of this fungus is closely associated with the honey dew induced by the insects, while feeding. The disease symptoms were seen on leaves and fruits. The characteristic black powdery patches occur on the upper surface of leaves, which forms a woolly dense mass resulting in cutting the sunlight (Fig.1). Black powdery crust is thicker along the midrib of leaf present in shady places. In severe cases, Chlorosis, fruit droop and leaf fall takes place. The disease incidence is severe during winter season[9].

2) *Ficus religiosa*

Vernacular name: - Peepal

Pathogen:-*Meliola bangalorensis* Hansf. & Thirum.

Locality:-Mhaismal, Khultabad, Bajarsawangi

The disease attack is usually confined to the upper surface of leaves. A black, fine, minute, round-oval mold appears usually on leaves and stem. The black covering is purely superficial, which may cover the entire leaf surface (Fig.2). The sooty mould fungi grow on the honey dew, a deposit of insect. In severe cases, the black thin fungal film becomes dense and thick on the shady leaves which reduce the amount of light. As a result of infection, Chlorosis and wilting takes place. Spread of disease is very fast due to feeding of insects from one to another host plant[3].

3) *Mangifera indica*

Vernacular name: -Amba

Pathogen:-*Capnodium ramosum*

Locality:-Bidkin, Dhorkin, Paithan

Sooty mould is a very common fungus occurring on a mango tree. The sooty mould forms a black powder on the stem and leaves. The fungal spores form a dense, dark black, tiny, minute, thin film like mycelium on leaf lamina (Fig.3). This fungus grows on the honey dew secreted by the insects, but does not harm the tree unless it is very thick and interfere with photosynthesis. In severe cases, leaf growth is arrested, premature leaf fall takes place, the dead patches remain on the leaves. This disease was seen during winter season. Earlier this disease was reported[1,4].

4) *Nyctanthes arbor-tristis*

Vernacular name:-Parijatak

Pathogen:-*Capnodium* sp.

Locality:-Gevrai tanda, Bidkin, Paithan

The disease was observed on all the aerial parts of host plant. Black fungal growth appears on the upper surface of leaves, petioles and branches. These are usually associated with sooty moulds. The mycelium forms dense black crust on the infected leaves. At first, the appearance of symptoms was black, minute, round spots and measure 2-3mm in diameter (Fig.4). In the heavy infection, thin black powder increases in density which becomes granular and woolly covering to the affected parts. The disease occurs during winter season but sometimes may persist throughout the year. The disease spreads due to insects feeding. In the absence of its earlier report in literature, this disease appears to be a new record.

5) *Syzygium cumini*

Vernacular name:-Jambhul

Pathogen: - *Meliola ranganthii* *Hansf.*

Locality:-Phulambri,Sillod,Ajanta

This fungus is not a parasite, and it feed on the “honey dew” found on leaves and twigs infested with certain insects. The fungal mycelium forms more or less black crust as a fine powder, minute, round, pin head sized and measure 1-3mm in diameter (Fig.5). At first, the fungus is chiefly on the upper surface of leaves, but later increases in density and becomes granular; even woolly, where the growth is more vigorous. In severe cases, spots coalesce to coat the entire leaf surface and reduce the sunlight. This disease mainly occurs during winter season. Similar disease was earlier reported[2].

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