

Leaf gall diseases from Nanded district of Maharashtra

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Abstract

The study of plant galls has gained a significant importance in the field of plant pathology. The galls are produced by bacteria, fungi and insects. The galls produced on trees under the influence of insect parasites are characteristic. During the survey of plant diseases, 11 species of trees viz *Azadirachta indica*, *Cardia sinensis*, *Cassia fistula*, *Ficus racemosa*, *Hardwickia binata*, *Leucaena leucacephala*, *Mangifera indica*, *Pongamia pinnata*, *Syzygium cumini*, *Semicarpus anacardium* and *Zizyphus mauritiana* were found to suffer from galls in Nanded district. These were found to be caused by insects. A brief report of this investigation is presented in this paper.

Keywords: Galls, Tree diseases, Nanded

INTRODUCTION

The study of plant galls has gained considerable significance in investigations in the field of plant pathology. The galls are produced by bacteria, fungi, and insect also. The galls produced on trees under the influence of insects parasites are characteristic. They are produced on leaves, shoots, fruits, flowers, buds, inflorescences etc. The galls observed on different parts of trees in Nanded district were studied, and their symptoms were recorded with respect to their hosts. A brief report of this investigation is presented in this paper.

MATERIAL AND METHODS

A survey of plant galls of trees was carried out. In the field, observations were made on such aspects whether the gall occurs on young or old trees, young or old leaves and other plant parts, on the parts near the ground level or away from it. The 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, stem and leaves were collected and studied in the laboratory. The disease specimens collected in the field were sorted out and preserved under the blotters in the laboratory. The diseases and pathogens were identified by using the relevant literature. These diseases are described with respect to their host plant, causal organism and its locality and by using Mani (1973).

RESULTS AND DISCUSSION

1. *Azadirachta indica* A. Juss.

Received: Nov 10, 2011; Revised: Nov 30, 2011; Accepted: Dec 18, 2011.

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Disease – Stem galls

Locality- Bahaddarpura, Kandhar.

The stem galls found on the tree trunk of Neem trees are oval to ellipsoidal. The galls are solid hard, rough, dark and persistent. They were observed at different places on the same tree.

2) *Cardia sinensis* Lamk.

Disease – Leaf galls

Locality – Kandhar, Kinwat, Biloli.

The galls observed on the leaves of the tree are globose, hard, green to greenish brown in colour, generally solitary.

3) *Cassia fistula* L.

Disease – Stem galls

Locality- Nanded, Kandhar, Bhokar

The stem galls observed on the tree trunk are subglobose, hard, solid, woody, persistent and brown in colour. The gall surface may be smooth or wrinkled. The old galls persist for several years.

4) *Ficus racemosa* L.

Disease- Leaf galls

Pathogen: It appears to be caused by *Purposylla depressa* Craaw ford.

Locality- Loha, Nanded, Kandhar.

The leaf shows unilocular pouch gall. They are large spherical and converse bulges. They are yellowish brown to reddish brown in colour. The galls are generally, thick walled and almost solid. In young galls, a small fistular opening is found, while in the older galls this passage closes due to the cell proliferation. The insect lays egg on lower surface of leaf. The feeding of nymph on the sap stimulate the development of galls.

5) *Hardwickia binata* Roxb.

Disease- Stem galls

Locality- Kandhar, Kinwat, Mahur.

The galls were observed on tree trunk and because of hypertrophy they enlarged in sizes and covered the complete circumference of the tree trunk. They were oval, hard, woody and

persistent. The colour of the galls was nearly of the same colour of that of stem, but latter darkens.

6) *Leucaena leucacephala* (Lam.) De Wit.

Disease – Stem galls

Locality- Loha, Nanded, Kandhar.

The galls were observed on the tree trunk. They were globose, hard, woody, persistent and generally of the same colour of that of wood. The galls were found isolated and with age they proliferate and attain a larger size. The surface was rough and contorted.

7) *Mangifera indica* Linn.

Disease – Stem galls

Locality- Penur, Kandhar, Nanded, Kinwat.

Galls are seen on tree trunk. The galls on the bases of tree trunks are larger in size. They are irregular in form and rough. Several galls are seen on branches also. The galls were found to be hard and persistent.

8) *Pongamia pinnata* Piaer.

Disease – Leaf galls

Pathogen- It appears to be caused by *Eriophyes cheriani*, Massee

Locality- Kinwat, Mahur, Nanded, Kandhar.

The galls are epiphyllous and long. The galls are simple and free, glabrous, green and unilocular. They are, pedicellate, mostly on the leaflet of the host. Gall cavity large with long many unicellular pointed heads. Gall tissue consists of simple and closely packed parenchyma cells.

The galls are formed by the joint infection of *Eriophyes cheriani* mite in association with midge *Microdiplosis pongamia*. Neither the mite, nor the midge can form the gall independently. The galls are formed during rainy season.

9) *Syzygium cumini* (L.) Skeels

Disease – Leaf galls

Locality- Loha, Kinwat, Bhokar, Sonkhed.

Galls were observed on the leaves. Mostly they were hemispherical in shape, sometimes globose. The galls may be isolated or in some cases they were found to be fused. The smooth, but hard galls were greenish or yellowish in colour.

10) *Semecarpus anacardium* Linn.

a) Disease- Stem galls

Locality- Kinwat, Mahur, Gaul, Kandhar.

The galls were found on the tree trunk as well as on the branches. They were globose or ellipsoidal and develop more in number on the tree trunk. They were hard, woody, persistent and of the same colour of the wood, with rough surface.

b) Disease - Leaf galls

Locality- Biloli, Hadgaon, Degloor, Kinwat.

The galls observed on the leaves are yellowish green in colour. They may be hemispherical to globose in shape. They are hard and persistent. Mostly they are isolated, but rarely fused. The infected leaves become wrinkled.

11) *Zizyphus mauritiana* L.

Disease- Shoot axis gall

Locality- Loha, Pardi, Penur, Limbgaon.

The galls recorded in the shoot axis were globose, lobed, rough, hard, reddish brown in colour, sometimes solitary but often crowded on the branches, growing continuously. When old, the galls become brittle and converted into a black powder.

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