

# A survey of viral and phytoplasmal diseases of trees from nanded district

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## Abstract

During the survey of viral and phytoplasmal diseases of trees of Nanded district, 5 diseases were observed. Majority of them were observed on fruit trees. The diseases observed were Leaf curl, Ring spot and Mosaic of papaya; Tristeza disease of *Citrus aurantium* and Witche's Broom disease of *Zizyphus mauritiana*. A brief report of this investigation is presented in this paper.

**Keywords:** Plant viral diseases, phytoplasma, diseases.

## INTRODUCTION

The infections caused by viruses and phyoplasma are reported on cereal, pulses, legumes, vegetables, fruit, ornamental and commercial plants etc. They affect the leaves, twigs, stems and fruits. Some of the diseases caused by viruses and phytoplasma are known to cause serious damage in the field. However, these diseases of trees have not been paid much attention in comparison with fungal diseases. In the present investigation these diseases observed in Nanded district are studied and are reported here. In all five viral and phytoplasmal diseases were observed and they are described with respect to the causal organism and symptoms.

## MATERIAL AND METHODS

A survey of viral and phytoplasmal diseases of trees of Nanded District was carried out. Observations were made in the field on such aspects whether the diseases occur 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) [1]. The disease specimens collected in the field were sorted out and preserved under the blotters in the laboratory. The diseases were identified by using the relevant literature. The viral and phytoplasmal diseases observed in the study area are described with respect to the host, pathogen, symptoms, and locality.

## RESULTS AND DISCUSSION

### A) Viral diseases

#### 1) *Carica papaya* Linn.

#### Vernacular name – Papaya

##### i) Disease – Papaya Leaf curl

**Pathogen :** Tobacco leaf curl virus

**Locality –** Kandhar, Bhokar, Kinwant, Biloli

The disease is characterised by severe curling, crinkling and deformation of leaves. Mostly the young leaves are affected. They show vein clearing, reduced size, inward rolling of the leaves, and thickening of the veins. The petioles are twisted. The diseased leaves become leathery and brittle. The plants are stunted and in advanced stages defoliation was observed. The fruits developed are of abnormal size and have no commercial value.

##### ii) Disease – Ring spot of papaya

**Pathogen :** Papaya ring spot virus (PRSV)

**Locality- Penur, Kandhar, Loha, Limbgaon.**

The infected papaya plant by PRSV in the fields showed characteristic symptoms on foliage, petiole, stem, and fruits. The foliage symptoms include mosaic, severe distortion and shortening of leaves. Symptoms on stem and petiole were light green to dark green, water soaked spots and streaks. The fruits from infected papaya trees exhibited water soaked dark green circular spots and rings, which often coalesced to form large ring and line pattern.

##### iii) Disease – Papaya mosaic

**Pathogen :** Papaya Mosaic Virus

**Locality- Loha, Penur, Kandhar, Nanded**

The disease was observed on papaya plants of all age groups, but it was most serious on young plants. The top young leaves of the diseased plants were much reduced in size and showed blister like patches of dark green tissue alternating with yellowish green lamina, and puckering. The leaf petiole was of reduced length and the top leaves assume upright position. The infected plant showed degeneration and marked reduction in growth. The fruits on diseased plants developed circular water soaked lesions with central solid spots.

#### 2) *Citrus aurantium*

**Disease – Tristeza**

**Pathogen- Virus**

The infected leaves of santra tree lose dark green luster, become dull, chlorotic and exhibit curling. The leaf lamina slowly

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becomes totally yellow. In advanced stage of infection defoliation takes place from top leaves and later the whole twig becomes defoliated.

### B) Phytoplasma Diseases

Phytoplasma diseases cause a great loss to the plants they infect. They produce different types of symptoms like little leaf, greening, phyllody, small leaf, etc. They are known to infect crop plants as well as woody plants. The phytoplasma disease observed during the course of present investigation is described here with respect to its host, pathogen, symptoms and locality.

#### 1) *Zizyphus mauritiana* Lamk.

**Vernacular name-** Ber

**Family-** Rhamnaceae

**Disease-** Witche's Broom disease of Jujube

**Pathogen:** Mycoplasma like organism

**Locality –** Loha, Kandhar, Biloli, Kinwat

Symptoms of this disease appear in the form of severe reduction in leaf size and shortening of internodes. This results in crowding of leaves on leaf bearing branches. In advanced stage of the disease, the leaves become yellow and finally reddish. The flower of the infected trees shows phyllody. The diseased parts rarely bear any fruit, although healthy parts of the same tree bears normal flowers and fruits.

### REFERENCES

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