

B.Sc. Third Year, Semester - V

Botany Paper No. XVI (C)

Plant Pathology Unit-2

3) Plant Diseases of Vegetables

b) Little leaf of Brinjal



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b) Little leaf of Brinjal

Causal Organism: Phytoplasma (MLO)

Host: *Solanum melongana* (Brinjal)

Distribution

Little leaf of brinjal is found throughout India and Sri Lanka. In India it was first reported from Coimbatore. The disease has become serious threat to the profitable cultivation of this vegetable crop in most of the states. When young plants are attacked they do not produce flowers and fruits. Bose (1983) have reported over 99 percent loss in fruit production. There is also loss of germ inability of seeds from fruits formed on infected plants. Early infection result in reduced root length, fresh and dry root weight more than in late infections.

Symptoms:

- 1- Leaves and plant become small.**
- 2- Nodes and Internodes reduced in size.**
- 3- Leaves Yellowing.**
- 4- Plants looks like bush.**
- 5- No fruiting if they form reduced in size and hard.**





A) Healthy Brinjal plant



B) Infected or Little leaf of Brinjal

Symptoms:

The main symptom of the disease is production of very short leaves by the affected plant. The petioles are so much reduced in size that the leaves appear sticking to the stem. Such leaves are narrow, smooth and yellowish in colour. Newly formed leaves are further reduced in size. The internodes of the stem are shortened and at the same time a large number of axillary buds are stimulated to grow in to short branches with small leaves. This gives the whole plant a bushy appearance. Usually such plants fail to form flowers. Even if flowers are formed they remain green and fruiting is rare.

Causal organism and disease cycle:

The disease is caused by a phytoplasma. Earlier the causal organism was thought to be a virus. The phytoplasma appears as ovoid or spherical bodies, 40-300 nm in diameter without a rigid cell wall. These bodies of phytoplasma have been observed in the sieve tube elements of the phloem of stem, petioles, leaves and roots of diseased plant as well as in the haemolymph of the insect vector, *Hishimonus phycitis* (*Cestinus phycitis*). The adjacent companion cells of the phloem show wall ingrowths, dilated endoplasmic reticulum, dilated and ruptured cristae, deformed outer mitochondria membrane and rupture of plastid membranes and tonoplast suggesting involvement of toxins in the etiology.

Besides eggplant, this phytoplasma also attacks *Datura fastuosa* and *Vinca rosea* and could also be successfully inoculated in to tomato, potato and tobacco. It appears that during off season, the phytoplasma survives on the some weed hosts. From these weeds this is transmitted to egg plant by insect vector. Insect vectors spread the disease from plant to plant in the field.

Control measures:

- 1. Eradication of weed hosts and diseases in brinjal plants from the field.**
- 2. Control of insect vectors by insecticides.**
- 3. Antibiotic treatment with tetracycline, asachromycin, terramycin, aureomycin etc.**
- 4. Some varieties of egg plant like BB-7, BWR-12, Pant, Rituraj and H-8 are reported to have some resistance to this disease.**

Thank you