

Beet

Diseases

Leaf Spot (*Cercospora beticola*) :

This is a commonly occurring disease on foliage of beet roots. High humidity usually favours the spread of this disease. Numerous small circular spots appear on the leaf surface. The spots increase in size, becoming brownish or purplish in color. Individual spots are usually circular but several may coalesce into larger areas of dead tissue. The spots dry up giving a shot-hole appearance to the leaves. In case of severe infection spots cover the entire leaf surface resulting in pre-mature death and dropping of the leaves. As leaves die, the crown becomes cone-shaped with a rosette of dead leaves at the base. Defoliation occurs throughout the growing season resulting in reduction in root size and yield. Older leaves are mostly affected.

Control: Removal and destruction of affected plants and practicing crop rotation are beneficial in controlling the disease. Spraying with Copper Oxychloride (0.3 %) thrice at an interval of 15 days controls the disease effectively.

Downy Mildew (*Peronospora schachtii*) :



The disease is mostly prevalent during the cooler months. Symptoms appear as irregular greasy greyish areas on the leaves. Under moist conditions, these areas expand rapidly and a white powdery growth appears on the lower surface of the affected leaves. Affected leaf dries and shrivels quickly. Flower shoots on infected plants become stunted and distorted. The entire inflorescence has a compact appearance and excessive leaf development may give an appearance witches broom.

The fungus survives on the crop residues in the soil and is also carried by the seed.

Control: Preventive measures such as good field sanitation, crop rotation and use of resistant cultivars is recommended. Seed treatment with Thiram (2.5-3 g/kg of seed) protects the emerging seedlings from the disease attack. Spraying with Dithane Z-78 (0.3 %) thrice at an interval of 15 days is also recommended as an effective control measure.

Mosaic :

The disease is normally transmitted and spread by aphids. Symptoms appear as conspicuous mottling with chlorotic, zonate ring spots on the leaf surface. When these ring spots develop their center are usually green. Virus infected plants remain stunted and may lose some leaves.

Control: Destruction of infected plants and controlling the aphid population by spraying Malathion (2ml/litre of water) prevents the spread of the disease.

Curly-top :

This disease is transmitted by beet leaf hoppers. External symptoms of curly top virus infection may appear in leaves, stems, flowers, fruits, or roots of infected plants. Generally, mottling is absent, but infected plant parts may become distorted through curling, twisting, rolling, stunting, etc. Leaves become thickened and leathery. Curly top virus may impair both yield and quality of the root of an infected plant. Some of the most pronounced symptoms resulting from curly top virus attacks are internal and non-observable with the unaided eye. Such internal symptoms consist of death of the food conducting vessels, as well as of extreme variations from the normal in numbers and sizes of cells composing the plant tissues

Control: Losses can be reduced by the use of resistant varieties; adopting sanitary measures including the eradication of susceptible weeds and susceptible volunteer crop plants from a previous planting; regulating the time of planting in order to avoid the main flights of the beet leafhopper; use of barriers of trap crops and early removal and destruction of infected plants. Spraying Malathion (2ml/litre of water) controls the population of beet leaf hoppers.

Beet Yellows :

This disease is transmitted mainly through aphids. The important symptoms of the disease include yellow spots on the young leaves in the initial stages of infection. As the disease progresses, the leaves exhibit irregular yellow patches alternating with normal green colour of the leaves. The older leaves of infected plants become chlorotic, noticeably thickened, leathery and brittle. The foliage becomes abnormally red or yellow and often dies.

Control: Control measures include removal of infected plants and weeds from the field. The disease incidence can be minimised by controlling the population of aphids by spraying Oxydemeton Methyl 25 EC (2ml/litre of water).

Purple Leaf of Beet :

This viral disease is caused by a strain of tobacco mosaic virus (TMV).

The infected plants are stunted and leaves have a tendency to stand erect and come closer, unlike the healthy plants where the leaves are broad, long and profuse. Leaves of infected plants show an unusual intense purple colour, while the young emerging leaves show it prominently. Few leaves develop minute necrotic lesions all over the lamina.

Control: Removal and destruction of virus-infected plants and weed hosts helps in minimising disease