



TOMATO MOSAIC VIRUS

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Occurrence

Tomato Mosaic Virus (ToMV) is prevalent in Khyber Pakhtunkhwa regardless of the winter or summer crop and its incidence could reach up to 100%.

Cause and disease symptoms

Mosaic in Tomato is caused by Tomato Mosaic Virus (ToMV). Tomato mosaic virus is widespread and well known to most growers. It exists in a number of strains that cause a variety of symptoms. Its common symptom is light to dark green mottling on the leaves and is often accompanied by wilting of young leaves on sunny days when plants first become infected (Fig 1). The leaflets of affected leaves are usually distorted, puckered, and smaller than normal. The plant is reduced in size, and becomes pale green and spindly. Occasionally, brown markings and blotches occur on green and ripe fruits of greenhouse cultivars that have some resistance to tomato mosaic virus. These blemishes are often circular, up to 3 cm in diameter, and confined to the skin. Usually, fruit in only one or two trusses is affected, but if it occurs in young plants, yield is severely reduced and the whole plant is stunted and deformed. In winter, with low light intensity, short days, and temperatures below 20°C, plants are often severely stunted and the leaflets distorted to a fernleaf, or tendril, shape.



Fig 1: ToMV

Disease Cycle

Tomato Mosaic and Tobacco Mosaic are caused by closely related strains of one virus, but in the field these strains tend to be restricted to the respective crops. No biological vector of ToMV has been detected, but since it is one of the most infectious of plant viruses, transmitted for example in sap from a broken leaf hair, probably mechanical transmission by man or animals occurs easily. The virus is seed borne, carried in the external mucilage, testa and sometimes endosperm of tomato seeds, but has not been proved to be within embryo. Host range is immense; 200 species from 30 angiosperm families have been infected experimentally.

Management

1. Purchase seed of only resistant varieties or select seeds from only healthy plants for sowing.
2. Treat suspected seed with trisodium phosphate @ 90g/lit for 15 min.
3. Grow the seedlings in sterilized soil.
4. Remove all the infected plants from the field.
5. Implements and tools should be dipped in 3% solution of trisodium phosphate before use.