



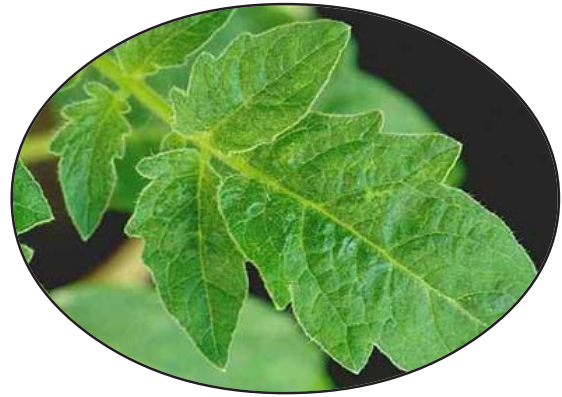
AVRDC - The World Vegetable Center

# Fact Sheet

## Tomato Diseases

# Potato Virus Y (PVY)

Found worldwide



### Symptoms

Infected leaves show mild leaf mottling symptoms and some distortion. A droopy appearance with curved petioles and leaves rolled downward may occur in plants infected for some time.

In some cases, symptoms may be more severe and may consist of dark brown, dead areas on more mature leaves, yellowing along veins, stems with purple streaking, terminal leaflets with severe necrosis, and mature plants that are stunted. There are no symptoms on the fruit.

### Conditions for Disease Development

Potato virus Y infects tomato, potato, pepper, tobacco, and many other plants, including solanaceous weeds. Weeds may act as a reservoir for the virus.

Several aphid species, such as the green peach aphid (*Myzus persicae*), transmit the virus. The aphids acquire the virus by feeding on an infected plant for less than a minute and can transmit it as quickly also. The aphids will retain the virus for periods of 1 day or longer if the aphids do not feed after acquiring the virus. The virus is also readily transmitted mechanically and by grafting, but not by seeds.

### How to Identify Potato Virus Y



Foliage shows mild roughness, faint mottling and slight distortion (left photo). Later, the foliage may curl downward, giving the plant a drooping appearance (right photo). There are no symptoms on fruit.

## Control

There are no resistant varieties currently available. Effective control of this disease focuses on preventing infection:

- Avoid planting tomato crops close to established potato, tobacco, and pepper crops. Plant tomato crops in areas less likely to support aphid populations.
- Plant earlier to avoid high aphid populations that occur later in the season.
- Late plantings should be set as far as possible from fields used to produce early tomatoes and peppers. The latter can act as sources of viruses and aphids for subsequent crops.
- Use netting of 32-mesh or greater to exclude aphids from transplants.

The use of insecticides during the growing season is ineffective, but spraying weeds that border the field with an insecticide prior to planting the field may be useful to reduce aphid populations and to prevent them from moving onto the tomato crop. Destroy all annual weeds in the field, including those in ditch banks, hedges, fencerows, and other locations.

Regularly scout fields for first occurrence of symptoms of the disease. If feasible, infected plants should be pulled up and destroyed, but only after spraying them thoroughly with an insecticide to kill any insects they may be harboring.

Reflective mulches may be used to repel aphids, thereby reducing the rate of spread of aphid-borne viruses.

Aphid populations should be monitored regularly beginning early in the season. Mineral oil or other insecticide treatments should be applied when needed to protect the crop.

Minimize plant handling to reduce the amount of virus spread mechanically. Do not touch other seedlings while discarding diseased plants.

Disinfect tools, stakes, and equipment before moving from diseased areas to healthy areas. This can be done by 1) heating or steaming at 150 °C for 30 minutes; 2) soaking 10 minutes in 1% formaldehyde or a 1:10 dilution of a 5.25% sodium hypochlorite, do not rinse; or 3) by washing in detergent at the concentrations recommended for washing clothes or dishes. Keep all solutions fresh. Alternatively, tools should be washed thoroughly, dipped for 30 minutes in 3% (w/v) trisodium phosphate (TSP), and not rinsed before use. Hands should be washed and scrubbed well with 3% TSP, then rinsed thoroughly with water. Alternatively, hands and tools may be washed with soap or milk.

Work in diseased areas last after working in unaffected parts of a field. Wash clothing that comes into contact with virus-infected plants with hot water and a detergent.

**For more information on the production of tomato and other vegetables, go to <[www.avrdc.org](http://www.avrdc.org)>.**