

Tomato yellow leaf curl virus (TYLCV)



Tomato plants showing TYLCV symptoms.
Image courtesy of PaDIL (John Thomas, DEEDI)

What is it?

Tomato yellow leaf curl virus (TYLCV) is found in tropical and subtropical regions, and is one of the most important pathogens against tomato crops around the world. This virus was first detected in Israel around 1930, and now it affects more than 30 countries around the world that grow tomatoes.

TYLCV was detected for the first time in Australia in March 2006 in cherry tomato crops in Brisbane, Queensland. Losses in severely affected crops were very high and the disease is a major threat to tomato production.

This virus is distinct from tomato leaf curl virus (TLCV), which occurs in the Northern Territory and at several locations on Cape York Peninsula.

How is it spread?

Tomato yellow leaf curl disease is not transmitted in seed, soil or from plant to plant by handling. It is harboured in infected host plants, some of which may be hosts that do not show symptoms. The virus causing tomato yellow leaf curl disease is spread from plant to plant by silverleaf whitefly (SLW) (the biotype B of *Bemisia tabaci*). SLW is a serious pest in tomatoes and other vegetable crops in the coastal and some inland areas of Queensland and New South Wales. It is an established pest in Western Australia.

What does it look like?

Plants are severely stunted with shoots becoming erect. Leaflets are reduced in size and pucker. Leaflets curl upwards, become distorted, and have prominent yellowing along margins and/or interveinal regions. Flowers wither. Plants will set very few fruit after infection occurs; therefore, any plants infected before flowering stage will produce extremely low yields. The appearance of the fruit is unaffected.

TYLCV can be confused with several other tomato conditions such as tomato big bud, tomato yellow top, physiological leaf roll and phosphate and magnesium deficiency.



Symptoms: leaf yellowing, rugosity, curling and stunting

Image courtesy of Michael Meizer

What other plants can be infected by TYLCV?

Other vegetable crops affected include capsicums (*Capsicum annuum*), chillies (*Capsicum chinense*) and French beans (*Phaseolus vulgaris*). Ornamental plants such as lisianthus (*Eustoma grandiflorum*), poinsettias and related plants (*Euphorbia* spp.) can also be infected. A number of weed species such as certain nightshades (*Solanum* spp.), thornapples (*Datura stramonium*), tobacco (*Nicotiana* spp.) and mallow (*Malva* spp.) can be infected but may not show symptoms.

Restrictions are in place to prohibit the entry or importation of TYLCV host material into Victoria and Western Australia

What to do

Growers can put on-farm biosecurity measures in place to reduce the chance of pests and disease getting onto their properties.

These include:

- using pest-free propagation material and seedlings, sourced from a reputable supplier
- putting up farm biosecurity signs on gates and fences to manage visitors coming onto your property
- avoiding sharing equipment
- keeping equipment and vehicles clean and free of plant matter
- wearing clean clothing before visiting other growers' properties
- teaching farm workers on-farm hygiene practices, what to look for and how to report unusual pests and diseases.
- report suspect symptoms to the Exotic Plant Pest Hotline 1800 084 881.

Report suspected detections to the Exotic Plant Pest Hotline.

**EXOTIC PLANT PEST HOTLINE
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