

BIOSECURITY SA – Plant Health
Exotic Plant Pest Hotline: <b>1800 084 881 (available 24 hours)</b>
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## CITRUS VARIEGATED CHLOROSIS (CVC)

### *Xylella fastidiosa* subsp. *pauca*

- Citrus variegated chlorosis (*Xylella fastidiosa*) is an exotic plant pest not present in Australia
- This disease is a serious threat to Australia's citrus industry

#### CITRUS VARIEGATED CHLOROSIS:

Citrus variegated chlorosis is caused by the bacterium *Xylella fastidiosa*. The bacterium lives and multiplies in the sap of citrus plants, blocking water uptake.

Sap feeding insects spread the disease between plants. Once a plant is infected there is no treatment other than to remove infected limbs or whole trees to try and prevent spread.

*Xylella fastidiosa* is responsible for a number of diseases in other horticultural crops, including Pierce's disease of grapevine, leaf scorch of tree nuts, Olive quick decline syndrome of olives and phony peach disease. No strains of *Xylella fastidiosa* are present in Australia.

#### HOST RANGE:

*Xylella fastidiosa* can infect most of the citrus cultivars, species and hybrids, yet the severity of symptoms is variable. Sweet oranges are the most susceptible. Grapefruit, mandarins, mandarin hybrids, lemons, limes, kumquat and trifoliolate orange are moderately susceptible, showing less severe symptoms. Rangpur lime, citron, and pummelo are less susceptible.

#### SPREAD:

*Xylella fastidiosa* bacteria are carried in the sap of host plants and can be spread between plants by grafting, pruning or sap feeding insect vectors.

The most efficient known vector is the glassy winged sharpshooter. Glassy winged sharpshooter is not currently found in Australia. It is possible that natural insect vectors of this disease may already exist in Australia.

Introduction of the disease to Australia could occur with human assisted movement of infected plant material or with insect vectors. The disease is not spread by seed.

#### DISTRIBUTION:

*Xylella fastidiosa* is native to the Americas and has spread to Europe where there have been recent detections in Italy and France. It is also present in the Caribbean, Taiwan, Iran, Turkey, Lebanon and Kosovo. Presence in India and Morocco is unconfirmed.

## SYMPTOMS:

Leaf - foliar symptoms of CVC are very similar to nutrient deficiency and other diseases; therefore, it is difficult to rely on foliar symptoms alone for identification. Early leaf symptoms resemble zinc deficiency with interveinal chlorotic areas on the upper surface. Early symptoms may be limited to a single branch. As the leaf matures, gummy lesions become visible on the lower leaf surface corresponding to chlorotic areas on the upper surface of the leaf. The chlorotic areas gradually enlarge toward the leaf margin, and the lesions on the underside of the leaf may become dark brown or necrotic. Leaves may be smaller than normal. Leaf symptoms are most pronounced on mature leaves (behind the new flush).

Fruit - blossom and fruit occur at the normal time, but fruit thinning does not occur. This results in clusters of 4-10 early maturing fruit. Fruits of infected trees may exhibit sunburn damage because of defoliation at branch terminals. In addition, fruit may change colour early, have hard rinds, lack juice, and have an acidic flavour. Fruit symptoms of CVC are more easily recognized from a distance.

Whole tree - affected trees may exhibit reduced vigour and growth, and show abnormal flowering and fruit set. Newly affected trees may only exhibit symptoms on one limb or branch, and then symptoms may spread to the entire canopy. Older trees may only show symptoms on the extremities of the branches. Severely diseased trees frequently possess upper crown branches with defoliation at terminal twigs and small leaves and fruit.



**Report suspected exotic and emergency pests and diseases by phoning the Exotic Plant Pest Hotline**



**Disclaimer:**

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Serrano, D., Serrano, E., Dewdney, M., and Southwick, C. (2010). Citrus Diseases. USDA/APHIS/PPQ Center for Plant Health Science and Technology. June 20 2017