

Citrus variegated chlorosis

What is citrus variegated chlorosis?

Citrus variegated chlorosis (CVC) is a serious disease of citrus caused by the bacterium *Xylella fastidiosa* subsp. *pauca*. This bacterium lives in the water conducting system (xylem) of the plant and is transmitted by xylem-feeding leafhoppers known as sharpshooters. Most citrus species and hybrids are susceptible, although the severity of symptoms is variable. It can spread rapidly and results in significant economic losses.



Serrano et al (2010). Citrus Diseases. USDA/APHIS/PPQ Center for Plant Health Science and Technology

Tree symptoms showing yellowing of leaves



Serrano et al (2010). Citrus Diseases. USDA/APHIS/PPQ Center for Plant Health Science and Technology

Clustered fruit which fails to ripen



Alexander Purcell, University of California Phytopathology

Significantly reduced size of infected fruit

What should I look for?

Plants infected with CVC show symptoms similar to zinc deficiency, including yellowing and loss of leaves. The yellowing occurs on the upper surface of maturing leaves, particularly between the veins. As the leaf matures, small, slightly raised lesions appear on the underside of the leaf that correspond to the yellowing on the upper side. The lesions are initially light brown in colour and transition to dark brown, and can become necrotic. Affected trees may exhibit reduced vigour and growth, and may appear stunted, with defoliation at terminal twigs as well as small leaves. However, trees do not usually die.

Fruit may exhibit sunburn damage due to defoliation at branch terminals. In addition, fruit size is significantly reduced, and fruit may change colour early, have hard rinds, lack juice and have an acidic flavour. In some cases fruit can develop in clusters, resembling grapes.

Symptoms are usually more noticeable in trees between 7 to 10 years of age and will be aggravated when plants are stressed by high temperatures or drought conditions.



What can it be confused with?

Foliar symptoms of CVC may be confused with zinc deficiency, anthracnose and greasy spot. Fruit symptoms can be confused with sunburn.



Serrano et al (2010), Citrus Diseases, USDA/APHIS/PPQ Center for Plant Health Science and Technology

Underside of leaf showing yellowing between veins and brown speckling

How does it spread?

CVC is transmitted through seed and grafting. It can also be spread via the movement of infected citrus nursery stock and plant material (budwood, cuttings, rootstock). CVC can also be spread by xylem-feeding vectors, such as the glassy-winged sharpshooter.



Serrano et al (2010), Citrus Diseases, USDA/APHIS/PPQ Center for Plant Health Science and Technology

Upper surface of leaf showing yellowing between veins



Alexander Purcell, University of California, Bugwood.org

Reduced fruit size and hard rind in infected fruit

Where is it now?

CVC infects citrus plants in parts of Central and South America, particularly in Brazil.

How can I protect my orchard from citrus variegated chlorosis?

Ensure propagation material is purchased from suppliers that source their budwood from Auscitrus. Check your orchard frequently for the presence of new pests and investigate any sick citrus plants for unusual symptoms. Make sure you are familiar with common citrus pests so you can tell if you see something different. Keep records of anything unusual and ensure all staff and visitors adhere to on farm biosecurity and hygiene practices.

If you see anything unusual, call the Exotic Plant Pest Hotline

**EXOTIC PLANT PEST HOTLINE
1800 084 881**

Disclaimer: The material in this publication is for general information only and no person should act, or fail to act on the basis of this material without first obtaining professional advice. Plant Health Australia and all persons acting for Plant Health Australia expressly disclaim liability with respect to anything done in reliance on this publication.

For more information visit www.planthealthaustralia.com.au