

BIOSECURITY SA – Plant Health

Exotic Plant Pest Hotline: **1800 084 881** (available 24 hours)

Email: [PIRSA.planthealth@sa.gov.au](mailto:PIRSA.planthealth@sa.gov.au)

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BIOSECURITY SA  
PIRSA

## Citrus tristeza virus (CTV)

Citrus tristeza virus (CTV) is an economically important disease of citrus that is found worldwide. There are many different strains of CTV—some are mild and may have no visible effect on citrus plants, while other strains can be severe and destructive. Early detection of this disease and the insects that spread it, should any arrive in Australia, is vital to ensure the best chance of eradication. Preventing entry of this disease and its vector is the most effective of protecting our valuable citrus industry.

Many strains of CTV occur in Australia. Some were introduced as early as the 1860s, along with the insect that carries the disease—the black citrus aphid (*Toxoptera citricidus* Kirk).

CTV grapefruit stem-pitting strain is widely distributed in Australia. CTV sweet orange stem-pitting strains are found only in Queensland where they are under official control. It is illegal to transport citrus budwood or trees from Queensland to the other Australian states.



CTV carrying aphids (*Toxoptera citricidus* Kirk)  
Photo courtesy of NSW DPI

Mandarin stem-pitting strains of CTV (also called mandarin stem-pitting) are not known to occur in Australia. Introduction of mandarin stem-pitting strains affecting Imperial, Murcott, Hickson, Ellendale and other mandarins would have a serious impact on Australia's citrus industry. Mandarin stem-pitting CTV is currently only known from Indonesia, Japan, Malaysia and Thailand.

### What causes CTV?

CTV is caused by a virus. There are different strains of the virus, each producing a different suite of symptoms on different citrus cultivars and rootstocks. Mandarin stem-pitting strains of CTV are particularly severe on mandarins.

### Which citrus plants are affected?

Most citrus species and cultivars are susceptible to CTV but vary in reaction—from resistant to tolerant or sensitive. Mandarin stem-pitting strains of CTV are most easily detected on mandarin or tangerine trees.

### What does CTV look like?

Trees with severe CTV are generally stunted and have small fruit.

Mandarin stem-pitting CTV can cause a bumpy or 'ropy' appearance on tree trunks and limbs of trees. Bark can be abnormally thickened. Under the bark, stem-pitting ranges from deep to shallow pitting, and gumming. It can vary from a few small pits to many fine honeycomb-like pits.



Classic stem-pitting symptoms on mandarin in Thailand  
Photo courtesy of C. Roistacher

The latter may cause no visible external symptoms on the tree trunk but twigs and branches of infected trees become brittle and may show signs of stunting or lack of vigour. While a range of other symptoms are associated with CTV, stem-pitting will be the most important symptom for detecting mandarin stem-pitting strains.

### How does CTV spread?

Long-distance spread can occur by the movement of CTV-infected citrus planting material, or by the movement of plant material infested with CTV-infected aphids.

The Department of Agriculture and Water Resources (DAWR) closely regulates approved importations of host plant material and monitors for illegal plant movement.

Wind-borne dispersal from tropical storms and cyclones could also potentially carry infected aphid vectors from nearby countries to Australia.

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



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