

# Citrus tristeza virus (mandarin stem-pitting strains) Have you seen this citrus disease?

## What is 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.

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 carrying aphids (*Toxoptera citricidus* Kirk)

Photo courtesy of NSW DPI

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.

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.

There are no impacts on human health from CTV-affected plants and fruit.

## 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.



Classic stem-pitting symptoms on mandarin in Thailand

Photo courtesy of C. Roistacher

## 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.

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 Australian Quarantine and Inspection Service 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.

## How can I protect my farm from CTV?

There are simple steps you can take to protect your farm:

- Be aware of mandarin stem-pitting CTV.
- Do not illegally import citrus material.
- To avoid introducing mandarin stem-pitting CTV on to your property, establish new plantings with healthy propagation material from reputable nurseries that use and routinely test their Auscitrus seed and budwood for a range of diseases. On receipt of any new plants, check that they are free from pest and disease. If mandarin stem-pitting CTV is detected, isolate suspect nursery stock from healthy plants until official checks are completed.
- Check your crop. Make sure you and your farm workers are familiar with symptoms of mandarin stem-pitting CTV and the insects that spread it.
- Report anything unusual.

## Have you seen CTV?

Be on the lookout for mandarin stem-pitting strains of CTV, and report them immediately to Biosecurity Queensland. Do not move any plant material off your property—this can spread the disease.

**Call Biosecurity Queensland on 13 25 23 or the National Exotic Plant Pest Hotline on 1800 084 881.**

## Further information

For more information, call Biosecurity Queensland on **13 25 23** or visit [www.biosecurity.qld.gov.au](http://www.biosecurity.qld.gov.au)

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*Disclaimer: The material in this publication was prepared from the most recent information available at the time of publication. It is intended as a guide only.*