citrus research international

CITRUS BIOSECURITY THREAT:
Citrus Sudden Death (CSD)

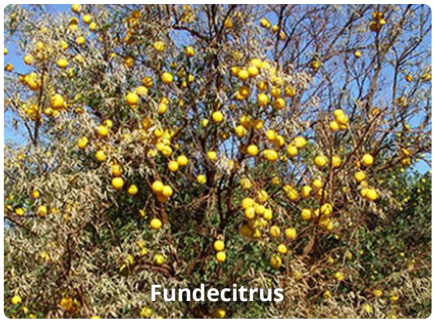
Symptoms

Foliar discolouration and leaf dullness throughout the canopy of the plant, loss of leaf turgidity, accompanied by partial defoliation initially, and total defoliation at more advanced stages. Fruit usually appear normal, but remain attached to the dying or dead trees.

Less sprouting, fewer new shoots, absence of internal shoots, and finally tree death.

The characteristic symptom of the disease is a yellow to orange stain that develops in the phloem at the bud union of a susceptible rootstock, indicating blockage of the phloem vessels.

Death of a large portion of the root system that progresses from the root tips through roots of increasing size until the main scaffold roots are affected and die. Trees can die within 1 to 12 months after the first appearance of symptoms, depending on the time of year (more rapid disease progression in the spring) and cultivar (more rapid disease progression in late-maturing cultivars).

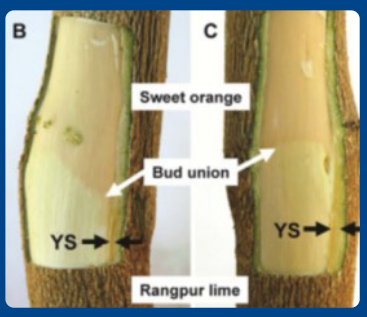


Loss of leaves, fruit remain attached and normal

General foliar discolouration

The disease

- The causal agent of this disease has not been confirmed, but is associated with citrus sudden death-associated virus (CSDaV).
- It is an infectious bud union disease of Rangpur lime, Volkamer lemon and Rough lemon rootstocks.
- Infected trees on susceptible root-stocks can die in less than 12 months.
- There is no known treatment. Infected trees need to be eradicated.



Yamamoto, *et al.*, Plant Disease (2011)

Characteristic yellow to orange stain in phloem of infected *C. limonia* rootstock

Fact sheet produced by CRI's Biosecurity Division, January 2024

Possible confusion with

Symptoms are similar to the quick-decline symptoms caused by citrus tristeza virus, Valley Bushveld Decline and Citrus Blight.

Host range

- All *Citrus* spp. are hosts but disease expression is only on the specified rootstocks.
- Sweet oranges *(Citrus sinensis),* Ponkan and Cravo mandarin *(C. reticulata)*, tangor Murcott (*C. sinensis* × *C. reticulata*) and others, when grafted on Rangpur lime (*C. limonia*), Volkamer lemon (*C. volkameriana*) and Rough lemon (*C. jambhiri*) rootstocks

Current distribution

- Brazil

Method of spread

- **Infected plant material**
  Citrus propagating material (trees, cuttings, grafts, budwood)
- **Viruliferous, airborne insect vectors, possibly aphids, but not confirmed**

Preventative actions

- Quarantine procedures for importation of citrus propagation material
- Plant certified disease-free citrus trees
- Awareness and surveillance to ensure early detection and rapid implementation of control measures
- Do not bring illegal plant material into South Africa and onto your farm!

For more information on this disease, or if you find anything unusual, contact Wayne Kirkman from CRI's Biosecurity Division: waynek@cri.co.za, 084 458 0349