FACT SHEET

Verticillium Wilt

Chilean kiwifruit growers have suffered large losses from the soil borne pathogen, *Verticillium nonalfalfae* (previously identified as *V. alboatrum*), with some orchards losing over 80% of vines.

In susceptible kiwifruit cultivars, infection always leads to plant death and this typically occurs very suddenly. Verticillium species have been isolated from kiwifruit in New Zealand, however this virulent species has only been reported in Chile.

Signs and symptoms

- Sudden collapse of apparently healthy plants at any time during the growing season
- In the spring, flowers and leaves suddenly wilt and die
- Later in the season, leaf necrosis, complete defoliation and die-back of canes and leaders are typical
- Fruit, if present, is retained on the vine
- Brown discoloration of vascular tissue (image below)
- Superficial cracking of the bark on the trunk
- A reduced root system
- Vigorous regrowth from the rootstock and lower scion
- Conspicuous, white mycelial growth from the wood of cuttings after approximately 48 hours of humid incubation is a rapid and reliable diagnostic test for the presence of the pathogen (image below).

Images: Brown discoloration of affected vascular tissue (left). White mycelial growth commonly used as a diagnostic indicator (right).

Control

Symptoms are reported to be more severe when kiwifruit is planted in a site immediately following the removal of apple, pears, citrus or grapes. Infected plants are to be removed with as much of the roots intact as possible. Hygiene and tool sterilisation are important in controlling spread of the pathogen. There are no proven treatments.

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Distribution and climate range

Verticillium species are widely distributed across many of the world's temperate regions (including New Zealand) in a range of host species, with alfalfa and hops being the most commonly infected crops.

Impacts on kiwifruit from *V. nonalfalfae* have only been reported in Chile. The Chilean strain is different to that which is present in New Zealand.