Pierce's disease

Plant Health AUSTRALIA

EXOTIC PEST – CALL THE EXOTIC PLANT PEST HOTLINE IF SUSPECTED

What is Pierce's disease?

Pierce's disease is a serious disease of grapevines caused by the bacteria *Xylella fastidiosa*. This bacterium lives in the water conducting system (xylem) of the grapevine and is spread between plants by xylem-feeding leafhoppers known as sharpshooters. The glassy-winged sharpshooter, another exotic plant pest, is a key vector.

What should I look for?

Plants infected by Pierce's disease show symptoms of water stress, which includes browning and loss of leaves, lignification of canes and fruit raisining. The characteristic symptom, leaf scorch, is observed in late summer and autumn and includes marginal leaf scorch (browning) that is frequently bordered by a red or yellow halo. The outer leaf area may dry suddenly while the rest of the leaf remains green. Affected leaves are less vigorous and smaller than healthy leaves. Ultimately, entire leaves may turn brown and drop, leaving the petioles attached to the plant.

Shoot growth of infected plants progressively weakens and the tips of canes and roots may die back as symptoms become more pronounced. Symptoms are usually more obvious in grapevines that are stressed by high temperatures or drought conditions.

Flower clusters on infected grapevines may set berries but these usually dry out before reaching maturity. Diseased stems often mature irregularly with patches of green and brown tissue, known as 'green islands', becoming visible.

What can it be confused with?

Symptoms of Pierce's disease can be confused with chloride (salt) toxicity, drought symptoms or herbicide injury.

Pierce's disease of grapevine; spring symptoms in Chardonnay, with a healthy leaf, shown on the left

Alex. H. Purcell, University of California - Berkeley, Bugwood.org

Grapevine leaves showing scorch-like symptoms from Pierce's disease

California Department of Food and Agriculture

Pierce's disease reduces productivity and eventually results in the death of the infected grapevines

Alex. H. Purcell, University of California - Berkeley, Bugwood.org

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How does it spread?

Pierce's disease is transmitted by grafting infected propagation material onto healthy rootstocks and by xylem-feeding leafhoppers.

Where is it now?

Pierce's disease *(Xylella fastidiosa)* occurs in North America, Central America, South America, Europe, Iran, Israel and Taiwan.

How can I protect my vineyard from Pierce's disease?

Only source high health status (preferably certified) plant material from reliable and accredited suppliers. Check your vineyard frequently for the presence of new pests and investigate any sick grapevines for unusual symptoms. Make sure you are familiar with common grapevine 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** on **1800 084 881**.

'Green islands' on a grapevine cane, surrounded by brown necrotic lesions

John Hartman, University of Kentucky, Bugwood.org

The glassy-winged sharpshooter is one of the main vectors of Pierce's disease among grapevines overseas

Reyes Garcia III, USDA Agricultural Research Service, Bugwood.org

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Berries usually dry out and shrivel up before reaching maturity

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