

Fact sheet

X disease

What is X disease?

X disease is caused by the X disease phytoplasma and is economically important in North America (particularly California) where it causes serious problems on cherries as part of the peach yellow leaf roll complex.

What can it be confused with?

Symptoms may be confused with abiotic stress symptoms.

What should I look for?

Early symptoms include spotting and rolling of the leaves. Leaf veins may also swell. Shortly after, the whole canopy of the tree becomes chlorotic and its leaves fall, leaving a few rosettes at the tips of the shoots. Young trees die 1-3 years after first symptom appearance. Chronically infected older trees may survive several years but yield little or no fruit. Infected cherry trees on *Prunus mahaleb* rootstocks die rapidly because the rootstock is resistant, and a hypersensitive reaction occurs at the graft union.

Symptoms in fruit include small, pointed or distorted fruit with a pale red to greenish white colour. Peduncles may present as shorter than usual.

How does it spread?

The disease is readily transmitted by budding or grafting, but the phytoplasma itself can be very irregularly distributed in the plant (according to strain). Transmission is also possible to various herbaceous plants which act as reservoirs in orchards. The most important practical form of transmission is by leafhoppers.



Early symptoms include leaf yellowing and rolling and swollen veins

F. Dossba, INRA, Bordeaux, Bugwood.org



Canopy chlorosis of an entire sour cherry tree due to X disease

H.J. Larsen, Bugwood.org



Graft union showing symptoms of X disease

H.J. Larsen, Bugwood.org





Where is it now?

The X disease phytoplasma is widespread in North America and has also been reported from India.

How can I protect my orchard from X disease?

Source planting material and orchard inputs only from 'clean', accredited suppliers. Check your orchard frequently for the presence of new pests and unusual symptoms. Make sure you are familiar with common cherry pests so you can tell if you see something different.

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

**EXOTIC PLANT PEST HOTLINE
1800 084 881**



X disease can affect entire orchards

A. H. Purcell, University of California



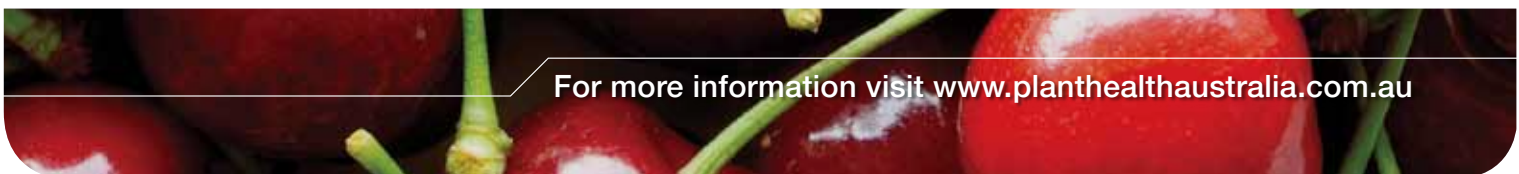
Diseased fruit (right) are paler than normal fruit (left)

J.K. Uyemato, USDA



Affected fruit are smaller and peduncles are shorter

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