



Exotic threats of plantation timber: Sudden oak death

What is it?

The pathogen *Phytophthora ramorum* causes the tree disease known in the USA as Sudden Oak Death. This pathogen is not present in Australia and should be considered an invasive species due to its ability to spread, persist, and reproduce in new environments. *P. ramorum*'s rapid life-cycle, ability to reproduce asexually, aerial biology and capacity to produce resting spores allowing it to survive through unfavourable climatic conditions are elements favouring this species' potential invasiveness. The pathogen has a broad host range and although it causes a lethal stem canker on some trees, on other hosts it exhibits a non-lethal nature providing a source of spores for continuing dispersal.

What do I look for?

There are two categories of hosts for *P. ramorum*; hosts that develop cankers and foliar hosts.

Stem cankers found on some trees can "bleed" or weep or produce "tar-like spots". When the outer bark is removed from the canker the inner bark, cambium and xylem may all be infected. Discoloration is associated with the cankers, , but its intensity is extremely variable, ranging from dark-brown, almost black lesions to slight discoloration of the infected tree tissue (See picture). It should be noted that *P. ramorum* cankers are often on the lower section of the trunk but also occur further up, they do not infect roots.

Foliar hosts become infected on their leaves and twigs. Leaf spots, blotches and scorch symptoms are all symptoms of *P. ramorum* infection. Leaf infection is accompanied by branch infections and branch dieback in some foliar hosts, in others only leaves are affected. Branch dieback is observed in coniferous plants. Branch tips may wilt and needles will at first hang from the infected branch then drop, leaving a barren branch tip. Foliar hosts only occasionally die from infection.

Bleeding canker symptom

Photograph: Joseph O'Brien, USDA Forest Service www.ipmimages.org



Exposed dark brown to black canker on Tanoak.

Photograph: Joseph O'Brien, USDA Forest Service www.ipmimages.org

Natural dispersal of this pathogen is by movement of plant material, waterborne, soil borne and possibly airborne sporangia and waterborne and soil borne resting spores (chlamydospores).

There are no known vectors of the disease other than humans. *P. ramorum* has been proven to be effectively moved through the trade of ornamental plants and green waste.

Where is it found?

This pest is found across Europe including Great Britain as well as the United States and Canada.

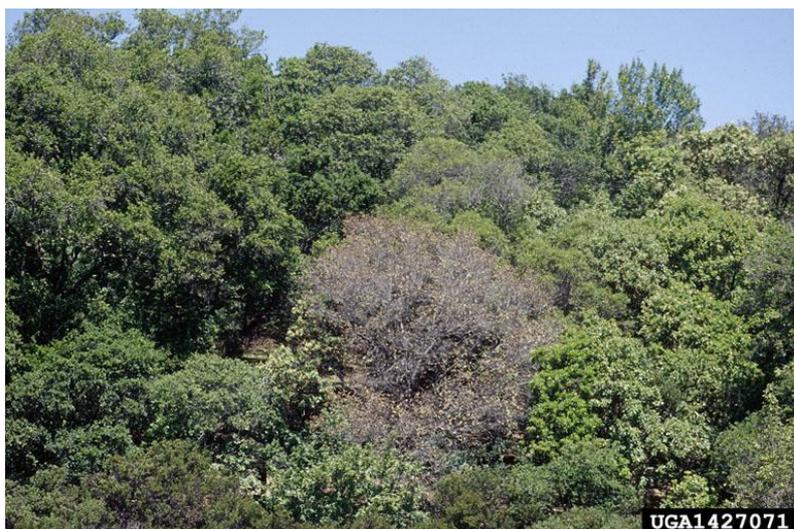
Reporting

Early detection is the key to eradicating the Sudden oak death if found in Australia.

Plantation operators may report suspected exotic pests to the **Exotic Plant Pest Hotline (1800 084 881)** or can directly contact their relevant state agriculture or primary industries department.

To minimise the risk of spread, samples should not be moved until they have been checked by an expert.

This fact sheet is part of the National Plantation Timber Industry Biosecurity Plan. For more information about the Biosecurity Plan, please contact Plant Health Australia.



Coast live oak dying from *P. ramorum* infection in China Camp State Park, CA.

Photograph: Joseph O'Brien, USDA Forest Service
www.ipmimages.org



FOR MORE INFORMATION

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