

Phytophthora lateralis

***Phytophthora lateralis* is an aggressive, fungal-like pathogen of Lawson cypress trees.** It mainly attacks the roots of trees and can spread up through the trunk resulting in the rapid decline and death of the tree. Thought to originate in Asia, the disease is the main cause of mortality in Lawson cypress in its native range in the west coast of North America, and outbreaks have now been recorded in France and the Netherlands. The pathogen was first reported in the UK in 2010, most likely having been imported from mainland Europe, and it has since been found on sites across England, Scotland, Wales and Northern Ireland. It is important that suspected cases of the disease are reported.



A Lawson cypress tree infected with *Phytophthora lateralis*.

Distribution

Lawson cypress (*Chamaecyparis lawsoniana*) is an important amenity tree widely planted in parks and gardens throughout the UK. Since the first reported case in 2010, Lawson cypress trees infected with *Phytophthora lateralis* have been found in Yorkshire, Sussex and Devon as well as at sites in the west of Scotland, Wales and Northern Ireland. Cases of infected northern white cedar (*Thuja occidentalis*), western red cedar (*Thuja plicata*) and Sawara cypress (*Chamaecyparis pisifera*) have also been recorded.

It is thought that *Phytophthora lateralis* is capable of surviving in all parts of Britain and, although the pathogen almost exclusively affects Lawson cypress, it can't be ruled out that, under conditions of natural infection, it could affect other *Chamaecyparis* species or indeed other tree species; in North America, the Pacific yew (*Taxus brevifolia*) – a close relative of Britain's native common yew – is an occasional host.

How the disease spreads

The most likely source of outbreaks in the UK is the importation of infested plants from neighbouring European countries. Soil infested with spores of the pathogen may then be spread locally on footwear, vehicles and machinery. Watercourses flowing through infected sites may also carry the free-swimming spores.

Symptoms to look out for

The pathogen mainly attacks the roots of Lawson cypress and may spread upwards into the lower stem of the tree.

Foliage

The foliage of infected Lawson cypress trees initially turns a pale green. It later withers and turns a rusty reddish-brown colour over all, or a large part of, the crown (1).

Branches and stems

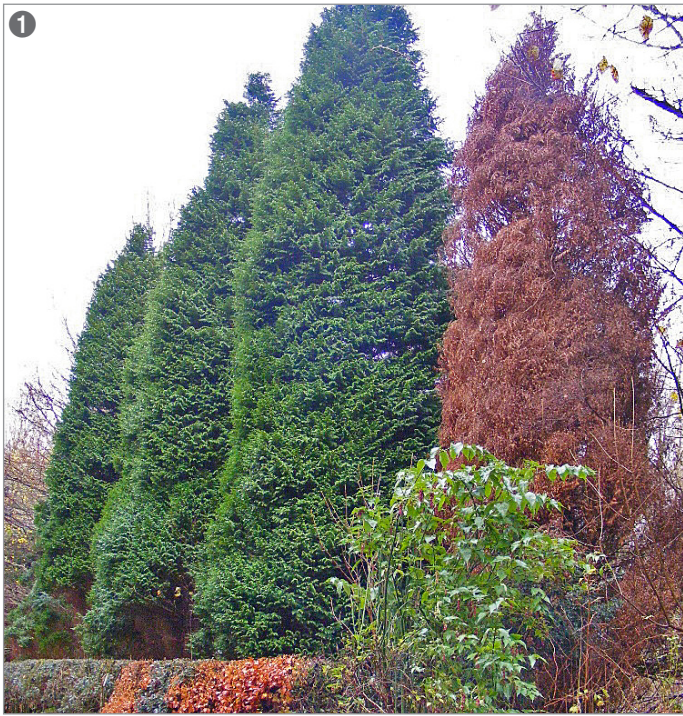
The pathogen also occasionally attacks the stem or branches of trees, causing discrete aerial infections where the foliage turns bronze or brown in large, isolated patches in the crown (2).

Wood/bark

When the outer bark is cut away at the base of infected trees a discoloured phloem (inner bark) is revealed. It is usually cinnamon brown in colour and there is a distinct colour difference between the infected and still healthy tissue (3).

Other disorders of Lawson cypress

Lawson cypress is also susceptible to other root-infecting pathogens such as *Phytophthora cambivora* or *Armillaria* which can cause similar symptoms but are not notifiable diseases.



Action to contain the disease

Infected trees are felled and destroyed on site, either by burning, or chipping and deep burial – provided that no other Lawson cypress trees are in the vicinity. Where appropriate, disinfectant mats are placed at entry/exit points from woodlands used by the public, and staff and visitors are asked to use them to kill any spores that might have been picked up on footwear. Notices are also erected at public sites to inform visitors of the infection and to encourage them to observe sensible biosecurity measures, for example keeping to footpaths, keeping dogs on leads, and not taking cuttings from plants in the woodland.

How you can help

Phytophthora lateralis is a notifiable disease. You should report suspected cases to the Plant Health authorities. Further guidance on identifying Lawson cypress trees and disease symptoms is available from: www.forestry.gov.uk/pestsanddiseases

You can also find and follow the general advice on sensible biosecurity measures from: www.forestry.gov.uk/biosecurity

At outbreak sites you should use the disinfectant mats provided at entry/exit points to kill any spores of the pathogen that have been picked up on your footwear.

Reporting the disease

If the suspected case involves trees in a private garden or hedgerow, you should consult a reputable arborist who will be able to advise on whether the Plant Health authorities need to be notified. The Arboricultural Association can help you find a local arborist, visit www.trees.org.uk for more information.

If the suspected case involves a number of trees in an estate or a public site such as a park or churchyard, especially where high numbers of visitors pose a high risk of spreading the disease, you should report it to the Forestry Commission via the Tree Alert page at: www.forestry.gov.uk/treealert

If you are a nursery owner or involved in a business handling young trees and planting stock, you should report suspected cases of infected trees directly to the relevant plant health authority (Fera or Scottish Government) – see Contacts below.

For more information on *Phytophthora lateralis*

Visit our website at www.forestry.gov.uk/pestsanddiseases for the latest information on *Phytophthora lateralis* and other tree pests and diseases. A guide to identifying Lawson cypress trees and disease symptoms is also available.

You can also download our free Tree Alert app to your smartphone or tablet via the App Store and Google play.

Contacts and plant health authorities

- Forestry Commission (Plant Health)
www.forestry.gov.uk/planthealth
- Fera (Tree Health and Plant Biosecurity Action)
www.fera.defra.gov.uk/treehealth
- Scottish Government (Plant health)
www.scotland.gov.uk/planthealth