

Pine pitch canker

Pine pitch canker, also known as pitch or pitch pine canker, is a serious canker disease of pines and Douglas fir caused by the fungus *Fusarium circinatum*. The disease affects trees in planted forests, nurseries, parks and gardens. In plantations, the disease leads to reduced growth and cone yield and can kill trees. It will also kill tree seedlings in nurseries. Pine pitch canker can have wider impacts in the landscape affecting recreational uses, tourism, and the aesthetic appearance of trees in parks and gardens. The fungus is thought to be native to Central America, but is highly damaging to some pine species elsewhere in the world, including parts of Europe, and further spread is likely. It is not present in Britain but there is a risk it could establish in the southeast if introduced.



Distribution and hosts

Pine pitch canker was first identified in the 1940s on pines in North Carolina. It has since been found in parts of North, Central and South America, Asia (Japan, Korea, Iraq) and South Africa. From the early 2000s it has also been reported from southern Europe (Spain, France, Portugal and Italy), most often occurring in coastal areas. More than 45 species of pine can be affected by pine pitch canker, including lodgepole pine (*Pinus contorta*), radiata pine (*Pinus radiata*) and Scots pine (*Pinus sylvestris*), as well as Douglas fir (*Pseudotsuga menziesii*).

How the disease spreads

The fungus spreads by various natural means (wind, wind-blown rain, insects and other animals that can carry spores). It infects healthy trees via wounds created during forest operations or through wind or insect damage. Over longer distances it can be spread on contaminated seed, soil and infected planting stock or wood products. Human activity, including the use of contaminated machinery and nursery equipment, plays a very significant part in disease spread. The climate in the UK is unlikely to be suitable for the pathogen to establish itself, with the exception of the south east. However, there is a longer term risk due to climate change.

What to look out for

Pine pitch canker caused by the fungus *Fusarium circinatum* (also known as *Gibberella circinata*) can kill pine trees and damage Douglas fir. Infected trees grow slowly and suffer serious branch cankers.

Symptoms on young plants and seedlings

Fusarium circinatum can infect roots and kill seedlings. Seedlings killed before or shortly after emergence generally do not have distinctive symptoms ❶. Older seedlings show dieback of basal needles, stem lesions and resin exudation. Lesions may eventually girdle the seedling stem causing wilting and fading of foliage from green to yellow.

Symptoms on mature trees

The aerial phase of the disease usually starts with small cankers that girdle and kill branch tips ❷ with more serious lesions girdling branches. Repeated infections lead to crown dieback ❸ and conspicuous resin (pitch) exudation ❹ which is usually associated with the cankers on branches and trunks. Diseased trees can be severely weakened and suffer top kill (often seen in radiata pine) due to girdling of the trunk and/or attack by bark beetles.



Action to control the disease

Pine pitch canker is not present in the UK and measures against import consignments which pose a risk (i.e. pine and Douglas fir planting stock, and seeds and cones for propagation purposes) reduce the probability of entry. Currently there is no single means of controlling pine pitch canker, and an integrated disease management approach, combining the use of disease-free seeds and compost, appropriate nursery and silvicultural practices including sanitation of all machinery and equipment, is used to minimise the risk of spread and reduce disease impacts.

How you can help

You can help us gather information about the health of our trees, woodlands and forests by reporting signs of tree pests and diseases. *Fusarium circinatum* is a quarantine organism so there is an obligation to report any suspect trees or seedlings.

Disorders with similar symptoms

There are also other disorders of pine trees in Britain that can cause similar symptoms to pine pitch canker.

- Injuries and pruning wounds can cause copious resin exudation on some pine species.
- Brown shoots on current year's growth may be due to mining activities of the pine shoot beetle *Tomicus piniperda* and is relatively common on Scots pine.
- Some [shoot diseases of pine](#) can also cause browning and dieback of shoots on pine trees.

Reporting the disease

Report suspect trees to the Forestry Commission via the Tree Alert page at: www.forestry.gov.uk/treealert. Please supply photos, full details of the location, contact details and details about the age of the tree or tree seedling.

For more information

To find out more about tree pests and diseases in the UK: www.forestry.gov.uk/pestsanddiseases

For help with pest and disease diagnosis and other tree health issues, contact the Forest Research Tree Health Diagnostic and Advisory Service: www.forestry.gov.uk/fr/ddas

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

Contacts and plant health authorities

- Forestry Commission (Plant Health) www.forestry.gov.uk/planthealth
- APHA (Animal and Plant Health Agency) www.gov.uk/government/organisations/animal-and-plant-health-agency
- Scottish Government (Plant Health) www.scotland.gov.uk/planthealth