



Pine (*Pinus* spp) diseases



Please note, for more details on the symptoms described for the organisms, scan the QR code to access the accompanying poster.

Dothistroma needle blight (*Dothistroma septosporum*)



Introduction

Dothistroma needle blight (DNB) is caused by the fungus *Dothistroma septosporum* and is an economically important disease of conifer trees and particularly pines. It is also known as red band needle blight because of the colourful symptoms on pine needles.

Hosts

DNB is mostly a pine tree disease. In the UK it has been found on Corsican pine (*P. nigra*), lodgepole pine (*P. contorta*), Scots pine (*P. sylvestris*), Ponderosa pine (*P. ponderosa*) and bishop pine (*P. muricata*). As of 2022, other conifer trees appear to have low susceptibility (i.e. *Larix* spp., *Abies* spp., *Tsuga* spp., *Picea* spp. and *Pseudotsuga* spp.).

Biology/description

The fungus reproduces by forming small, black fruit bodies on the needles within the red bands seen in the infected needles. Spores are released from these, and if they land on a susceptible host, they germinate on the needle surface and grow through the stomata. The critical period for infection is from late spring to late summer.

Symptoms

See accompanying Pine diseases poster via the QR code at the top.

More information and how to report

<https://www.forestresearch.gov.uk/tools-and-resources/fthr/pest-and-disease-resources/dothistroma-needle-blight-dothistroma-septosporum/>

Pitch canker of pine

(*Fusarium circinatum*)



Introduction

Poses a serious threat to all pines, although prevalent in Central and North America there are limited reports around the world. It has only recently introduced to Europe, where in the Iberian Peninsula it has had caused considerable damage.

Hosts

All pines species are susceptible with occasional records on other conifers.

Biology/description

It is caused by a fungus that produces a range of asexual and sexual spores that may be airborne, soilborne, dispersed by rain splash or vectored by flying insects. It is also known to be seedborne and can live harmlessly as an endophyte in grasses.

Symptoms

See accompanying Pine diseases poster via the QR code at the top.

More information and how to report

<https://gd.eppo.int/taxon/GIBBCI>

<https://www.forestresearch.gov.uk/tools-and-resources/fthr/pest-and-disease-resources/pitch-canker-of-pine-fusarium-circinatum/>

Pine rusts

(*Cronartium*, *Endocronartium* and *Coleosporium* spp)



Introduction

Several different fungal genera infect pine species around the world causing damage to all aerial parts of the tree. Several species have been accidentally introduced to new regions causing significant damage as typified by white pine blister rust (*Cronartium ribicola*) and hence why so many different pine rusts are regulated organisms. Rusts have complex lifecycles with up to 5 different spore stages alternating between pine and another cultivated or wild herbaceous species.

Hosts

All pines species, but with varying susceptibility dependent on the species of rust of concern. For example, 5 needle pines are susceptible to *C. ribicola*, the alternate hosts are *Ribes* spp. (hence the other common names of currant or gooseberry rust).

Biology/description

Typically, in spring white to yellow blisters produce bright yellow spores (aeciospores) that are released into the air and can travel considerable distances. These spores cannot infect pines but can infect leaves of *Ribes* species. After several weeks, orange pustules appear on the undersides of leaves and release a further spore type (urediniospores) that continue to multiply the infection on this host. In late summer, the fungus produces a further spore stage (teliospores) that in wet conditions germinate to produce another spore stage (basidiospores) that infect pine needles. The fungus grows down the needle into the bark to start the formation of a stem canker and so completing the cycle.

Symptoms

See accompanying Pine disease poster via the QR code at the top.

More information and how to report

<https://gd.eppo.int/taxon/CRONRI>

<https://gd.eppo.int/taxon/ENDCHA>

<https://gd.eppo.int/taxon/1COLSG>

<https://www.apsnet.org/edcenter/disandpath/fungalbasidio/pdlessons/Pages/WhitePine.aspx>

Acknowledgements

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