Sirococcus blight (*Sirococcus tsugae*)

Introduction

Sirococcus blight disease is caused by the fungus *Sirococcus tsugae*. This fungus originates from North America, where it is known to cause defoliation, dieback and mortality in a broad spectrum of tree species of the *Cedrus* and *Tsuga* genera. Until recently, the fungus responsible for dieback on cedar (*Cedrus sp.*) in the UK would have been regarded as *Sirococcus conigenus*, which causes shoot blight on many conifers throughout the northern hemisphere. However, *S. conigenus* has been reported to comprise three distinct species, *S. conigenus*, *S. tsugae*, and *S. piceicola*.

The species considered as *S. tsugae*, is now found in Western North America, and Northeastern and Southeastern USA. It was first reported in 2013 the UK, where it is now present in England, Scotland, Wales and North Ireland. It has been also reported in Germany in 2014 and Belgium in 2018 [see distribution].

The conidia (asexual spores) of the fungus are primarily dispersed locally through rain splash, although it is likely that strong winds can facilitate their dispersal over longer distances. Probably, the fungus can jump to other locations via transportation of contaminated dead or life plant material.

Host

Cedars and hemlocks (***Cedrus* and *Tsuga* spp.** respectively). *Sirococcus tsugae* infection has been confirmed on Atlas cedar (*Cedrus atlantica*), Deodar cedar (*C. deodara*), Western hemlock (*Tsuga heterophylla*), Mountain hemlock (*T. mertensiana*), and Eastern hemlock (*T. canadensis*).

Cedar and hemlock species are valuable ornamental and forestry species in the UK. This infection could cause considerable damage in public and private gardens, as well as economic losses.

Biology

Sirococcus tsugae is an asexually reproducing fungus. It produces spherical fruiting structures with apical openings (pycnidia). Inside the pycnidia, the conidia (asexual non-motile spores) develop. New infections occur when the conidia are released from the fruiting bodies and then dispersed through rain splash or wind.

The fungus can attack seedlings and saplings, as well as mature trees. New and young shoots are particularly susceptible. Therefore, primary infections occur mainly in spring and early summer when there is also a higher abundance of viable conidia. They fungus can survive in infected dead plant material, often residing in needles, stems and plant litter underneath affected trees.

Symptoms

For details of the symptoms, scan or click on the QR code to access the accompanying poster.

More information

- EPPO Global Database: https://gd.eppo.int/taxon/SIROTS
- Forest Research: https://www.forestresearch.gov.uk/tools-and-resources/fthr/pest-and-disease-resources/sirococcus-blight-sirococcus-tsugae/
- Royal Horticultural Society: https://www.rhs.org.uk/disease/sirococcus-blight
- Forest Pathology: https://doi.org/10.1111/j.1439-0329.2007.00529.x
- APS Publications: https://doi.org/10.1094/PDIS-04-15-0378-PDN

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