
Dothichiza populea Sacc. & Briosi, in Saccardo, Sylloge Fungorum 3: 672, 1884.

Stromata marked by small swellings along the overlying periderm, developing in the cortex, splitting the periderm to reveal the stromatal wall; dehiscence by irregular rupture of the upper stromatal wall, leading to formation of a wide aperture; in damp conditions tendrils or pustules of pale brown spores are extruded; forming singly in the cortex, 700–800 µm diam.; irregularly flattened globose, in section the outer wall of indefinite thickness, consisting of a mixture of host and dark fungal tissue; the inner layer c. 10 µm thick, formed of several layers of compressed, hyaline cells; wall of locule irregularly convoluted and covered with a palisade of narrow proliferating phialides. Conidia appearing hyaline when dispersed, obovoid to napiform, non-septate, thick-walled, truncate at the base, 9–11 × 7–8 µm.

Perithecia forming in groups in the cortex, pushing the overlying periderm up into a pustule; venters globose or flattened globose, 500–600 µm diam., the necks dark cylindrical and inclined together to penetrate jointly the periderm, protruding just slightly above the pustule; wall of 2 layers, the outer formed of isodiametric, thick-walled, brown cells, the inner of flattened, hyaline, thin-walled cells. Periphyses abundant, lining the top of the locule and the ostiolar canal. Asci clavate, uniseriately, with an apical ring, 70–85 × 12–15 µm, tending to separate from the ascogenous hyphae. Ascospores hyaline, ellipsoid, straight or slightly curved, 1-septate, slightly constricted at the central septum, 16–23 × 6–9 µm.

HOSTS: Poplar, willow. A wide range of poplar species are more or less susceptible, with members of the taclamahaca and algeros groups principally affected. Populus alba var. pyramidalis is very susceptible in Britain and P. alba and P. tremula are tolerant; complete resistance is unknown in the genus: The fungus has been recorded on cricket bat willow in Belgium.

DISEASE: Dothichiza canker, Dorhichiza dieback, poplar canker.

The conidial state is the form of this fungus most commonly found associated with the dieback or canker of poplar. The fungus is a wound parasite unable to invade sound bark tissues, although very small wounds, such as scars left...
by bud scales, may permit infection (38, 341). Infection usually occurs in the winter, when bark moisture and turgor are lowest (36, 673; 37, 684). First signs are a discoloration of the cortex under the bark, which develops to a sunken, dead patch of bark, often at the base of twigs or at the junction of first-year and second-year wood. The lesion may have an unpleasant odour and later develops black, globose, pycnidia on the surface. The lesion may heal over in a single season but it can spread to cause severe damage or death of the host. Injury is believed to be due to toxin formation as well as physical girdling by the canker (35, 797; 38, 103). The crowns of old trees or young plants in nurseries and plantations are mainly affected. The disease may be distinguished from that caused by Valsa sordida Nits. by its larger conidia and larger and less frequent stromata in infected tissues.


PHYSIOLOGIC SPECIALIZATION: None reported.

TRANSMISSION: Mainly by airborne splash-dispersed conidia.

NOTES: The disease was first recorded early in the century in Europe and has gradually spread since then. It is now one of the most important poplar diseases on mainland Europe, particularly in Germany. Although useful differences in susceptibility between species and cultivars have been reported, these accounts often disagree probably because of the pronounced environmental effect on infection and the disease. Control is best attempted by correct cultural practices, aimed to maintain vigorous host growth. These include the avoidance of weed growth in young plantations, interplanting with vegetable crops and confining of pruning to late summer to ensure healthy tissue formation before the winter growth check. Fungicides (copper oxychloride, Bordeaux mixture) have been recommended for the disease in nurseries.


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