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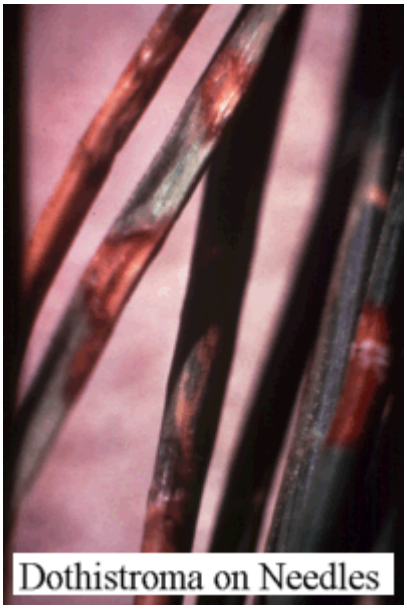
**Problem:** Dothistroma Needle Blight **-** *Mycosphaerella pini*


Dothistroma on Austrian Pine


Dothistroma on Needles

**Host Plants:** Austrian, ponderosa and mugo pines

**Description:** Dothistroma needle blight is a common and serious disease of Austrian and Ponderosa pines planted for windbreak and ornamental purposes. Mugo pine is also susceptible to the disease, but Scots pine is considered resistant. The disease causes premature dropping of pine needles the year following infection. Because Austrian and Ponderosa pines typically retain needles for three or four years, premature loss of the foliage results in a reduced photosynthetic area and a loss of tree vigor. Extensive defoliation over several years may kill the tree.

Symptoms of Dothistroma needle blight are evident first in late summer or early fall. Diseased needles exhibit dark green bands or scattered yellow to tan spots. The spots often enlarge and develop into red bands that encircle the needle. The red bands may be bordered by a light-yellow region. The tip of the needle beyond the red band eventually turns brown; the needle base remains green. Infection is most common to one-, two- or three-year-old needles, but current season needles also may show symptoms. Typically, the disease is most severe in the lower portion of the tree crown.

In late winter or early spring, small black fruiting structures of the disease-causing fungus rupture through dead portions of the needle. The green base of the needle turns brown, and dead needles are cast prematurely throughout the spring and summer. Loss of older needles and the production of new shoot growth in the spring give the branch a tufted appearance. Newly developed needles are resistant at first

but become susceptible by mid-summer. Older needles are susceptible throughout the growing season. Symptoms of Dothistroma needle blight may resemble needle scorching or injury caused by chemical sprays. Heavy loss of older, inner needles plus the appearance of small black fruiting structures on needles in the spring are good diagnostic symptoms and signs of Dothistroma needle blight.

**Recommendations:** Some copper-containing fungicides can be used for control of Dothistroma needle blight. A single fungicide application in early June normally will protect foliage from infection. There is some risk in a single application since susceptible older needles are not protected in late May. Two fungicide applications in mid-May and mid- to late-June provide a more complete and dependable control. Make sure all needles are covered thoroughly with the fungicide. It is a good idea to spray adjacent susceptible pines. It may take multiple years of application to bring the disease under control. Copper fungicides suggested for control include Camelot, Monterey Liqui-Cop and Bonide Liquid Copper Concentrate.

Collection and removal of diseased needles on the ground around individual trees may reduce the severity of infection the following year. Nevertheless, sanitation probably will not eliminate the disease because diseased needles bearing fruiting structures of the fungus sometimes remain attached to the tree. Removal of dead needles is impractical in windbreak plantings.

In areas where Dothistroma needle blight is severe, consider planting a resistant type of tree. Work at the University of Nebraska indicates considerable variation in susceptibility to Dothistroma needle blight in Austrian and ponderosa pines. Austrian pines from a seed source in Bosnia are very resistant to the disease, while ponderosa pine seedlings from several seed sources in the Rocky Mountain region also have shown a high degree of resistance.

## References:

1. Pine Diseases In Kansas: Tip Blight, Dothistroma Needle Blight, and Pine, K-State Research and Extension, publication L-722.

**Last Update:** 10/25/2023

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