Lophodermium needle cast

Lophodermium seditiosum is an aggressive pathogen on two-, three-, and some five-needle pine in certain growing situations, while other *Lophodermium* species are weak pathogens or saprophytes on a number of conifers.

Host plants:

Lophodermium seditiosum infects young needles of Austrian (*Pinus nigra*), mugo (*P. mugo*), red (*P. resinosa*), and Scotch pine (*P. sylvestris*) and kills them within a year. On the other hand, several other *Lophodermium* species are weak pathogens that merely cause premature browning and loss of older needles on pine, spruce and fir.

Description:

The fungus forms gray-black football-shaped fruiting structures just under the outer surface of infected needles cast in the duff or lodged in the branches of infected trees. When *Lophodermium seditiosum* infects the current season's needles, they initially develop brown spots or bands with yellow edges but eventually entire needles turn brown, droop and remain attached or drop to the ground prematurely.

Lophodermium needle cast on mugo pine

Close-up of *Lophodermium* fruiting structures

Photos: (left) R. K. Jones and (right) J. Staley, *Diseases of Woody Ornamentals and Trees*. APS Press.

Lophodermium needle cast is more common in nurseries, tree plantations, on newly transplanted pines from nurseries and plantations, as well as hedgerows and windbreaks. Infections tend to be more severe where there is crowding, shading, and other conditions that prolong needle wetness. Heavily infected trees have tufts of green needles at the ends of branches with most of the older needles browned and absent.

Disease cycle:

Fruiting structures release spores from dead needles in late summer to early fall. The spores blow or splash onto wet needles where they germinate and directly penetrate the current season's needles. During the winter to early spring, spotting appears on infected needles. By mid to late spring, needles are entirely brown and premature loss occurs in early summer. There is one cycle of disease infection each year.

Management strategies:

The longer needles are wet the more infections occur. Space trees adequately and control tall weeds around them to increase air circulation and sunlight penetration. Irrigate early in the day so needles dry more quickly in the afternoon. Replace infected trees with species not known to be hosts of Lophodermium needle cast. While most Scotch pines are readily infected, resistant cultivars are available. Where there was no infection of white and jack pine by *Lophodermium seditiosum*, red pine was highly susceptible only in the seedling stage. Apply

registered fungicides to high value trees beginning in July and repeat at labeled intervals if wet conditions prevail.

Daniel H. Gillman, Plant Pathologist
UMass Extension Landscape, Nursery & Urban Forestry Program
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