EB1743

PLANT DISEASES

COOPERATIVE EXTENSION
Washington State University

LOPHODERMIUM NEEDLE CAST OF PINE

The fungus disease Lophodermium needle cast occurs on pine in western Washington. Scotch pine (*Pinus sylvestris*), red pine (*P. resinosa*), and Monterey pine (*P. radiata*) are considered to be more susceptible (more likely to get the disease) than other pines, but the fungus will attack all pine species. The short-needle varieties of Scotch pine are highly susceptible.

In the Pacific Northwest, at least three types of the fungus *Lophodermium* can cause damage: the first type is responsible for damage to last year's needles; the second causes damage to needles from two years ago; and, a third causes damage to the growth from three and four years ago. Older growth occurs more toward the center of the tree. As a result, damage to it is less obvious than damage to the most recent growth.

Small, pale spots on the needles are the first symptom of this disease. As the spots enlarge, they become yellow, and then reddish brown. Gradually the entire needle turns brown and dies. Characteristic fungus fruiting bodies appear on the brown needles before the needles are dropped, or during the winter after the needles have fallen
(Fig. 1). The black, football-shaped fruiting bodies are easily seen, and contain the spores of the fungus. The spores are released through a longitudinal slit in the center of the fruiting body (Fig. 2). When the spores infect other needles, the disease cycle is repeated.

In addition to the black fruiting bodies, smaller, brown or tan fruiting bodies can be formed. These are not easily seen. Spores from this stage do not infect pine. Their role has not been determined. Narrow, black bands may also appear on the infected, dead needles.

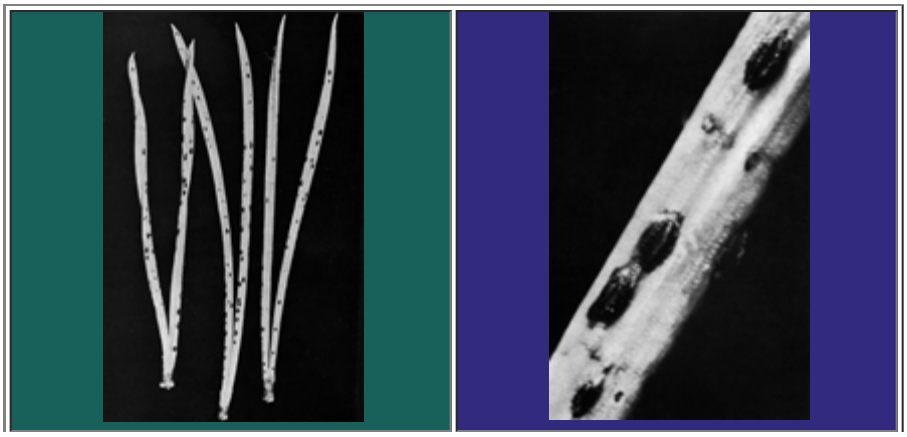

Fig. 1. Pine needles infected by *Lophodermium*, showing characteristic black fruiting bodies of the fungus.	**Fig. 2.** Close-up of football-shaped fruiting bodies of *Lophodermium* on pine needles. Spores are released from the slit located in the center.

Management

Cultural

When practical, diseased needles which have fallen and have piled up on branches or under trees should be raked up and destroyed. This will reduce the number of spores in the vicinity of the tree, and should help reduce the amount of future infection. Also, fungicide applications are more effective in preventing disease when the number of spores has been significantly reduced. When an affected tree is in an area where there are no other pines nearby, it is possible to keep the disease under control without fungicide application by thorough removal of dead needles from the tree and ground. The removed, dead needles should be destroyed by burning, depositing in the garbage, or in some other suitable way. Do *not* throw them on a compost pile or use them for mulching.

Chemical

Several factors must be considered before a chemical control procedure is followed. First, the type of *Lophodermium* must be determined. If only the older needles of the tree are affected, no control may be needed or desired. The disease on the most recently formed needles is the most destructive and usually requires fungicide applications. Second, the degree of desired control must be determined. For a high degree of control, monthly sprays throughout the year may be necessary; however, fairly good control has been achieved by monthly sprays during the late summer and fall (August to October). The fungicide label will indicate whether an additional spreader sticker is needed to give good coverage on the waxy needles.

Ralph S. Byther, Extension Plant Pathologist (retired), and Roy M. Davidson, Jr., former Agricultural Research Technologist, WSU Puyallup.

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