



Lophodermium Needle Cast of Pine: *Lophodermium seditiosum*

Introduction

Several *Lophodermium* spp. may develop on needles of pine and other conifers. Although many species may develop as saprophytes on needles that have died due to other problems, or may be secondary weak pathogens that attack plants that are otherwise weakened or stressed, the fungus *L. seditiosum* is the most serious of the group, and can be a problem in both nurseries and Christmas tree plantations. *Lophodermium seditiosum* is a primary pathogen that may attack all two- and three-needle pines as well as a few five-needle pines. Scots, Austrian and red pines are among the more susceptible species.

Disease Cycle

The fungus begins active sporulation in early to mid summer (starting about July 10 in New York). Infectious spores develop within minute, black, football-shaped fruiting bodies that develop on recently killed needles. Moist conditions promote release of these spores, and they are shot out of the fruiting bodies and up into the air where they are carried by the wind to new sites of infection on that or adjacent trees

Infectious spores may then continue to be produced until late in the season.

Symptoms and Signs

In the spring, *L. seditiosum* causes yellowing and then browning of needles infected the previous year.

Needles may be cast any time after this symptom appears. Symptoms are usually most severe on the lower part of the crown because that is where favorable conditions of cool temperatures and free moisture on the needles are most likely to occur and persist. Infectious spores may then continue to be produced until late in the season.



Fig 1. Yellowing and browning of needles infected the previous year.



Figure 2: Fruiting bodies on recently killed needles. Note that needles are still partially green

Management Strategies

To try to prevent a Lophodermium infection from getting started, keep weeds under control and plant on south-facing slopes. Avoid planting in valleys or other low lying areas. Good air flow keeps trees drier and helps to prevent infection. Remove heavily infected trees to limit inoculum and remove wind-break trees of the same species as your crop trees to minimize inoculum production. Resistance to this disease varies among pines. Scots pine from different seed sources show differences in susceptibility, while red pine seems to be most susceptible in the seedling stage.

Pesticides are available for controlling this disease once it becomes established in a plantation. It requires four separate treatments to control this disease, beginning in early July and continuing, monthly, through early October. (Fig. 2)

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READ THE LABEL BEFORE APPLYING ANY PESTICIDE! Changes in pesticide regulations occur constantly. All pesticides distributed, sold, and/or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension Specialist or your regional DEC office.

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