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Branching out

from the Canadian Forest Service
Laurentian Forestry Centre

A SUCCESSFUL TREATMENT FOR
SCLERODERRIS CANKER IN RED PINE

Canopy closure results in natural pruning of lower branches, eliminating the last infected shoots.
Photo: Gaston Laflamme

Scleroderris canker, a disease caused by the European strain of the fungus *Gremmeniella abietina*, is highly virulent in red pine *(Pinus resinosa)* plantations. When nothing is done to eradicate the disease, the survival of infected plantations is compromised.

Researchers with the Canadian Forest Service – Laurentian Forestry Centre have devised a pruning treatment that can stop an epiphytotic (an outbreak of plant disease in epidemic proportions).

In the early 1980s, foresters expressed concern about the spread of the exotic causal agent of Scleroderris canker in red pine plantations in the Outaouais region and north of Montreal.

A systematic pruning approach was tested in a plantation located north of Gatineau[1]. It involved treating all the trees by pruning out infected branches and those likely to succumb to attack and then tracking disease incidence over a period of several years.

In 1982, this treatment was applied by pruning the branches from the lower four whorls of 12-year-old pines. A year later, disease incidence was found to have dropped to 22% from 67%.

Red pine pruned in 1982
(i: height of infection, p: height of pruning).
Photo: Gaston Laflamme

1 In collaboration with the Quebec Department of Natural Resources (Ministère des Ressources naturelles, de la Faune et des Parcs du Québec)

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A SUCCESSFUL TREATMENT FOR **SCLERODERRIS CANKER IN RED PINE**

In 1984 and 1985, two complementary treatments involving branch pruning and felling of dead trees helped to reduce disease incidence to the endemic level[2]. Crown closure in 1995 appears to have put an end to the infections by inducing the process of self-pruning.

To avoid the need for repeated treatment, complete pruning of the lower half, or even two thirds, if necessary, of all trees is recommended in infected plantations less than 20 years old. The pruned branches can be left on the ground, but dead trees in the plantation should be felled because standing dead trees help to maintain the reservoir of pathogens present on the site.

Foresters now have a simple technique they can use to eradicate Scleroderris canker within a few years, since the disease does not spread over long distances nor does it spread as rapidly as once believed. These general recommendations will soon be expanded on as new information is obtained from trials conducted in some 50 red pine plantations and validation of the results in two severely infected plantations.

The European strain of *G. abietina* usually produces only conidia (spores), which can disseminate the disease over short distances (less than 5 m).

Presumed infection centre (1982). Infected trees were cut.
Photo: Gaston Laflamme

The same site in 1995. Treatment application resulted in open woodland.
Photo: Gaston Laflamme

FOR MORE INFORMATION, PLEASE CONTACT:

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USEFUL LINK

Insects and Diseases of Canada's Forests
www.cfl.scf.rncan.gc.ca/IMFC-IDCF/

2 Endemic: the causal pathogen has become established, but may not cause epiphytotics.

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