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Gremmeniella canker of pine

The fungus *Gremmeniella abietina* (Lagerb.) Morelet has been known in Canada only since 1964. All pines are probably susceptible to attack by this pathogen but the most severely damaged species are red pine, jack pine and Scots pine.

In the spring, *Gremmeniella* produces reproductive structures on diseased pines. Within these structures spores develop. Spores are the microscopic infective particles of the fungus, which issue from the reproductive structures on diseased trees during moist weather and are carried to healthy pines by wind, water, and possibly animals. If the foliage of the healthy pines remains moist for about a day during warm spring weather the spores will germinate and grow into the healthy pine, causing it to become diseased.



Gremmeniella infected seedling

Usually seedlings do not survive more than a year after infection. The disease condition may be recognized by typical symptoms: needles are often downturned after the snow melts, become red-brown at the needle bases soon afterwards, and by midsummer are uniformly brown. *Gremmeniella* then passes through the branch and into the mainstem where it attacks the growing layers of the tree. Smaller and less vigorous trees often die when tissues are killed entirely around the stem (girdling), or the tree may simply be weakened to such an extent that it does not survive the pressure of wind and snow. Larger and more vigorous juvenile trees often survive infection of the mainstem, although patches of growing layers are lost, and as a result openings are left in the bark. It is from these openings or "cankers" that the disease derives its name. If the tree survives and reaches the age at which rapid increase in diameter growth occurs (20 years and more), the canker is usually overgrown with healthy tissue.

Gremmeniella is too widely dispersed in the forest to be eliminated but certain control measures will reduce damage to forest crops. Seedlings should be examined before they are removed from the nursery and burned if infected. Fungicides may also be used in situations where application is possible following each



Gremmeniella infected sapling



Cankered red pine

rain. Plantations or other outplantings should be examined 2 to 3 years after establishment while infected trees can still be pulled by hand and, again, infected trees should be burned. In later years, pruning will reduce the number of spores produced on infected trees and, consequently, the danger of infection to other trees.

For currently acceptable fungicides consult an appropriate government official.

C. E. Dorworth

Copies of this leaflet can be obtained from the Centre's Information Office.

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