Forest Leaflet 1: Silverleaf
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Canada

Silverleaf

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Distribution and Hosts

In recent years, silverleaf has been recognized as one of the most common and destructive diseases of ornamental and fruit trees in the prairie provinces. Silverleaf may severely damage or kill mountain-ash, maple, hawthorn, poplar, willow, birch, apple, crab apple, cherry, pear, and plum. Cotoneaster, nanking cherry, rose, and gooseberry are some of the smaller plants affected by silverleaf.

Symptoms and Damage

The first noticeable symptom of the disease is a silvering or leaden lustre of the leaves (hence the name silverleaf). This is usually confined to one or several branches of a tree, although the whole tree can show the symptom. Browning of the leaf midrib and leaf margins are the later symptoms. Each succeeding year more branches are affected, until the tree gradually loses vigor and eventually dies. Infected branches may die within a year, and an entire tree can die in 2 or 3 years.

Causal Agent

Silverleaf is caused by a fungus (*Stereum purpureum* [Pers. ex Fr.] Fr. = *Chondrostereum purpureum* [Fr.] Pouzar) that may enter the tree or shrub through wounds and infect the sapwood. The fungus spreads upward and downward within the wood tissues and may spread from one tree to another via root grafting. An unidentified toxin produced by the fungus is considered to be responsible for the unique silverleaf symptom and subsequent killing of the affected tree.

The causal fungus can be identified by examining the small fruiting structure that usually occurs at the bottom of the affected tree and at the base of dead shoots. This structure is characterized by a cluster of shelflike brackets (5–20 mm wide) with a grayish white, hairy or velvety upper surface and a purplish, smooth lower surface where microscopic spores are produced and released into the air. If there are no fruiting structures, isolation and microscopic examination of affected tissues must be carried out in a laboratory for positive identification.

Prevention and Control

There is no known chemical cure for silverleaf. The recommended treatment is to prune diseased branches as soon as the symptoms are apparent. The branches should be cut back well below the diseased area (dark brown discoloration) to the healthy wood.

The infection often occurs at the bottom of the tree, in which case pruning is not possible. Severely infected, dying, and dead trees should be removed and burned immediately. Dead woody material or stumps with fruiting structures of the pathogen should be similarly treated to prevent the disease from spreading.

New infection usually occurs through stem wounds; therefore, trees should be protected from mechanical injuries such as those caused by lawn mowers and other garden tools. Broken or dead branches resulting from high wind, hail, winter injuries, or other causes should be pruned properly to reduce the chance of new infection. Good cultural practice keeps trees in vigorous condition and reduces the incidence of silverleaf disease.