Warning: In order to prevent the infection of healthy tissue, pruning tools should be dipped after each cut into a disinfectant/water (e.g., Lysol/water) solution at 50 mL/L or household bleach/water solution at 100 mL/L.

Trees that are severely infected, with large cankers in the trunk, should be removed and burned immediately.

For the most recent information on chemicals available for control of this disease, call Agriculture Canada's Pesticides Directorate in Ottawa (toll-free) at 1-800-267-6315.

Chemical pesticides are toxic to humans, animals, birds, fish, and beneficial insects. Follow all instructions and precautions listed by the manufacturer.

Forest Leaflet 4: Fire blight
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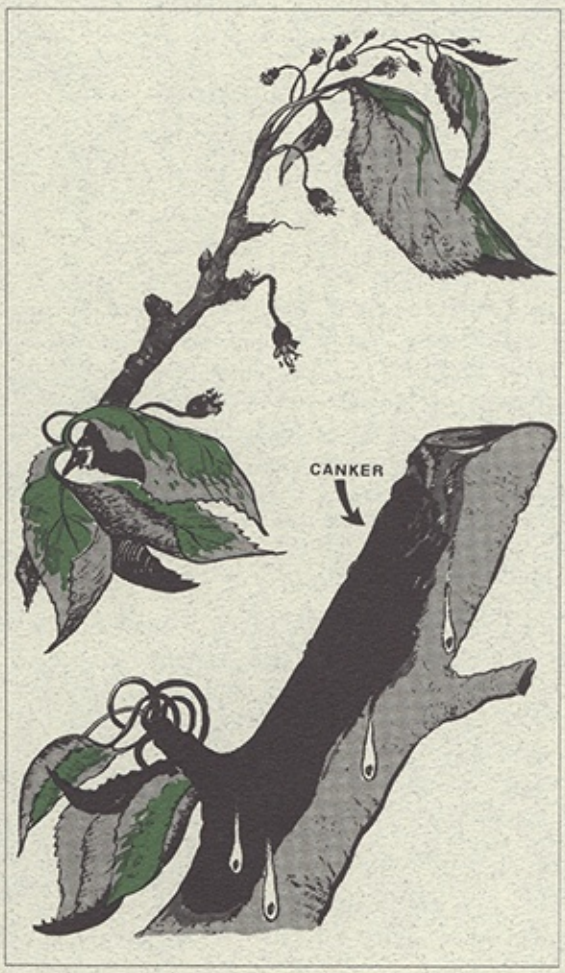
Fire blight



Forestry Canada Forêts Canada

Distribution and Hosts

Fire blight is probably the most destructive disease of fruit trees in North America. It occurs sporadically and unpredictably and occasionally reaches epidemic levels. A severe outbreak can seriously damage or kill mature pear, apple, or crab apple trees in one season. Mountain-ash is equally vulnerable to the disease and may suffer the same fate. Other ornamentals such as hawthorn, plum, chokecherry, saskatoon, cotoneaster, and spirea may also be affected.

Symptoms and Damage

In the spring, infected blossoms suddenly wilt and turn brown. Later, twigs and leaves also turn brown and appear to be scorched by fire, hence the common name. The affected leaves usually remain on the tree well into the winter. Young infected fruits become watery or oily in appearance and exude droplets of clear, milky, or amber-colored ooze. They later become leathery and turn brown, dark brown, or black, depending on the species. The shrivelled fruit usually remains attached to the tree.

Causal Agent

Fire blight is caused by a bacterium (*Erwinia amylovora* [Burrill] Windslow et al.) that may enter the tree through the blossoms, leaves, or stem wounds. Usually the disease is spread by bacteria that overwinter in hold-over cankers in the main stem and branches or infected twigs. In the spring, just when the blossoms begin to open, the cankers exude drops of bacterial ooze that are disseminated to the blossoms and young leaves principally by rain, heavy dew, or wind-blown mist. Fire blight may also be spread by pollinating insects such as bees; sucking, chewing, or boring insects; and unsanitary pruning tools. Warm temperatures (24–28°C) and high humidity are the optimal conditions for infection and disease development.

Prevention and Control

Preventive treatment of fruit trees and mountain-ash should be undertaken as a matter of course if fire blight is present in a neighborhood. Trees that have previously been infected and pruned of their diseased parts should also be treated to prevent new infections. Blossoms, the most susceptible part of the plant, can be protected by using a fungicide.

Additional preventive measures that should be taken are (1) avoiding the use of high-nitrogen fertilizers that promote succulent growth readily susceptible to fire blight, (2) removing root suckers from the base of the tree, and (3) after the flowers bloom, controlling leaf hoppers, aphids, and other leaf-feeding insects that may spread fire blight.

There is no chemical that can cure fire blight. Pruning of diseased twigs and branches is the only effective method of control. During the dormant season (late fall to early spring), all diseased branches should be pruned out and burned. The branches should be cut 25–45 cm below the diseased area, because bacteria may extend beyond the blighted portion. All pruning wounds, particularly those larger than 2.5 cm, should be covered with a reliable wound dressing or pruning paint.

During the growing season, any infected twigs or branches should be pruned by again cutting 25–45 cm below the infected area. Regular inspections should be made during the summer to detect and remove new infections, but excessive pruning should be avoided.