



Fireblight

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Fireblight is a very destructive disease on many species in the rose family, including **pear, crabapple, cotoneaster, mountain ash, hawthorn, pyracantha, spirea and rose**. Depending on the individual plant, cultural practices performed, and spring weather conditions, damage can range from death of one or more branch terminals to severe branch mortality and complete death of the plant.

The disease is most severe during warm, moist springs and on poorly drained sites. Young, vigorous plants, or those heavily fertilized with nitrogen, are usually most severely affected.

SYMPTOMS

The most characteristic and easily observed symptoms are wilting and blackening or browning of the blossoms and leaves on the terminal shoots. The affected plant parts remain attached to the terminal and appear as though scorched by fire (Figure 1).



Figure 1. Tip blight on pear

As the infection progresses into secondary branches, the bark blackens and cankers develop on the older, larger portions, particularly at the margins of living and dead tissue. A brown ooze develops at the site of these cankers during moist, warm weather.

The cambial region of infected branches initially appears water-soaked and reddish to reddish-brown in color. At death, the sapwood dries and becomes dark brown.



Old branch canker caused by fireblight

CAUSAL AGENTS

Fireblight is caused by the bacterium *Erwinia amylovora*. The organism overwinters in branch cankers at the margins of living and dead tissue. During periods of moist, warm weather in the spring, a brown ooze containing the bacteria is produced at these cankers. Wind, rain-splash and insects are responsible for the initial transport of the bacteria from the cankers to open blossoms, the primary infection site. Blossom-visiting insects are primarily responsible for secondary infections whereby the organism is transported from infected to healthy blossoms. Infection may also result from direct inoculation of terminal shoots. Sucking insects, including leafhoppers and aphids, and pruning tools are efficient wounding agents and transport mechanisms for the bacteria.

CONTROL

Many species and varieties of crabapple, cotoneaster apple, pyracantha, etc. are resistant to fireblight and should be used in landscape plantings when possible. Lists of such resistant varieties are available in arboriculture books or from local Extension Services.

Control of fireblight on susceptible stock is difficult and requires a comprehensive program of sanitation, proper cultural practices, and chemical spray applications in order that satisfactory results are attained.

Sanitation: Sanitation refers to the removal of infected terminals and branches from the host. Terminal infections are best pruned out when first noticed. Make cuts in the healthy wood well below the last observable symptom (approximately ten to twelve inches) and disinfect pruning tools often in alcohol or bleach. Branch infections should be removed during dry weather in the late summer or in the dormant season. Removal methods as outlined above are recommended.

Cultural Practices: Susceptible species should be planted on well-drained soil and the pH maintained at the recommended level for the species in question (neutral to slightly acidic for most members of the Rosaceae). Fertilization, when necessary, is best done in the late fall or early spring using a balanced fertilizer. DO NOT over-fertilize or use a high-nitrogen fertilizer. Prune often to avoid large pruning cuts and excessive opening of the crown, which promotes fast-growing suckers.

Chemical Spray Program: The application of bacterial sprays during the dormant season and at flowering have been very effective at reducing the incidence of fireblight, but in susceptible plants choosing the proper product, rates, and application timing is critical to successful control. Consult the Bartlett Research Laboratories or State Extension Service for specific intervals and rates.