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Nassau County

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Fire Blight

Fire blight is a bacterial disease that occurs on many species of the rose family including almond, apple, apricot, blackberry, cherry, chokecherry, cotoneaster, crabapple, firethorn (*pyracantha*), hawthorn, mountain-ash, pear, persimmon, plum, quince, raspberry, rose, spirea and walnut.

Symptoms

In late spring, sudden wilting of young leaves, blossoms and shoots occurs. The affected parts first appear water-soaked and then quickly turn brown to black but remain attached to the tree. The affected areas look as if they were burned by fire. The infection of shoots may progress down a small branch and start a dark, sunken canker in a large branch or in the main trunk. The inner bark in cankered areas also becomes water-soaked first and then turns from green to brown. In moist weather bacteria appear on the surface of cankers in pearly, sticky drops of ooze that are carried by wind-blown rain or insects to blossoms.

Integrated Pest Management (IPM) Considerations

IPM is a common sense approach to pest control and plant care. It employs a number of measures to prevent, control or reduce plant problems. These include using resistant plant varieties, proper plant selection and placement, good aftercare and biological and/or mechanical controls. As a last resort, after all other remedies have been explored, a pesticide* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

* *A pesticide is a substance that kills, or attempts to kill, a particular pest, e.g.* ***insect****icide,* ***fung****icide,* ***herb****icide, etc.*

Disease cycle

Fire blight is caused by the bacterium *Erwinia amylovora.* It remains in a dormant state in blighted twigs and at the edge of cankers during the winter and becomes active during warm spring rains. Bacterial growth results in the production of ooze on twigs and cankers that attracts flies, ants, aphids, bees, beetles and other insects. The pathogen is carried by these insects to the blossoms, foliage and twigs of healthy trees. Penetration of the host is gained through wounds and stomata of leaves and through wounds in branches. As the pathogen multiplies, infected blossoms and leaves shrivel and turn dark brown or black. The bacteria then move into small twigs, which also discolor. Eventually, the bacteria reaches large branches where cankers are formed. As the cankers enlarge they may girdle the stem. The bacteria in the infected tissues generally lie dormant in late summer and remain so until spring.

Control

Avoid overfertilization, especially heavy spring applications of nitrogen. Cut out cankers and blighted branches between November and March when tree is dry, making cuts several inches below the visible limits of infection. Disinfect tools between cuts. Prune to thin plants. Avoid crowding plants; allow air to circulate around and within the plants. Chemical pesticides may be available. If you choose to use a chemical pesticide, contact your local Cooperative Extension office for specific recommendations. Spray should be applied during flowering period, if disease occurred the previous year. Plant resistant species.

Sanitation measures such as prompt removal and destruction of all infected plant material will decrease the chances of new infections.

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