

Fireblight Disease of Trees and Shrubs

Spring rains are welcome in the Bakersfield area, but rain also makes conditions favorable for fireblight, a destructive disease affecting only some species and varieties of plants in the rose family. We do seem to be seeing more of this disease in recent years.

Fireblight takes its name from the blackened appearance of twigs and branches, which appear as though scorched by fire. If a tree or shrub contracts the disease, careful pruning may be needed to prevent death of sections of the canopy or even the whole plant. Only plants in the rose family can be affected, so problems in unrelated trees and shrubs, for example, elm, willow, redwood, etc., cannot be the result of fireblight.

Although most plant diseases are caused by fungi, fireblight is caused by *Erwinia amylovora* bacteria. Infection occurs during wet spring weather when splashing rain, wind, bees, and other insects contribute to spread the bacteria from old bark infections to blossoms and new leaves. As bacteria multiply, plant shoots suddenly wilt, with leaves showing patches of brown and twigs turning black. Shoot tips bend over into a hook shape as wilt progresses down a twig. As bacteria move further down the stem to larger wood, attached branches may wilt as water-conducting tissues are killed. Cankers, which are sunken areas of dead tissue, form on branches. During warm (70-85°F) wet weather bacteria mixed with sap ooze to the surface of these cankers and can spread to uninfected parts of the plant or nearby susceptible plants. Overhead irrigation will prolong the active period. As weather turns warmer and drier, bacterial activity ceases, but bacteria residing in wood are not killed and remain quiet until the following spring.

Susceptible plants can be killed in one season by fireblight. Edible pears and quince are extremely susceptible, while apples and crabapple are less so, with some varieties showing more susceptibility than others. Ornamental pear species and varieties vary in susceptibility, with most exhibiting low incidence of fireblight in Kern County. However, 'Aristocrat' ornamental pear is very susceptible and cannot be grown further north in the San Joaquin Valley, although it does well in Bakersfield. Occasionally, pyracantha, hawthorn, photinia, cotoneaster, or loquat may be affected, but damage is usually slight. Non rose-family members, such as camphor, redwood, ash, and oaks, cannot contract fireblight.

If the disease is progressing in a tree or shrub, pruning several inches below the infected wood can arrest further damage. During dry weather dead areas should be cut out of the tree several inches below the diseased twigs or cankers. On heavier wood in very susceptible trees, like pears, pruning cuts should be made in healthy wood 6-12 inches below cankers. Because pruning tools can spread the bacteria, it is important to disinfect pruning tools between cuts by dipping in a solution of one part bleach to nine parts water, or using another household disinfectant.

If fireblight seems likely to occur based on weather, plant susceptibility, past history, and local disease prevalence, blossoms can be given limited protection through application of a copper-containing fungicide. For larger plants, such treatment would need to be repeated and is impractical in most landscape situations. Protective sprays must be applied before infection occurs, and it's already too late this year to catch the beginning of the disease.

Succulent growth is more susceptible to infection. Excessive nitrogen, heavy irrigation, and heavy pruning force rapid growth. Try to be moderate with these cultural practices if fireblight is a problem.

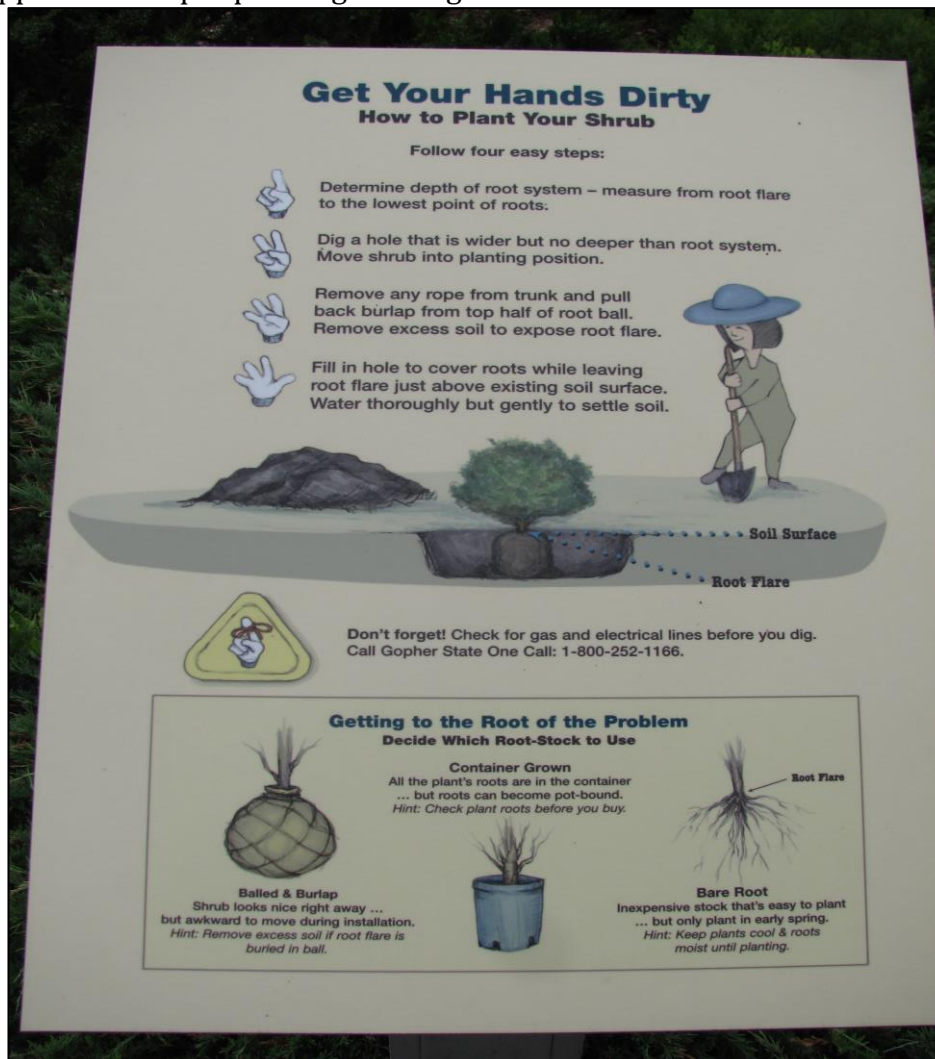
Further information is found in the University of California Pest Note, *Fireblight*, publication no. 7414, available at the UC Cooperative Extension office, or via the web at www.ipm.ucdavis.edu/PDF/PESTNOTES.

The left photo below shows infection centers in an 'Aristocrat' pear, while the right photo is a closeup. The photo further below shows small branches killed by fireblight, a lasting effect visible in summer on an ornamental pear.



Spring Planting of Trees and Shrubs

Spring is indeed an excellent time for planting in Kern County and elsewhere. I came across the diagram below in a visit to the University of Minnesota Arboretum. I like its direct approach. Proper planting is straightforward.



What I like about this diagram:

- Depth of the hole is equal to plant roots, but not deeper, so the plant will stay at its desired level and not sink.
- Bottom of the hole is flat
- Backfill with existing soil without amendments
- Use water to settle soil. Tamping is not needed or desired.
- Either bare-root or container stock can be used in spring. Balled & burlapped stock would be acceptable as well but is not common in California.

What I don't like about this diagram:

- The hole is very wide, unnecessarily so. Since soil weighs about 100 pounds per cubic foot, and the volume of soil will increase as the square of the diameter of the planting hole, this diagram represents extra work and time.
- It is not necessary to remove burlap from the top of the plant. Cut the twine, yes, but burlap decays rapidly and roots will push through.

Meetings and Announcements

Horticulture Class—Tehachapi—Let's plan on autumn, 2018

I do plan to offer a horticulture class in Tehachapi. In light of my schedule and circumstances that have developed, I plan to offer a class in the fall, probably starting late August. Please feel free to check back with me in summer on the dates, time, and location. Of course, I'll also announce in the Green Scene newsletter.

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Environmental Horticulture/Environmental Science

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