

### 2019 Horticulture Classes...

Thanks for the input from several people. However, I still haven't decided sort of horticulture class or classes to offer in the remainder of 2019. If you're interested and want to attend, please give me a call or send me an email. I'll consider any request.

### 10<sup>th</sup> Horticultural Study Tour

We've returned from a visit to many gardens in rather warm Southeast Asia, seeing many landscapes and truly extraordinary gardens. Our group of 23 began the 10<sup>th</sup> horticultural tour in Chiang Mai, Thailand, followed by time in Bangkok. About half the group continued on to Cambodia. Below I share several photos, and again invite your input, since we have not settled on a destination for an eleventh horticultural tour.



Our group in the mountains at a monastery in northern Thailand called Doi Suthep, and on the right, at Queen Sirikit Botanic Garden near Chiang Mai.



In Cambodia, members of our group are visiting one of the temples in the Angkor Wat temple complex.

## Fireblight Disease of Trees and Shrubs

With the rains we've had, it ought to be a banner year for fireblight. 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](http://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.



Some plant problems resemble fireblight, but are not. A case in point is damage to juniper from juniper twig girdler. The insect prefers Hollywood juniper, *Juniperus chinensis torulosa*, and that's the juniper almost always affected, as shown in the photos below. The left-hand photo shows advanced attack by the twig girdler, whereas a more typical amount of damage is shown on the right.



Many other plants may be affected by dieback, including oleander, ash, Chinese pistache, goldenrain, etc., but again, if not in the rose family, the problem can't be fireblight.

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