University of California Cooperative Extension

THE GREEN SCENE

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SPRING SHADE TREE PROBLEMS

Ash, sycamore, and plane trees are common shade trees around Bakersfield. They are well adapted to summer heat and grow rapidly. Two pest problems often occur in mid-spring.

The Bentley ash moth is found in Utah, Arizona, and California, and has become relatively common in the Bakersfield area. The moth lays its eggs on ash, and larvae appear as the green leaves expand to full size. The larvae feed on the succulent ash leaves, and usually are not noticed until almost full size, about 3/4 of an inch long. The brown larvae drop out of trees, landing on cars and sidewalks. By this time inspection reveals tattered foliage on trees above, and birds feeding within ash canopies are another indication of larvae. After the larvae spin cocoons, they disappear from view. Although the Bentley ash moth may appear in large numbers in spring, it has only one generation per year. Trees may appear to have lost considerable foliage, but damage is not serious and chemical control has not been necessary. (Most shade trees are able to lose 25 percent, or more, of foliage to insects without long-term effects.)

Following spring rains, ash, sycamore and plane trees are often infected with anthracnose disease, sometimes simply called blight. Anthracnose is caused by a fungus, which requires water for spore germination and disease development. In years with a dry spring, no disease will be seen, but in wet years, frequent rains allow extensive disease development. Infected leaves turn black or brown and curl. If the petiole is infected, a leaf will fall, even if the leaf blade looks normal. The fungus also infects twigs causing a formation of canker of sunken tissue. If a tree has anthracnose several consecutive years, the disease changes the appearance of the crown, resulting in many dead twigs with living branches sparsely in leaf.

Although ash, sycamore, or plane trees may appear to be defoliated by anthracnose, damage normally is confined to the first crop of leaves and trees will leaf out again. Protectant sprays of a fungicide could be applied to minimize disease development. However, because of the size of many of these trees, the variability of the weather, and the partial control available with currently registered materials, spraying is not usually recommended. Twigs or branches can be pruned if canker is present. Although possibly distressing to see a lawn covered with ash or sycamore leaves, the anthracnose problem passes with the onset of warm, sunny weather.

MUSHROOM, MOSSES AND ALGAE IN LAWNS AND LANDSCAPES

Rains and cool temperatures of autumn provide conditions favorable for growth of mushrooms, moss and algae in lawns and landscape areas. Few chemical control measures are available, but simple maintenance practices can be used to limit the occurrence or to remove the above-ground portion of these plants.

Mushrooms refer to spore-forming structures of fungi. These non-vascular plants cannot transport water over long distances; therefore, mushrooms need cool, wet conditions in which to live, and are likely to be found during cooler weather in spring and fall in Bakersfield. Mushrooms begin to grow when a spore germinates, giving rise to a mycelium, which is a root-like network of fungal strands. Given favorable conditions, a fruiting body including a stalk and cap will be produced. Although the T-shaped fruiting body is most familiar, fungi found in landscaped areas may produce fruiting bodies with a variety

of shapes, such as coral, miniature bird nests, tubes, brackets or puff balls. Most mushrooms are saprophytes, living from nutrients derived from already-dead organic matter such as decaying roots or stumps. A few species are parasites, obtaining food supplies from other still-living plants. A ring of mushrooms in turfgrass, so-called fairy ring, may result in narrow brown arcs of dying turfgrass, but these areas fill with new turf growth as the mycelium advances outward.

Mushrooms are difficult to identify at the species level and such identification requires observation of several characteristics. Beneath the cap are gills or pores which open to release thousands of spores. By placing a sheet of white paper beneath an opened cap, a spore print can be formed showing the pattern and color of the spores, key diagnostic criteria. Shape, smell, presence or absence of a ring on the stalk, texture of the flesh, structure of pores or gills, color of the stalk and cap, and location of the plant are other features which may be used to identify a mushroom. Mushrooms can appear overnight and begin to decay in a day or two, so diagnostic characteristics may appear to change or be absent. Because many species are poisonous, common sense says never eat a mushroom unless you're absolutely sure of its identity. However, control measures in a landscape are the same regardless of species.

Common pesticides, including fungicides, are not effective against mushrooms found in lawns and landscapes. Control of mushrooms should be attempted through managing environmental conditions or mechanical removal. Reducing irrigation, improving drainage, removing organic matter sources, and pruning to allow sunlight to reach the ground make conditions for mushrooms less favorable. Mowing of turf knocks off mushroom tops, or hoeing in a flowerbed achieves the same results.

Like mushrooms, mosses and algae are nonvascular plants requiring moist environments. Their growth is favored by over-irrigation, shade, and poor drainage. These low-growing plants can be surprisingly competitive with turfgrass if environmental conditions favor them. Thick growth of algae can result in crusting of soil, impeding water infiltration. Although copper-containing fungicides can provide limited control of moss and algae, changing the environment is much more effective as a long-term solution. Therefore, reduce irrigation in autumn, improve surface drainage through grading, and prune overstory plants to lessen the incidence of moss and algae.

PRUNING NEEDLE EVERGREENS

Needle evergreens, such as pines and junipers, are frequently planted in the southern San Joaquin Valley. These plants may grow for years with little attention, but, if pruned, are often pruned incorrectly. If pruning is desired, the first question to ask is "Why?" The principal reasons for pruning ornamental plants fall within the categories of structure, health, safety, and appearance. Structure and health are not usually factors in pruning decisions regarding needle evergreens. Safety may be a consideration, prompting thinning to reduce leaf surface area to prevent blow-down, although it is uncommon to see needle evergreens uprooted in storms. The appearance of these plants is often not enhanced unless pruning is done correctly.

Needle evergreens may be categorized based on the number of lateral buds. If a plant has many lateral buds, it usually can be cut back (headed) and these buds will break. If no lateral buds are present, heading may remove the only growing point, leaving a stub without new shoots.

Junipers, cypress, and arborvitae have many lateral buds. They are tolerant of pruning and can be sheared, but because these plants can be sheared does not imply they always should be. Junipers, in particular, have an informal growth habit which is best preserved by a more natural style of pruning accomplished by a combination of heading and thinning cuts. Like most needle evergreens, junipers are not shade tolerant, and the underside of plants will become brown and open if enough light doesn't reach branches. To prune spreading junipers for long-term fullness, remove more top growth than bottom, allowing light to penetrate and keeping the bottom branches alive. To keep the informal look, shorten a long branch and then cut back side branches proportionally. Often a branch may be pruned back to a smaller shoot which is growing parallel over the top of the main branch. The pruning cut beneath will be hidden, and the small shoot will become dominant.

The interiors of cypress and arborvitae plants are usually devoid of foliage, and too much removal of outer foliage exposes the not-so-attractive center. Buds and new growth may not develop on older wood which no longer has green shoots; therefore, it is best to confine pruning to the green portion of the plant. Spring is the best time for pruning as new growth begins. Junipers, cypress, and arborvitae can be pruned at other times of the year, but won't regenerate as quickly.

Pines have a strong growing point at the end of a branch, with few or no lateral buds along the branch. A pine pruned as a mulberry will not respond as a mulberry! Pines can be left unpruned; however, to make a pine more dense, one-third to two-thirds of the new shoots may be removed. Mugho pines, a shrub form, especially benefit from proper pruning to increase density. This should be done only when the shoot is elongating, which is mid-spring. The new shoot, called a candle, is very soft and can be pinched off with thumb and forefinger. If a branch is cut behind this growing point it ceases to grow.

Many other needle evergreens found in the northern U.S., such as yew, hemlock, spruce and fir, do not grow well on the Valley floor. Fir and spruce species can be found at higher elevations and are usually left unpruned.

FIREBLIGHT OF TREES AND SHRUBS IN THE LANDSCAPE AND GARDEN

The rains we've had are most welcome, but rain also makes conditions favorable for fireblight, a destructive affecting some species and varieties of plants. The disease takes its name from the blackened appearance of twigs and branches, which appear as though scorched by fire. The incidence of fireblight is strongly affected by rainfall, and although a problem in Kern County, the disease is more frequent and more severe in higher rainfall areas. 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, pittosporum, 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, crabapples, and 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. 'Aristocrat' ornamental pear is very susceptible and cannot be grown further north in the San Joaquin Valley, but 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 fireblight.

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.

MASTER GARDENER CLASSES

In response to inquiries, we plan to offer MG I and MG III classes beginning late August, 2011. Although we don't have a volunteer Master Gardener program, we continue to offer a series of horticulture classes about landscapes, orchards, and garden.

Please contact us in July or look for announcements giving specific starting dates.

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