



UNIVERSITY OF ILLINOIS EXTENSION

# HOME, YARD & GARDEN PEST NEWSLETTER

College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana-Champaign  
Illinois Natural History Survey, Champaign

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## PLANT DISEASES

### Oak Leaf Blister

This foliar disease of oaks is caused by a fungus, *Taphrina caerulescens*. Other *Taphrina* species cause peach leaf curl, plum pockets, and yellow blisters on poplars, birch, *Carpinus*, maple, and other tree species. The most common *Taphrina* disease on ornamental trees in Illinois is oak leaf blister.

The disease is popping up (pun intended) around the state now. The disease appeared in northern Illinois a few weeks ago, so it was likely throughout Illinois by the first week in June. Look for circular, raised, wrinkled, yellowish green areas on the upper leaf surfaces. A corresponding depression appears on the underside of the leaf. Overall, the leaves look as if they have bubbled up from heat or chemical exposure, but that is not the case. Blisters are caused by the fungus. Look for “blisters.” Eventually the bubbled areas turn brown and become more noticeable.

Although this disease may be damaging in the southern states, it is mostly an aesthetic concern in Illinois. It does not affect the growth of the tree. At most, we may see early leaf drop in the autumn. Peach leaf curl and plum pockets on peaches are a problem for fruit producers. The oak leaf blister fungus does not affect peaches.

Why are we seeing this problem in 2008? Spores of the fungus infect buds in cool, wet weather as the buds begin to open. Obviously, we had the right weather conditions for infection this spring. The pathogen is present in most Illinois landscapes. A susceptible host, oak, is the final requirement for infection. Many oak species are susceptible, including white, scarlet, pin, shingle, bur, jack, Chinquapin, post, and black oaks.

The disease is managed by promoting tree vitality through sound horticultural practices. There is generally no need to use fungicides, but they work if applied once as a dormant application to buds and twigs. Chlorothalonil or mancozeb are registered for use in fall after leaf drop or in early spring before buds swell.

For more information on this disease of oaks, visit our *Report on Plant Disease* at <http://www.ag.uiuc.edu/~vista/abstracts/a663.html>. (Nancy Pataky)

### Fire Blight Is Here

In issue no. 2 of this newsletter, I wrote about fire blight and predicted we would be seeing many cases in the coming weeks—because the pathogen, *Erwinia amylovora*, infects blossoms in wet weather with the optimal temperature range of 65° to 86° F. You can understand that it was not difficult to predict that the disease would be a problem this season.

The symptoms are dramatic, for example, black stems with black leaves, leaving no question that tissue is dead. Infected tissue on pear turns black. On apple trees, the infected tissue turns brown. Other than ornamental pear, most ornamental species turn brown when infected with fire blight. Look for water-soaked or wilted new growth that quickly turns brown to black and remains attached to the stem.

Look-alike problems include frost injury, heat stress (for example, fire under the tree, blacktop application under the tree), chemical damage, and possibly *Pseudomonas* blast, a condition that occurs in near-freezing weather. In the lab, we can confirm the presence of fire blight by observing bacterial streaming with a microscope. That tissue is cultured in the lab and bacterial isolates confirmed as *Erwinia* species.

Because the bacterium originates on old cankers and bark infection, removal of branches killed by fire blight is extremely helpful in disease control. This should be done when the tree is dormant or when weather is hot and dry. Do not remove infected wood in the spring. Disinfecting pruning equipment is an important step in reducing disease spread. Use 10% household bleach or similar disinfectant between cuts. Cut out infected branches, going 6 to 8 inches into the good wood to be certain all infected tissue is removed.

Refer to issue no. 2 of this newsletter for details on possible chemical applications. There will be little benefit from sprays this late in the season. One exception would be spraying an infected tree immediately after a storm. Succulent, wounded tissues may be infected with the fire blight bacterium. (Nancy Pataky)

### Bacterial Blight of Lilac

Bacterial pathogens thrive in wet conditions, especially in mild spring temperatures when plenty of succulent (susceptible) new growth is present. For these reasons, bacterial blight of lilac was expected this wet 2008. The

causal bacterium is a *Pseudomonas* species that is common in the Midwest.

Symptoms of bacterial blight vary with the weather conditions and the host. Brown or black spots on the foliage may melt together to cause large necrotic areas. Often a yellow halo is present around the blotches. Young shoots may be partially or entirely brown. When young leaves are infected, they die quickly and resemble fire blight. Laboratory confirmation involves observing bacterial exudate from the affected tissues and isolating the causal bacterium.

Disease management requires removal of infected tissue, cutting several inches into the good wood, below any stem cankers. As with fire blight management, prune only in dry weather and be certain to disinfect clippers between cuts with a disinfectant such as 10% Clorox. Rapid drying of plant tissue helps discourage disease, so try to open the area via pruning to allow better air movement and thus quicker drying. If the plants are growing in an area of overhead irrigation, cease that activity, at least in the spring. Instead, water the soil directly. If you need to fertilize, use only balanced fertilizer. High nitrogen levels promote succulent new growth that is more susceptible to infection. Finally, copper sulfate fungicides provide some control of the disease but must be applied before new growth appears and be repeated to keep new growth protected through spring.

Bacterial blight has been found to be more of a problem on stressed plants, so practice sound horticultural methods to promote healthy plants. Some researchers have reported the disease is worse on white flowering varieties. (*Nancy Pataky*)

## INSECTS

### Gypsy Moth

Gypsy moth caterpillars are making themselves known in northern Illinois. We have reports of caterpillars ranging from 3/4 to 1-1/2 inches long. The larval numbers are high enough in several areas of DuPage County and other areas that they are causing major defoliation. These half-grown caterpillars are making themselves known when they move from one tree to another looking for additional food.

Gypsy moth overwinters in the egg stage, hatching out at saucer magnolia, *Magnolia x soulangiana*, petal drop. This coincides with bud break to early leaf expansion on many oak species, probably the gypsy moth's favorite host. Larvae are susceptible to insecticidal control beginning at bloom of bridal wreath spirea, *Spiraea x vanhouttei*. The hairy caterpillars are dark colored in lightly infested areas, tan in heavy infestations. Illinois infestations, although heavy in our experience, are still light enough to be composed of dark-colored caterpillars. When young, the caterpillars have a row of orang-

ish spots down their back with smaller white markings alongside. Half-grown and older caterpillars have a double row of blue and then red balls down the back. Fully grown caterpillars approach 2 inches in length.

The caterpillars eat the leaves from the margins inward, leaving only the midvein in heavy infestations. They feed on a wide range of trees, including oak, maple, poplar, willow, crabapple, birch, linden, white pine, and spruce. They are most numerous at the top of the tree, working their way down as foliage is consumed. They feed primarily at night when they are young, but older caterpillars feed day and night. The caterpillars in heavily infested trees produce a rain of feces onto those who walk underneath. When molting between instars (stages), the caterpillars descend lower onto the tree trunk, returning to the foliage after molting. This results in patches several inches in diameter on the trunks consisting of silk webbing and cast skins (exuviae) from the caterpillars.

When fully grown, the caterpillars descend from the trees to search for a protected area to pupate. In light infestations, these larvae tend to pupate beneath flakes of bark. In heavy infestations, these areas become occupied quickly, and huge numbers of caterpillars crawl across the ground and pavement looking for pupation sites. This behavior greatly upsets residents due to the caterpillars' crawling up the walls of buildings, over lawn furniture, and covering streets and sidewalks. Pupation should occur by the end of June, with moths emerging in July.

Male moths are brown with black V-markings on the wings. They have a 1-1/2-inch wingspan and are excellent fliers. Female moths are too heavy-bodied to fly. They are whitish, with a 2-inch wingspan. They also have black V-markings on the wings. It is common to see male gypsy moths flying constantly around trees containing large numbers of females. Female moths typically crawl only a short distance from their pupal cases before mating and laying their eggs. Egg masses containing up to 1,000 eggs are about 1 inch long by 1/2 half inch wide and covered with the tan hairs of the female moth's underside. These eggs overwinter and hatch the following spring.

As long as caterpillars are feeding, insecticide applications can be made. However, insecticides are more effective against younger caterpillars. Recommended insecticide sprays include *Bacillus thuringiensis kurstaki* (Dipel, Thuricide), diflubenzuron (Dimilin), tebufenozide (Mimic), and spinosad (Conserve). Emamectin benzoate is also very effective as a trunk-injected insecticide against gypsy moth caterpillars. It recently received a state label as Tree-Age, mainly for control of emerald ash borer. (*Phil Nixon*)

### Galls on Leaves

Bumps, or galls, are being spotted on leaves, twigs, roots, and flowers of many plants. Plant galls often appear as balls, knobs, lumps, or warts of various shapes, sizes, and colors. Galls develop from plant tissues that have been ir-

ritated and/or stimulated by a parasitic organism.

The growth is similar to a cancerlike growth, with cells rapidly developing in a variety of shapes or forms. Galls are believed to be caused by powerful plant-growth-regulating chemicals produced by the parasite. If the parasite leaves the host or dies, normal cells are again produced. Aphids, midges, wasps, or mites cause about 95 percent of the known types of galls. Bacteria, fungi, and viruses cause the remaining 5 percent.

One of the most common galls in Illinois is the **maple bladder gall**. The small, wartlike growth can easily be spotted on silver (soft) maple. Galls are first green, then turn red and finally black. Maple bladder galls are caused by **eriphyid mites**, mites that are tiny even for mites. Eriophyid mites are cigar-shaped and have only four legs, located behind the head. They are so small that a hand lens is needed to see them. The mites that cause maple bladder gall have several generations per year, so galls are produced through the growing season.

**Hackberry nipple gall** forms a tiny nipple on the upper surface of hackberry leaves. So common is this gall that many people believe it is a natural part of hackberry leaves. The gall is first green and then turns purplish brown. It is caused by an adelgid, a close relative of aphids. **Adelgids** cause many leaf galls on hickory. Another common one is the **hackberry blister gall**, appearing as a yellowish, small, raised area on the leaf. Another adelgid causes the **hackberry petiole gall**, which is a kidney-shaped gall at the base of the leaf. Adult adelgids look like miniature cicadas, being 1/16 to 1/8 inch long. They emerge from the galls in the fall just before to just after leaf fall, and overwinter in protected sites. In some parts of the country, they enter houses in huge numbers, being small enough to go through window screening. The adults fly back to the trees to lay eggs during leaf expansion in the spring. The resulting nymphs cause the galls to form.

Hickory trees have many leaf and petiole galls that are caused by **phylloxera**, another sap-sucking insect that is a close relative of aphids. Many are very common in Illinois, with the most obvious galls appearing as round galls 1/4 to 1/2 inch in diameter. Some are spherical, and others are flattened on one or two sides. Because hickories are primarily forest trees rather than landscape trees in Illinois, they are not commonly noticed.

Thousands of galls are found on oak trees, and almost all of them are caused by **cynipid wasps**. Adult cynipid wasps are smaller than pinheads and do not sting people. The largest cynipid galls are the **oak apple galls**, being spherical, hollow galls that mature to sizes up to 2 inches in diameter, depending on the species of cynipid and the oak host. The legless, white larva typical of cynipid wasps lives in a small, seedlike structure in the center of radiating fibers that extend to the inside edge of the gall. Although they are initially green, oak apple galls mature to tan galls with a hard, papery exterior.

Other common cynipid leaf galls include the following. **Succulent oak gall** appears as green to reddish marbles on pin oak. **Wool sower gall** is tan, spongy, and ping pong ball-sized. Many other oak leaf galls appear as round balls 1/4 to 1/2 inch in diameter that are smooth, covered with hairs, or cover with points, depending on the species of cynipid causing the gall to form. A particularly unusual gall is the **jumping oak gall**. This appears as pimples about one-quarter the size of pinheads on the leaves of white oak and bur oak. In the late summer and fall, they drop from the leaves and quiver or jump on the ground. Although they barely leave the ground when they jump, they are still very obvious in their movements.

Although the galls are common and easy to see, they are seldom important enough to control. It is very uncommon that leaf galls need to be controlled. However, there are times when galls can be serious problems, but this is on stems and twigs rather than leaves.

**Gouty and horned oak galls** occur on the branches of pin and shingle oaks, as well as a few others, though you seldom find the galls on white oaks and bur oaks. These galls do start out as leaf galls, but a secondary stage starts to invade the twigs and limbs. When that happens, knobs develop that can be smooth (gouty) or knotted. As the gall grows, it girdles the end of the branches, which can cause severe dieback to the trees. Unfortunately, there is no easy control of the gouty or horned oak galls. Hand pruning is effective, but may be impractical due to the quantity and size of trees. Improving the overall health of the tree with regular fertilizing and watering is critical. In severe cases, the galls may weaken the trees to the point where it's better to remove the tree.

Other general insect- and mite-produced galls disfigure twigs and foliage but rarely seriously affect the health and vigor of the host. Once gall formations become noticeable, the insect or mite causing the injury is protected from chemical sprays. It is too late to exercise any control other than removing the infested part. Hand-removal is only practical when few galls are present. Chemical sprays are seldom warranted where gall infestations are light. Plants with heavy infestation or those that are tremendously unsightly to homeowners can be treated. Spray treatments can be used to prevent future gall formation but must be correctly timed to eradicate the pest once it emerges and before it has time to induce the gall. Sprays applied after galls are formed are ineffective.

Some gall-producing insect populations can be reduced with a dormant oil spray applied to trunk and branches in the early spring, just before buds open. This is effective in controlling **Cooley spruce gall adelgid** and **eastern spruce gall adelgid**. Some insecticides will control gall formation on elm, hickory, and maple leaves when thoroughly applied to foliage as buds are unfolding. Generally, these are contact insecticides, such

as pyrethroids. To control most galls, foliage should be thoroughly sprayed before the leaves are fully expanded. It is nearly impossible to treat large established trees. Leaf galls are mainly an aesthetic problem. (David Robson and Phil Nixon)

### Bark Miners

Bark miners are the larvae of flies, beetles, or moths that tunnel in the phloem and bark of maple, shadbush, cherry, ash, birch, holly, white pine, Douglas-fir, white fir, rose, and other trees and shrubs. Although sometimes called cambium miners, they do not tunnel in the cambium area as do the larvae of bark beetles, emerald ash borer, and bronze birch borer.

Damage typically appears as narrow, winding tunnels that are lighter or darker than the surrounding bark. These tunnels are 1/32 to 1/16 inch wide and are typically 6 to 12 inches long. They are noticed primarily in the thin bark of twigs, small branches, and the trunks of saplings. Because the tunnels are shallow and tend to wind lengthwise up the branch, they are unlikely to cause girdling or branch dieback, so control is not recommended. (Phil Nixon)

## WEEDS

### Invasive Species Spotlight: Teasel

The Illinois Cooperative Agricultural Pest Survey (CAPS) program is a joint effort between several state and federal agencies, including the Illinois Natural History Survey, Illinois Department of Agriculture, and USDA-APHIS-PPQ. Its primary objective is to safeguard our nation's food and environmental security from exotic, invasive pests that threaten our production and ecological systems. The program achieves this by conducting pest-detection surveys, collecting information, and managing data on invasive insects, plants, and pathogens in Illinois.

A new feature in the newsletter will be an "Invasive Species Spotlight" that provides information on different invasive pests. First in the line up is teasel. Two teasel species are found in Illinois: common teasel and cut-leaved teasel. Both are described as biennial herbaceous. The first year, the plant grows as a basal rosette; the second year, both species flower and can grow up to 6 feet tall. Common teasel blooms from June through October (pink or purple flowers), while cut-leaved teasel usually blooms July through September (white flowers). The unique flowers make teasel readily identifiable when blooming.

Native to Europe, these plants were originally used in the 1700s for combing wool. Due to their unique flower structure, they are now popular in dried flower arrangements and horticultural plantings. However, these plants are persistent invaders of natural areas. They are commonly found along roadsides but can also be found in disturbed areas. These teasel species are aggressive exotic plants that produce large numbers of seeds and can easily colonize areas, displacing native plants. Management of teasel includes removing existing plants to prevent seed dispersion. Plants can be dug up and disposed of or several herbicides can be effective if plants are sprayed before flower initiation.

For more information, stop by the Illinois CAPS blog ([www.illinoiscapsprogram.blogspot.com](http://www.illinoiscapsprogram.blogspot.com)). (Kelly Estes)

*Home, Yard, and Garden Pest Newsletter* is prepared by Extension specialists from the University of Illinois at Urbana-Champaign and the Illinois Natural History Survey. Information for this newsletter is gathered with the help of staff members, Extension field staff, and others. Karel Jacobs and Donna Danielson of The Morton Arboretum also provide information and articles.

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