

No. 13 • July 30, 2003

## Illinois Turfgrass and Landscape Field Day

The 2003 U of I Turfgrass and Landscape Field Day will be Thursday, August 7, at the Landscape Research Center and Hartley Selections Garden, both on South Lincoln Avenue in Urbana. The morning will feature a trade show and viewing of current turfgrass, nursery, and landscape research. Research stops include weed controls, insect updates, disease management, cultivar evaluation, and turf cultural studies. See the latest bedding plant selections at the Hartley Gardens in the U of I Arboretum. In the afternoon, several horticultural seminars and tours will be offered, including a “Birds on the Golf Course” workshop offered in conjunction with the Illinois Natural History Survey. Advance registration is \$30 (including lunch). Registration forms and payment must be received by July 31. For more information or to register, contact Carol Preston, S-406 Turner Hall, 1102 S. Goodwin Ave., Urbana, IL 61801; (217)333-7738. (Monica David and Phil Nixon)

## PLANT DISEASES

### White Mold

White mold, watery soft rot, cottony rot, and Sclerotinia disease are all names for the same disease. The causal fungus is *Sclerotinia sclerotium*, *S. minor*, or *S. trifoliorum*. The fungus is favored by cool, wet weather as we have just experienced (odd to say for late July). These fungi can infect more than 370 species of plants, so the host range is wide. In Illinois, we might see this disease on vegetables such as green bean, carrots, and peas. A recent ginger sample at the Plant Clinic was infected. Also, look for the disease on aster, begonia, columbine, dahlia, delphinium, larkspur, peony, snapdragon, and other garden plants. It occurs on some woody plants as well, but that does not seem to be a problem in Illinois.

Symptoms of white mold may occur on any above- or below-ground part of the host. You’ll see the problem where plantings are dense and the soil is wet. Look for brown lesions, especially on the stems, which become covered with a fluffy, white mycelial growth (mold). This growth is very white and wispy, compared to the gray mold of *Botrytis*. As the disease

develops, the large, black resting bodies of the fungus look much like irregular rabbit pellets growing in or on the plant tissue. When cut open, the resting bodies are black outside and white inside. As the infected plant tissue dries down, the white mycelium may dry up; but the canker will still be bleached or tan, as if it was grabbed by a very hot hand or glove.

This disease is discussed in *Report on Plant Disease (RPD)*, no. 1008, available on U of I’s Vista Web site or in local Extension offices. Correct identification is important to disease control because the resting stage can remain in the soil for many years and cause problems on many other hosts. There is no cure for plants once they are infected. *RPD* 1008 lists susceptible plants. (Nancy Pataky)

### Slime Molds in the Garden

A common landscape annoyance you can expect to see as a result of the moist weather of late is slime mold. Formerly considered to be fungi, these organisms are now categorized as amoeboid-like cells. There are many variations in appearance of these organisms, most of which prefer warm weather. As temperatures rise, more of the slime molds appear. Look for them on bark mulches, on wood chips in play areas, on low-lying objects, or growing on any object that can be used as a perch. We usually see species of *Physarum*, *Fuligo*, and *Stemonitis*.

Although slime molds cause much concern to the homeowner, they do not absorb nutrients from live plant material. They feed on decaying organic matter, fungi, and bacteria in the soil and the turfgrass’s thatch layer. The slimy, amoeba-like stage may be watery-white, gray, cream to light yellow, violet, blue, green, or purple-brown greasy masses as large as 1 to 2 feet in diameter. This stage soon develops into colorful, crusty, fruiting bodies filled with masses of dusty spores. Slime molds are primitive organisms that flow (too slowly to watch) over low-lying objects such as mulches, sidewalks, or driveways, or over vegetation such as turfgrasses, strawberries, flowers, ground covers, weeds, and the base of woody plants.

Most gardeners want to know what to put on slime molds to kill them. Chemicals do not provide control. Instead, for abundant molds, remove the spore masses in a plastic bag, and break up the remaining masses by

vigorous raking, brushing, or hosing down with a stream of water. Mowing the lawn usually removes the spore masses in turfgrasses. For more information about slime molds, read *Report on Plant Disease*, no. 401, which discusses slime molds in turf. The publication is available in Illinois Extension offices or on the U of I Vista Web site. A Web search using Google as your search engine yields many sites with pictures of slime molds. (Nancy Pataky)

### Bacterial Scorch of Trees

For those of you with oaks, it is time to start watching them for development of bacterial scorch. In fact, you may have already seen symptoms. Other tree species can also become infected, but oaks seem to be the preferred host species in Illinois. Scorch refers to leaves that are brown along the margins and sometimes between veins. Scorch is a symptom and does not identify a specific cause. It may be caused by environmental stress such as flooding, drought, hot temperatures, drying winds, clay soil, compaction, construction injury, or any factor that inhibits water movement to the leaves. Scorch from these sorts of stress factors is usually not fatal. Plants generally recover with adequate moisture and time. Trees infected with bacterial scorch decline and die in about 3 to 6 years.

Bacterial leaf scorch (BLS) is an infectious disease that spreads systemically and causes a slow decline and death of the tree. The disease is caused by the bacterium *Xylella fastidiosa*. Although BLS was predominantly a disease found in eastern and southern states, it is now also frequently found in western Kentucky and Indiana. In the past few years, Illinois has had confirmed cases of BLS on pin oaks, shingle oak, and bur oak. The bacterial pathogen cannot be isolated in the lab like most bacteria. It can be confirmed using serological techniques. Because our lab is not equipped for this test, we refer people to private labs doing ELISA tests. One nearby is AGDIA, Inc., in Elkhart, Indiana. The pin oak and shingle oak cases reported here were confirmed by AGDIA.

The most frequent hosts of this disease in the United States include elm, oak, sycamore, mulberry, sweetgum, sugar maple, and red maple. As stated, however, oak seems to be our most common host species in Illinois. It may be that we have attributed scorching to other causes on the other hosts. Kentucky reports BLS on pin, red, scarlet, bur, white, willow, and shingle oaks; silver, sugar, and red maples; sweetgum; sycamore; planetree; hackberry; American elm; and red mulberry. Look for scorch symptoms that occur in early summer to midsummer and then intensify

in late summer. The scorched leaf edges or tissue between veins may be bordered by a yellow or reddish brown color. The symptoms occur first on one branch or section of branches and slowly spread in the tree from year to year. It is one of those situations that you hope will be better next year but only gets worse. Symptoms often show on oldest leaves first, distinguishing this disease from environmental scorch, which first appears on newest leaves. Of course, diagnosis is never that simple, and oaks are an exception. We did not observe this pattern on pin oaks in Illinois. In fact, most references say that oaks show symptoms on an entire branch at once. We saw symptoms on new leaves on some branches, on older leaves on others, and scattered throughout the tree. Bacterial scorch often allows infected leaves to remain on the tree until the fall. Oaks are again the exception. They drop leaves early. If you have seen a slow but progressive decline in your oak, leaf scorch symptoms showing each July to August, and fall leaf drop about a month ahead of healthy oaks, BLS may be present.

The bacterial pathogen is found only in xylem tissue. Xylem-feeding leafhoppers and spittlebugs are thought to spread the bacterium in landscape trees. It can also be transmitted between trees through root grafts. The transmission methods must not be very effective, though, because we do not see rapid spread of the disease from tree to tree.

We cannot test for this bacterium at the Plant Clinic, so we send our samples to a private lab such as AGDIA, Inc. That lab has a serological (polyclonal antibody) test for the bacterium that can be done on young twigs and leaves. As of this writing, the fee was \$48.25 for one sample and \$6.25 for each additional sample using the same test. It is suggested that you call ahead to be certain you prepare the correct sample and to avoid resampling at your expense. Leaf petiole tissue is preferred for this test, so leaves with green petioles are the usual request. Consult AGDIA at <http://www.agdia.com> or call (219)264-2014 or (800)62-AGDIA. If you prefer to go through the Plant Clinic, we can test for other problems but would bill for AGDIA testing as well. Call if you have questions.

What can you do if bacterial scorch is present? There is probably nothing you can do to keep the tree from dying. You can help by pruning out dead wood as it appears. Start thinking of tree-replacement options and plant something that is not known to host this disease. Be sure to pick a species that would do well in the site. Investigate drainage pattern, soil type, amount of sunlight, and any oddities about the location. There are not any fungicides, insecticides, or

bactericides that can be sprayed on a tree to effectively prevent or cure this disease. There is an antibiotic called oxytetracycline present in some commercially available injectable products intended to combat *Xylella*. There is not a great deal of research in this area, but work shows that in some cases oxytetracycline suppresses *Xylella* and provides temporary symptom suppression when injected into trees. Researchers in Kentucky have tried such injections and do not see any benefit. National Park Service researchers have seen only short-term benefits. Injections may need to be repeated as frequently as every year, can be costly, and afford no guarantees. We will keep you posted as new information on this disease and its management is available. (Nancy Pataky)

## INSECTS

### Twospotted Spider Mite

Typically, under hot and dry conditions, twospotted spider mite, *Tetranychus urticae*, is a major problem in landscapes. Under conditions of low rainfall, populations of natural fungi decline, allowing spider mite populations to increase rapidly. However, parts of Illinois have experienced regular periods of rainfall. When conditions are wet and rainfall sufficient, spider mites are generally not a problem because naturally occurring fungi keep them in check.

Twospotted spider mites are considered warm-season mites because they are mainly active from late spring to early fall. Summer temperatures allow them to reproduce faster so that they overwhelm populations of beneficial insects and mites that control them at moderate temperatures.

Twospotted spider mites feed on a wide range of trees and shrubs, including ash, azalea, black locust, elm, euonymus, maple, oak, poplar, redbud, and rose. They also feed on many herbaceous annuals and perennials, including marigold, pansy, aquilegia, buddleia, clematis, daylily, delphinium, phlox, rudbeckia, salvia, shasta daisy, and verbena.

Twospotted spider mite adults are oval and about 1/16 inch long. They vary in color from greenish yellow to reddish orange, with two lateral dark spots that are visible when the mite is viewed from above. The adults and nymphs can be found on all areas of plants but are often more numerous on older leaves. These mites produce fine silk, which is sometimes seen between leaves and between the petiole and stem. The webbing produced by spider mites protects them from predators. Rainfall usually washes this webbing away.

Twospotted spider mites mainly feed on leaf undersides, removing chlorophyll (green pigment) from in-

dividual plant cells with their styletlike mouthparts. They generally feed near the leaf midrib and veins, where the highest levels of amino acids are present. The leaves appear stippled with small silvery gray to yellowish speckles. Heavily infested leaves appear bronzed, turn brown, and eventually fall off.

Warm and dry conditions favor rapid mite development and increased feeding and reproduction. The life cycle from egg to adult can occur in 5 days at 75°F. Female spider mites, which don't have to mate to reproduce, live 2 to 4 weeks and can lay 100 to 300 eggs. Twospotted spider mites spend the winter in protected places, such as weeds, in ground litter, or in debris. They do not overwinter on plants, so applications of dormant oil sprays are not effective.

Management of twospotted spider mite involves maintaining plant health, sanitation, and/or the use of pest-control materials (miticides). Avoid any type of plant stress by proper watering, fertility, and mulching, as this minimizes potential problems with spider mites. For example, lack of moisture or overfertilizing plants, especially with nitrogen-based fertilizers, results in higher than normal mite populations. Monitor for spider mites by knocking them off plant parts, including branches, onto a white sheet of paper, where they can be seen more easily. Plant-feeding spider mites produce a green streak when crushed, whereas predatory mites produce a red streak. A very effective way of dealing with spider mites is to apply a hard spray of water, which dislodges spider mite eggs and live mites. Removing plant debris and weeds eliminates overwintering sites. Also, many weeds, especially broadleaves, are hosts for spider mites.

Pest-control materials recommended for managing spider mites outdoors include abamectin (Avid), bifenthrin (Talstar), dicofol (Kelthane), hexythiazox (Hexygon), insecticidal soap, and summer oil. Avid has translaminar properties, which means the active ingredient penetrates the leaf surface and resides in leaf tissues, thus killing spider mites feeding on the undersides of leaves. As a result, coverage of leaf undersides is less critical. Hexygon primarily kills the egg and nymphal stages, with no activity on adults. Avoid using organophosphate-based insecticides such as Orthene or Malathion because they may stimulate female spider mites to produce more eggs. Spray before populations are high and aesthetic injury is visible. Many of the pest-control materials are harmful to beneficial insects and mites that naturally feed on spider mites, potentially making continual use of these materials necessary once applications begin.

(Raymond A. Cloyd)

## Caterpillars

At this time of year, several species of caterpillars become obvious, feeding on trees. Leaf damage at this time has little effect on tree health; tree leaves are most productive during the spring. By midsummer, the loss of many leaves does not seriously reduce food production for a tree. However, heavy defoliation well before fall may cause trees to sprout new leaves, which causes a loss of stored energy. It is unusual for defoliation by these caterpillars to be heavy enough to cause many new leaves to be produced.

Even though their threat to tree health is small, caterpillar-feeding damage is obvious and important aesthetically. Control is relatively simple, if deemed necessary. Many of these caterpillars feed in groups, where removal by hand or pruning is effective. They are all controlled with *Bacillus thuringiensis kurstaki*, sold as Dipel, Thuricide, and other brand names, as well as many other insecticides.

**Fall webworm** is probably the most obvious late-summer caterpillar. This gregarious caterpillar spins large, obvious silk tents over the ends of branches and feeds on the contained leaves. As these leaves are eaten, the webbing is expanded to cover more leaves. The yellow, hairy caterpillars have two races, a black-headed race with rows of black spots and a red-headed race without black spots. Many common trees are hosts—including walnut, maple, hickory, crabapple, and oak. An earlier generation occurs in the spring in the southern half of Illinois, but all of Illinois has this insect at this time of year. Eggs hatch over several weeks, so both older and young caterpillar groups may be present. The silk tent is waterproof and sprayproof, so high-pressure spray is needed to penetrate the tent.

**Mimosa webworm** has two generations per year, but the second generation becomes very obvious on honey locust and silk tree at this time of year. Multiple caterpillars live together within two to three compound leaves webbed together. As the caterpillars feed, these webbed leaves become brown, making the damage very obvious. The caterpillars themselves are slender, up to one inch long, and brown to greenish. Spray applications require high pressure to penetrate the webbed leaves.

**Whitemarked tussock moth** commonly attacks oak, crabapple, maple, and many other trees. The caterpillar is one of the most attractive insects in Illinois, with long hair tufts front and rear, and short tufts running down the back. The bright red head is complimented with red spots, along with black and yellow stripes down the back. They feed individually and are usually found that way. However, large numbers that strip branches of their leaves can occur.

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*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.

Major authors are Phil Nixon, (217)333-6650, Fredric Miller, (708)352-0109, and Raymond Cloyd, (217)244-7218, entomologists; Nancy Pataky, (217)333-0519, plant pathologist; Bruce Paulsrud, (217)244-9646, pesticide applicator training; and Tom Voigt and David Williams, (217)333-0350, and Michelle Weisbrook, (217)244-4397, horticulturists. Phil Nixon is the executive editor of the *Home, Yard, and Garden Pest Newsletter*. This newsletter is written by faculty in the Department of Natural Resources and Environmental Sciences and the Department of Crop Sciences. The newsletter is edited by Mary Overmier typeset by Virginia Cuppernell Information Technology and Communication Services.

For subscription information, phone (217)333-2666 or (800)345-6087, or e-mail [acesnews@uiuc.edu](mailto:acesnews@uiuc.edu). Web subscriptions are available (<http://www.ag.uiuc.edu/cespubs/hyg>).

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