



UNIVERSITY OF ILLINOIS EXTENSION

HOME, YARD & GARDEN PEST

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

NEWSLETTER

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Correction

It has just come to our attention that print subscribers did not receive issue no. 7. We apologize and are sending it to you belatedly. (*Mary Overmier*)

PLANT DISEASES

Oak Wilt Update

The Plant Clinic at the University of Illinois has recently processed three positive oak wilt samples from Illinois counties. This means that the wood from oaks was submitted to the Clinic, cultured in the lab, and yielded the oak wilt fungus. The three samples were from Champaign, Ford, and Ogle counties.

Oak wilt is caused by a fungus that invades the vascular system of a tree and ultimately kills the infected tree. It may spread from an infected tree to a healthy tree, below-ground via root grafts or above-ground by beetles. Refer to issue no. 7 of this newsletter for more details.

The purpose of this article is to alert readers to the fact that oak wilt seems to be active a bit earlier than normal. At least, the symptoms are showing earlier than usual from oak wilt. It is important to identify this disease early so you have time to protect surrounding trees. If you intend to have a tree sampled, follow these guidelines:

- Select live wood from areas of the tree showing scorch and dieback.
- Select wood that shows vascular streaking.
- Cut branch sections 8 to 10 inches long and as thick as your thumb.
- Mail samples early in the week and pack with disposable ice packs.
- Mail to Plant Clinic, 1401 W. St. Mary's Rd, Urbana, IL 61802.
- Include contact information and the \$12.50 fee for the assay (check payable to University of Illinois).

If you have healthy oaks, do not prune them at least until August, preferably later, when the trees are dormant. Remember that sap from cut wood attracts the beetles that may bring the oak wilt fungus to your tree. This advice is especially important for those of you who know oak wilt is in the area. We saw fresh cases of oak wilt in Champaign, Ford, and Ogle counties. (*Nancy Pataky*)

Three Daylily Problems

Up until the year 2000, I never really concerned myself with diseases of daylilies. That is the year when daylily rust came to the United States and began moving around the country in and on mail-order plants. Sometimes, nurseries became unwelcome recipients of this disease as well. Now, there are three problems you might want to be aware of if you grow daylilies, but none is considered a major problem in Illinois.

First, you should be familiar with environmental **scorch** of daylily. Bleached to tan areas appear on the leaves, especially at leaf tips or where leaves bend and are most exposed to the sun. Hot, dry conditions promote leaf scorch. Watering the soil around daylilies on a weekly basis helps reduce the amount of scorch seen in the planting. Still, scorch is mostly an aesthetic problem, rarely causing any permanent growth problems.

Daylily leaf streak, another very common occurrence in Illinois, is caused by a fungus, *Aureobasidium microstictum*. Look for yellow spots along leaf midveins, often starting from the tip and moving down the leaf. Small, reddish brown flecks or spots develop in this tissue. Daylily leaf streak may be confused with rust, but there are no pustules and no rusty spores to wipe off on your finger as with daylily rust.

Daylily cultivars vary in susceptibility to streak, so you may notice differences among varieties in your planting. In contrast, scorch probably occurs on all cultivars but is more intense on plants most exposed to sun and wind. The fungus causing daylily streak develops most quickly when temperatures are warm but not hot. You should be able to find daylily leaf streak in susceptible daylily beds now. It spreads by splashing spores or spores spread on animals (including us). To avoid spread of this disease, try to irrigate the soil rather than the foliage, and avoid working with plants when they are wet. Also, try to keep plants thinned to provide better air movement.

There are fungicide options for daylily streak, if you choose that route. Compass is a product by Bayer that is registered for use on daylily for this disease. It contains trifloxystrobin and is a local penetrant, which means it is locally systemic and has limited movement in the plant. Thiophanate-methyl has a general ornamental label and has been shown to be effective at preventing infection by the leaf streak fungus.

Daylily rust, caused by *Puccinia hemerocallidis*, is a fungal disease that appeared in the United States in 2000. It affects many popular varieties, including Stella D'Oro, Pardon Me, and Attribution. The good news is that this fungus cannot overwinter in Illinois. It must blow up from the southern states each year and thus has not become established as much of a threat to daylily growers in Illinois.

Symptoms of rust begin as yellow-to-brown streaks on the leaves, much like daylily leaf streak. Aphid feeding can cause similar symptoms. The diagnostic difference is that rust also causes raised pustules on either surface of the leaf, but especially the underside. The yellow–orange to reddish brown pustules produce abundant spores that rub off when touched. Try rubbing the streaks with your finger or a piece of white paper. Rust leaves an orange streak. Resistant varieties may produce only yellow flecks. Daylily rust may kill leaves on susceptible plants. A comprehensive Web site discussing daylily rust—with images, research links, and management options—can be found at <http://www.daylilyrust.org/>. A Cornell University fact sheet on daylily rust is at <http://plantclinic.cornell.edu/FactSheets/daylily%20rust/daylilyrust.htm>. There are more photos on that page as well. (Nancy Pataky)

Redosier Dogwood Canker

You do not have to look long and hard this year to see dieback in redosier dogwood shrubs. This is the plant you may know as redbud or yellowtwig dogwood. The species I learned is *Cornus stolonifera*, but the name is now *Cornus sericea*.

The problem evident now is Botryosphaeria canker, caused by a fungus called *Botryosphaeria dothidea*. As with most cankers, the fungus invades through wounds, possibly growth cracks, and weak areas of the wood. This species may also infect lenticels. Lesions develop on the wood, quite noticeable as a dark area of the bark. The lesion may grow to encircle the stem, killing the cambium as it progresses. The girdled stem dies from the canker to the tip of the stem.

Why are redosier dogwoods affected while other plants are not? Actually, other plants may also be affected, but the red or yellow color of the redosier stems shows damage more readily. Both freezing and drought predispose plants to the opportunistic fungi that cause cankers and stem dieback, so possibly the redosier dogwoods are more sensitive than other species. Plants deacclimate from winter hardiness slowly as spring temperatures rise. When a late frost occurs, as it did in early April this year, plant tissues are injured. According to Sinclair, Lyon, and Johnson in *Diseases of Trees and Shrubs*, “sapwood, cambium, and phloem tissues deacclimate to different degrees.” The sapwood is least tolerant of cold, so it freezes first. Sapwood or cambium

injury leads to cankers. Obviously, our spring weather pattern was conducive to the formation of cankers. Drought stress may also lead to Botryosphaeria canker in redosier dogwoods, and there was a long stretch of drought stress last summer. I saw Botryosphaeria canker on my redosier dogwoods last fall. Others appeared this spring.

To confirm a fungal canker, look for fruiting bodies of the fungus in the lesions. They appear as black, pinhead-sized structures embedded in the face of the lesion. Go with your first instincts for disease management of redosier cankers. Remove dead wood during dry weather, water the roots in periods of drought stress, mulch to conserve soil moisture, and remove the oldest stems each fall. Fungicides do not help this situation.

For more on canker diseases, consult *Report on Plant Disease*, no. 636, “Canker and Dieback Diseases of Woody Plants,” available at <http://www.ag.uiuc.edu/~vista/horticult.htm> or in your local Extension office. (Nancy Pataky)

INSECTS

Scouting Watch

Twig pruners and girdlers are being seen in northeastern Illinois. These roundheaded wood borers cause fallen branches up to 3 feet long under oak, hickory, and other attacked trees. The developing larva of both species is in the branch that falls to the ground. Removing and destroying these fallen branches provides some control and should reduce their numbers next year.

Sod webworm has ceased to be a problem in the state, due to the abundant rainfall. With this soil moisture, the naturally occurring microsporidia should kill enough larvae that turf damage will be unlikely. With the long-range weather forecast predicting recurring rains and average to below-average temperatures throughout July, sod webworms are unlikely to become a problem until later in the summer. (Phil Nixon and Morton Arboretum)

Golden Oak Scale

Golden oak scale crawlers have been reported in northeastern Illinois. Golden oak scale has been found in that area of the state for several years, particularly in nurseries on white oak. The insect attacks a variety of white and black oak group species.

Golden oak scale is a pit scale, meaning that the scale occurs in the center of a pit in the bark that is about 1/8 inch in diameter and up to half that deep. In the center of the pit is a gold-colored, round, white, waxy-fringed female scale up to the size of a pinhead. The pit is thought to be caused by the removal of fluids or the injection of toxins by the scale that keeps that portion from growing as much as the surrounding tissue.

Crawlers, young newly hatched scales, are produced in the late spring to early summer and continue to be

produced for about 5 months. The crawlers typically do not crawl far and tend to settle down to feed primarily on 1-year-old and the current year's growth. Mature females overwinter. There is one generation per year.

Untreated trees can experience reduced growth and dieback of young twigs. Damage typically appears in late summer and fall. Dead twigs tend to hang onto their dead leaves, making them obvious during the winter on deciduous oaks. Infested trees tend to leaf out about 3 weeks later in the spring. Young trees can be killed. Infested trees tend to have more anthracnose than those not infested. The combination of scale and anthracnose can kill even established trees.

Treatment is aimed at the crawler stage. Dormant oil sprays and other applications against the mature female scales are relatively ineffective. Spray the crawlers at this time with acephate (Orthene), bifenthrin (Onyx, Talstar), or cyfluthrin (Tempo). Check for crawlers a month after spraying and retreat if crawlers are present. *(Phil Nixon and Kathy Sharpe)*

White Grubs

Preventive treatments of white grubs to avoid turf damage should be applied during July. Eggs of Japanese beetle, northern masked chafer, and southern masked chafer are laid primarily from the last week of June through the third week of July. These eggs will be hatching from late July through early August. The insecticides used at this time of year, imidacloprid (Merit) and halofenozide (Mach 2), provide about 3 months of residual activity, so application before the eggs hatch is acceptable.

All three species of white grub tunnel down into the soil to lay their eggs. This causes them to be attracted to moist soil. There is also evidence that they may be attracted to green grass in which to lay their eggs, which is also associated with moist soil. Prior to the last couple of weeks, the dry weather appeared to have us set up for grub egg-laying to be concentrated in irrigated turf. When that occurs, the resulting high white grub populations can cause severe damage to turf. However, the state has received above-average rainfall over the past few weeks, turning all of the turf green and making it all attractive to egg-laying grub adults.

Under these higher moisture conditions, eggs are typically laid over such wide turf areas that most areas do not have enough grubs to cause injury. This allows one to save the cost of preventive grub insecticide applications. Pockets of damage-causing grub numbers will show up in August. Those areas can then be treated with trichlorfon (Dylox) to control the grubs within 3 days. An exception to this is in northwestern Illinois. Historically, even in years with heavy late-June and early-July rainfall, the areas between and around Monmouth to Peoria have had widespread grub damage. Based on that, preventive grub treatment would still be in order for that area.

We generally recommend that insecticide applications to control white grubs be watered in with at least 1/2 inch of water. This is definitely true for Merit and Dylox. Mach 2 is more water soluble than the others, so that immediate irrigation is not essential. As long as at least 1/4 inch of rain or irrigation occurs within 3 days after application, the Mach 2 washes off the grass blades and thatch into the root zone where the grubs feed. However, research shows that Mach 2 remaining on the turf surface for more than 3 days suffers a reduction in grub-control effectiveness, probably due to breakdown from the ultraviolet light in sunlight. Ultraviolet light radiation is intense even on cloudy days. *(Phil Nixon)*

White Grub Adult Scouting

Making estimations of the future impact of white grub damage to turf relies on more than rainfall patterns. The other factor involved is the number of adult white grubs present to cause damage. Scouting is necessary to determine the relative abundance of these beetles.

Japanese beetle adults are the easiest to scout because they seem to like the sunshine. Adult beetles are stout, oval insects 3/8 to 1/2 inch long, metallic green, with copper-colored wing covers. There is a row of white spots consisting of white hairs along the sides just below the wing covers, along with a pair of white spots on the posterior of the beetle. During the sunny portions of the day, these beetles can easily be seen feeding and mating on the upper leaf surfaces of smartweed, rose, grape, raspberry, blackberry, crabapple, serviceberry, birch, linden, and other trees and shrubs. When disturbed, they fly clumsily with a loud buzzing sound.

Masked chafer adults are more difficult to scout. Illinois has both southern masked chafer and northern masked chafer throughout the state. The adults of these beetles are 1/2-inch-long, tan June bugs. They are stocky, roundish beetles that fly clumsily with a loud buzzing sound. These insects hide in the thatch during the day, coming out at night to mate and lay eggs. They do not feed as adults, so you do not see them do that on trees and shrubs. The two species emerge at slightly different times from dusk until after midnight; but from about 10:30 to 11:00 p.m., both species are active.

Masked chafer adults can be seen flying back and forth just above the turf surface at that time of night. Shining a car's headlights across the turf is an excellent method to see this activity. These beetles are also strongly attracted to lights at night, where their numbers can be easily observed. They are particularly attracted to illuminated white surfaces, so an outdoor light on a white building attracts more beetles than a pole light. They are more attracted to mercury vapor and regular incandescent lights than sodium or yellow light bulbs.

Masked chafer adults can also be monitored somewhat by the frequency of the beetles' hitting a lighted window

or the number found swimming or drowned in pet water dishes, wading pools, horse troughs, birdbaths, and other bodies of water in the morning.

Compare the number of beetles with previous years to determine the damage potential. This is where experience and memory become very helpful. Certainly, years when the number of beetles is smaller corresponds to less white grub damage to turf if moisture conditions are similar.
(Phil Nixon)

Green June Beetle

Green June beetle adults are present throughout Illinois as far north as Peoria. These stocky beetles, about 1 inch long, are metallic green, with a couple of indistinct yellow stripes on the sides of the wing covers.

Adult green June beetles are active fliers during the sunny portions of the day, making a loud buzzing sound as they fly. They appear to fly toward upright, sunlit objects, including sheds, houses, and people. They seem to have a propensity for flying into people in the forehead, throat, or stomach. I have heard numerous stories of people being almost dazed by being hit by a beetle in the head, having trouble speaking for a while from being hit in the throat, and bending over in pain from a beetle hitting the stomach.

Larvae of green June beetles feed on dead grass. They are white grubs but are different from those that feed on turf roots, by not being C-shaped and being larger. They are white, with brown heads like white grubs, but grow to 1-1/2 to 2 inches long. Their legs are short, but they have relatively long, bristly setae (hairs) on their back.

They are occasionally common in turf, where they tend to be more numerous under tree canopies. Although they do not feed on the live roots or other living portions of the grass, their burrowing through the thatch can loosen the roots, resulting in some dieback if populations are high. The larvae have a habit of coming out onto the turf surface at night to crawl around. In the process, they create holes in the soil surface about 1/2 inch in diameter, frequently

with loose soil around them. A hundred or more of these larval emergence holes may be seen under a tree's canopy.

Their legs are apparently too short to be very useful aboveground. They get around by turning over on their back and using their long setae to move around with. The presence of large, white larvae crawling around at night on their backs can cause interesting telephone calls the next day from clientele. Typically, the call starts off with, "I swear I wasn't drinking, but I saw . . ."

Green June beetle larvae become numerous in large quantities of dead grass, such as piles of grass clippings or used animal bedding at stables. This results in large numbers of beetles flying into people and other objects in these areas. The beetles fly from late June into late July.

Control of green June beetles is most effective when aimed at the larvae, even though the adult beetles are the main problem. There are no practical controls for the adult beetles. The larvae are effectively controlled in turf with an application of carbaryl (Sevin) or any of the insecticides recommended for turf-damaging white grubs. The larvae are controlled in piles of grass clippings and manure by making them into compost piles. The resulting heat of decomposition kills all the grubs except those at the edge of the pile.
(Phil Nixon)

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