



No. 14 • August 4, 2004

Greenhouse Management Workshop

The Sixth Annual Greenhouse Management Workshop will be August 12, 2004, in Bloomington at the University of Illinois Extension Office, 402 N. Hershey Road. The workshop is scheduled from 9 a.m. to 4 p.m. The registration cost per person is \$30 for Illinois Greenhouse Association (IGA) members and \$45 for others. Pre-registration must be received by August 5. Checks should be made out to the University of Illinois. If you have any questions, please contact Raymond A. Cloyd at (217)244-7218, phone; (217)244-3469, fax; or rcloyd@uiuc.edu, email.

Tentative schedule for the workshop:

- 9:00–10:00 a.m. Tunnels of trouble: Dealing with leafminers in greenhouse production; Raymond Cloyd, University of Illinois
- 10:00–11:00 a.m. WPS in greenhouses: Don't get caught with your "plants" down; Jerry Kirbach, Illinois Department of Agriculture
- 11:15 a.m.–12:15 p.m. Getting the most out of your mix; Richard Vetanovetz, SunGro Horticulture

12:15–1:15 p.m. Catered lunch

1:15–2:15 p.m. Modes of action: Why this is important to know when rotating pesticides; Raymond Cloyd, University of Illinois

2:30–3:30 p.m. Presentations by exhibitors

3:30–4:00 p.m. Questions and evaluations

PLANT DISEASES

Concerned about Dogwood Leaf Spots?

Although septoria leaf spot is fairly unimportant in terms of plant health, it's one of those late-summer diseases that often catches the attention of dogwood owners and enthusiasts. Why? Because it is a foliar disease that really stands out, and most folks who own or work with dogwoods are aware of a different but far more destructive disease called dogwood anthracnose. The following table should help to differentiate between these and two other key diseases of dogwood. In addition, for pictures and more information about dogwood anthracnose, consult the University of

Table 1. Comparison of dogwood foliage diseases in Illinois.

	Dogwood anthracnose	Spot anthracnose	Septoria leaf spot	Powdery mildew
When symptoms are first noticed	Spring/early summer	Spring/early summer	Summer/early fall	Summer
Lesion diameter	1/4" or larger, often enlarge, become irregular in shape and merge, causing leaf blight	Circular, typically less than 1/8"	Slightly angular, typically 1/4", restricted by veins	<i>Symptoms:</i> White fungal growth on leaves may be difficult to see. Leaves may be stunted, reddened, and curled or puckered by midseason. Plant may appear water-stressed.
Lesion color	Dark brown with purplish margin.	Whitish center with purplish border. Lesion center often falls out later in season.	Dark brown with purplish margin. Center turns grayish to nearly white with age.	
Damaging?	Yes! Although not really common in Illinois, it does occur. It's most common in shaded/protected areas.	Generally not	Generally not, as it occurs late in the season	Repeated, severe infection weakens tree.
Host resistance	Resistant cultivars of both flowering and Kousa dogwood are available.	Unknown	Unknown	Resistant cultivars of both flowering and Kousa dogwood are available.

Tennessee's "Dogwood Research Group" Web site at <http://eppserver.ag.utk.edu/Dogwood/June2002/dogwood.htm>.

Septoria leaf spot is a fungal disease that typically appears in July but is usually not noticed until early to mid-August or later. As of this writing, several reports have come in from around the state, including The Morton Arboretum. Leaf lesions are fairly uniform in size, up to about 1/4 inch across, somewhat angular in shape, and limited by veins. At first, the lesions are brown, but they turn grayish to nearly white as they mature. Although septoria leaf spot symptoms may be a bit startling, the disease is not recognized as a threat to the health of dogwoods. (Bruce Paulsrud)

Pachysandra Leaf Blight

Pachysandra is a great ground cover for shady sites in Illinois. It has dark, evergreen foliage that fills open areas quite aggressively with rhizomes. The plant is sometimes bothered by scale insects, a few leaf-spotting diseases, three stem diseases, and a blight. Diseases can be minimized by thinning plants occasionally and pruning surrounding plants to provide better air flow in the area.

Macrophoma, *Phyllosticta*, and *Septoria* fungi can cause leaf spots on this host, but usually damage is minor. Sometimes, we see *Fusarium* or *Rhizoctonia* stem rots. There has also been a report of *Sphaeropsis* tip blight on pachysandra (similar to the disease on pine), but we have not seen it at the Plant Clinic.

The most common disease seen on pachysandra is *Volutella* blight. We talked about imperfect and perfect stages of fungi in issue no. 10 of this newsletter. The perfect stage of this disease is *Pseudonectria pachysandricola*. The imperfect (conidial) stage is *Volutella pachysandrae*. Both cause the same disease. We call it *Volutella* blight, for ease of communication.

Volutella blight may cause tan leaf spots or blotches, often with concentric rings within the spots. The lesions have a dark brown border. The fungus may move to the stems, where it girdles and kills tissue beyond the infection. *Volutella* is a stress pathogen. We usually see the disease in spring following winter injury, but humid conditions of late have caused a flare up in some locations. The disease is common following recent transplanting, shearing, leaf scorch, or a scale infestation. Look for pink (*Volutella* stage) or red (*Pseudonectria* stage) masses of spores on the lesions.

Remove and destroy severely infected plants. Determine the source of stress and try to correct it for your site. Avoid heavy mulching and overcrowding of

pachysandra plants. Fungicides can be used as preventives. Many products are listed in the *Home, Yard, and Garden Pest Guide* and the *Commercial Landscape and Turfgrass Management Handbook*. These include copper fungicides, chlorothalonil, and mancozeb active ingredients. The commercial handbook also has a few systemic products listed, including Manhandle, Spectro, TwoSome, and Zyban. For more information on this disease, consult *Report on Plant Disease*, no. 649, "Pachysandra Leaf and Stem Blight," available in Extension offices or on the Internet at <http://www.ag.uiuc.edu/%7Evista/horticult.htm>. (Nancy Pataky)

Some Gall Problems

Galls are swellings or overgrowths of tissue, usually plant tissue. Causes include insects, mites, and pathogens such as bacteria, fungi, and nematodes. There are even some noninfectious causes of galls, such as growths around injuries or callous tissue. Try not to assume that the presence of a gall on a plant automatically indicates an infectious disease.

Some examples of bacterial galls include crown gall (*Agrobacterium tumefaciens*), bacterial knot of ash in Europe, fasciation (leafy gall), and a gall on honeylocust that is a bacterial suspect. Black knot of plum (*Dibotryon morbosum*), Phomopsis gall, Nectria gall, and *Sphaeropsis* knot are examples of fungal galls. There are hundreds of insect galls on oak alone. In Illinois, galls caused by insects far outnumber those caused by fungi or bacteria. The Plant Clinic has received samples this year with galls caused by mites (ash flower galls), insects (wood sower gall), fungi (Phomopsis gall), and a noninfectious callous gall. How do you know which type of gall is present? Cut into the gall and look for chambers, trails, or evidence of insect boring. Check reference materials to determine gall-forming possibilities on your host plant. Then observe the galls with a strong hand lens or dissecting microscope, looking for fungal fruiting bodies. It may be necessary to incubate tissue overnight in a moisture chamber to cause fruiting bodies to form.

Phomopsis gall has appeared on a few hosts in Illinois the last few years. It may occur on many tree and shrub species, including forsythia, viburnum, highbush blueberry, American elm, hickory, maple, oak, and privet. Gall size varies with the host species and time. The galls are caused by the *Phomopsis* fungus but look very much like a systemic infection of crown gall or possibly a stem gall from an insect. *Phomopsis*-induced galls are about 1 to 2 inches in diameter, rather round, and have a bumpy, roughened

texture. They look like a cluster of nodules pressed tightly together. The gall is a mass of undifferentiated plant tissue and fruiting bodies (pycnidia) of *Phomopsis*. We usually do not see the fungus on dry tissue, but the pycnidia are visible as black, pinhead-sized dots imbedded in tissue that is incubated in moist chambers overnight. Dieback results when the galls girdle the twigs. Otherwise, very little is known about the disease cycle. The only control measures we can suggest are to prune out affected or dead branches and promote tree vitality through good horticultural practices.

Crown gall is probably the most common infectious gall in Illinois. That disease is discussed in *Report on Plant Disease (RPD)*, no. 1006, "Crown Gall." It is available in Extension offices or on the Internet at <http://www.ag.uiuc.edu/%7Evista/horticul.htm>. Fasciation, or leafy gall, is discussed in *RPD*, no. 619, available at the same site. (Nancy Pataky)

INSECTS

White Grubs

White grub eggs should be hatching toward the end of July in southern Illinois and in early August in central and northern Illinois. Both the northern and southern masked chafer (annual white grubs) and Japanese beetle eggs should hatch in these periods. With rainfall being plentiful during the first two weeks of July, coupled with relatively cooler conditions during that time through most of Illinois, white grub injury should be relatively slight this year.

When nonirrigated turf is attractive to egg-laying beetles because it is green and moist, eggs are typically laid in both nonirrigated and watered turf. This results in low numbers of grubs per square foot, resulting in little or no turf dieback due to root feeding. The dry weather in northwestern Illinois should cause grub damage to be heavy in that area. Throughout the rest of the state, grub injury will probably be limited to hot spots here and there. Be watchful for signs of turf wilting and dieback, check for grubs, and treat with trichlorfon (Dylox) if grubs are numerous.

Scout for grubs by cutting through the turf with a heavy knife and then pulling up the turf. The C-shaped, white grubs should be in or just below the turf's root zone. If the soil is dry, the grubs may be 2 to 4 inches deeper. Check for these deeper grubs by tilling up the soil with the knife. Ten to 12 or more grubs per square foot usually cause obvious turf injury. Eight to 10 grubs per square foot may cause injury in heavily used turf, such as sports fields. Skunks, raccoons, and insectivorous birds may damage turf

while feeding on as few as two to three grubs per square foot. (Phil Nixon)

Oak Spider Mites

We have been receiving inquiries regarding oak spider mite, *Oligonychus bicolor*. This is a small (0.5 mm-long), dark, reddish brown mite that primarily attacks oaks (*Quercus* spp.) but can also be found on birch, beech, elm, and hickory. The mites are primarily located along the midrib on the lower leaves of large oak trees. Oak spider mites have styletlike mouthparts, which they use to withdraw plant fluids, creating scattered chlorotic stippling on leaves. Leaves turn yellow or have a bronzed appearance before eventually dying. Heavy infestations of oak spider mite can cause severe leaf bronzing. Red, barrel-shaped eggs are present on the upper surface of leaves. The eggs, which are the overwintering stage of oak spider mite, are laid summer through fall in crevices and around the leaf axils.

Oak spider mite can be managed by thoroughly spraying trees with a hard water spray. This dislodges all life stages, including eggs. Localized infestations can be pruned out. Insecticides/miticides recommended for controlling oak spider mite include insecticidal soap, horticultural oil, abamectin (Avid), bifenthrin (Talstar), and hexythiazox (Hexygon). Hexygon is an ovicide that kills mite eggs and young nymphs but does not have activity on adults. (Raymond A. Cloyd)

Twig Girdlers and Pruners

Now is the time to be aware of two notorious insect pests of landscapes and nurseries: the twig girdler, *Oncideres cingulata*, and the twig pruner, *Elaphidionoides villosus*. Although there are similarities, the main difference between these two insects is that girdlers cause damage when adults sever a twig from the outside, whereas the damage from pruners occurs when the larvae sever the twig from the inside. Both the girdler and the pruner attack a wide range of trees, including elm, hackberry, honeylocust, linden, oak, poplar, redbud, sassafras, and sweet gum. Branches up to 3 feet long may drop from a tree because of attack by these insects. They are more problematic in landscapes and nurseries when excessive damage alters the shape of a tree or reduces plant salability.

Twig girdler inflicts damage to twigs or branches as an adult. In fall, adult females chew circular notches around a twig—girdling it. Adult females lay eggs individually underneath the bark in a hole, which they create, in terminal and lateral twigs or branches. A female is capable of laying three to eight eggs into a

single twig. Leaves turn brown after the adult female lays eggs and feeds. The eggs are placed beyond the girdled area. Girdled twigs soon die, break off the tree, and fall to the ground. The eggs hatch into larvae that overwinter inside the twigs lying on the ground. Larvae tunnel toward the severed end and feed on woody tissue. Full-grown larvae are cylindrical and 18 to 25 mm in length when mature. In spring and summer, larvae undergo a pupal stage. In late summer and fall, when development is complete, adult beetles emerge, and the cycle is repeated. Females live about 6 to 10 weeks and can lay between 50 and 200 eggs during this period. There is typically one generation per year in Illinois.

Twig pruner adults attack twigs and small branches 6 to 50 mm in diameter. The adult female chews a small hole in the bark of a twig and deposits eggs near the leaf axil. Eggs hatch into larvae covered with long, lemon yellow hairs. The larvae enter trees and feed within the center of a small branch or twig—creating a tunnel toward the base. Larvae then migrate from the center to the sapwood, making concentric circular cuts. Eventually, the larvae migrate back into the center tunnel and plug it with frass. Wind causes the branches or twigs to break and drop to the ground. The larvae continue to feed inside the severed branch and then overwinter as pupae. In spring, the adult

emerges from the hollowed-out branch. Similar to the twig girdler, the twig pruner has only one generation per year in Illinois.

Dealing with both the twig girdler and the twig pruner primarily involves removing and destroying fallen twigs and branches. The use of insecticides is not recommended for these two pests because it is very difficult to control the larvae residing inside twigs and branches. (*Raymond A. Cloyd*)

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. It is edited by Mary Overmier and 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. Web subscriptions are available (<http://www.ag.uiuc.edu/cespubs/hyg>).

Copyright © 2004, Board of Trustees, University of Illinois