



No. 19 • October 18, 2006

Illinois Professional Turf Conference

The Illinois Turfgrass Foundation presents its annual Illinois Professional Turf Conference (IPTC) November 28 and 29 in St. Charles. If you are searching for innovative educational sessions, people to share ideas and practices, and a place to see turf technologies in equipment products and services, all in your backyard, the 2006 IPTC is for you.

Choose from more than 60 educational opportunities in categories of golf, sports turf, lawn care, and technician. From specialty programs designed for the experienced turf professional to the novice, you will be sure to find something of interest.

For more information or to register for the conference, see <http://www.illinoisturfgrassfoundation.org/> (Phil Nixon, adapted from the ITF Web site.)

PLANT DISEASES

Cankers and Fruiting Bodies

Branches that have been infected by opportunistic fungi often form cankers. These appear as dead areas on a branch, or areas that are sunken, off color, or bumpy. The wood under these cankered areas is dead, as you can readily see by peeling back small sections of bark and looking at the color of underlying wood. Healthy wood is white, tan, or green, while dead wood is usually brown. The natural inclination is to remove these dead areas. This prevents wood rot fungi from entering the dead wood and moving into larger branches or trunk tissue. Now is a good time to do that pruning because it is easy to determine which sections of wood are alive and which are dead. As soon as leaves drop, this distinction becomes more difficult.

The cause of the cankers is a “chicken and egg” discussion. The fungi that are found in cankers are usually known as stress pathogens. They do not harm the tree or shrub until the plant is stressed. Does the stress cause the canker, or does the fungus cause the canker, and which came first? Canker fungi have been shown to be present in some trees without causing a problem until the tree is stressed. One thing is clear:

The use of fungicides does not help in canker management. Remove dead wood and then try to identify and correct the source of stress, but don't apply fungicides to eradicate the cankers. Some stress factors might include water imbalance, root compaction, root injury, chemical damage, girdling roots, trunk damage, or root rot. Some of these problems can be corrected, and some cannot.

If you have ever heard a plant pathologist talk about plant diseases, you have likely heard about fruiting bodies. What are these oddly named things? And what significance do they have to the job of someone working with plants? Understanding fruiting bodies is not as complicated as some might lead you to believe.

A plant pathogen is an agent that causes disease. Common infectious agents of plant disease include fungi, bacteria, viruses, and nematodes. Phytoplasmas (such as yellows diseases) might also be added to the list. Of all the plant diseases that we might see in the landscape, only those caused by fungal pathogens have the ability to form fruiting bodies.

How do we identify the cause of a fungal disease such as Sphaeropsis blight of pine, Rhizosphaera needle cast of spruce, or perhaps Armillaria root rot? Symptoms are extremely important in such diagnoses, but the characteristics of the fungus itself provide a positive identification. Mycelium is the vegetative part of the fungus, composed of threadlike hyphae. The mycelium is the nutrient-gathering portion of a fungus. A fruiting body is a reproductive structure that produces spores. “Sporocarp” is another general name for a fruiting body. “Carp” is from the Greek “karpos,” which means fruit. Other synonyms include fruit-body, fructification, or sporophore. Fungal fruiting bodies are distinct in size, shape, and color, and type of spores contained, making them very helpful in plant disease diagnosis. Keep in mind that a fruiting body is only the spore-producing portion of the fungus. Where there is a fruiting body, there is also mycelium of that fungus somewhere in the infected plant tissue. As an example, a tree may have a shelf fungus growing from the trunk. This is a fruiting body.

Its presence indicates that the tree is also infested with mycelium of this fungus. Simply removing the fruiting body does not remove all the fungus. The presence of fruiting bodies is used as a confirmation of a disease problem.

Getting back to those cankers in the wood, if you see fruiting bodies in or on the wood, you know it is infected with a fungus. That is the tissue you want to remove. To get all of the infected tissue, including the mycelium that may not be as obvious, remove a few inches of wood beyond the cankered wood. The internal wood that remains should be white, tan, or green. For more information on cankers and wood rots of trees, visit the Extension Vista Web site at <http://www.ag.uiuc.edu/%7Evista/horticult.htm> and scroll down to “Canker and Dieback Diseases of Woody Plants,” RPD no. 636; and “Wood Rots and Decays,” *Report on Plant Disease (RPD)*, no. 642. (Nancy Pataky)

Sphaeropsis or Diplodia Blight Clean-up

Now is the time to try to clean up pines infected with Sphaeropsis blight (Diplodia blight). This disease was discussed in issue no. 7 of this newsletter. By now, infected trees are showing death of stem tips and needles. There may be areas of sappy cankers. These areas are easy to see in the fall. Prune out as many as possible while still maintaining a pleasing tree form. The causal fungus is known to invade cones, where it can overwinter in fruiting bodies. To help reduce spring inoculum that will infect new growth in 2007, rake and remove fallen cones. You can even remove cones on the tree if that is feasible.

Research has shown that drought-stressed pines are more susceptible to infection by this fungus. Therefore, give your pines some TLC and keep them watered in periods of drought lasting 2 weeks, especially in the heat of summer. Mulching with shredded bark or similar natural mulch is also recommended to help maintain soil moisture around these trees. That makes cone removal more difficult, but it is still possible, as I can attest. I think the advantage of using mulch is worth the extra effort to remove fallen cones in the mulch.

Fungicides may be used to help manage this disease, but fall applications are not recommended. So, for now, follow the above advice to help your pines look better in 2007. For more information on this disease, visit the Extension Vista Web site at <http://www.ag.uiuc.edu/%7Evista/horticult.htm>, and scroll down to “Sphaeropsis Blight or Diplodia Tipblight of Pines,” *Report on Plant Disease (RPD)*, no. 625. (Nancy Pataky)

Arborvitae Blight

We frequently see a disease on eastern arborvitae that causes browning of leaves at the tips of branches or tips of branchlets on landscape trees. Affected plants appear scorched. A copyrighted image of infected arborvitae can be viewed at this Web site: http://www.science.oregonstate.edu/bpp/Plant_Clinic/images/arborvitae_pestalotiopsis.htm. When brown tissue is incubated overnight, fruiting bodies (spore-bearing structures) of a fungus called *Pestalotiopsis funerea* pop out of the tissue. You might be able to see these fruiting bodies on the leaves without incubation, especially if weather has been humid or moist. The fruiting bodies are called “acervuli” and appear as small pustules rupturing the leaf epidermis. They are black, embedded in the leaf tissue, and about the size of the head of a pin. They do not rub off, as would superficial mold.

There are over 50 *Pestalotiopsis* and closely related *Pestalotia* species that infect many plant hosts in the United States and Canada alone. They are generally considered to be secondary pathogens on tissues predisposed to infection by drought, aging, frost/freezing, sunscald, root damage, and similar stress factors. Interestingly enough, at the University of Illinois Plant Clinic, we see *Pestalotiopsis* primarily on arborvitae. Possibly, this is an indication that the arborvitae in our state are stressed more than other plants, but we don't see this pathogen very often on other stressed plants. I don't think we are missing the fungus because *Pestalotiopsis* produces easily visible fruiting bodies and some very distinct spores that are difficult to miss in a lab. According to Sinclair and Lyon in *Diseases of Trees and Shrubs*, *Pestalotiopsis funerea* is an endophyte (present in apparently healthy tissue) and a pathogen. Possibly, its presence in arborvitae is more common than in other species; or possibly, arborvitae is more susceptible to injury. Whatever the reason, it is fairly common in Illinois.

Management of this disease in the landscape should be targeted at correcting the source of stress. Often, this involves protecting plants from winter injury, applying water during periods of drought, and using proper planting procedures. Remove dead foliage by pruning in dry weather. *Pestalotiopsis* is a more serious problem on arborvitae in the nursery, causing more extensive shoot dieback. Fungicides can be used but are intended as preventives. Applications are used to prevent infection of next year's foliage. Copper fungicides are registered for this use. A few options include Kocide, Nu-Cop, Champion, Junction, or Hi-Yield Bordeaux. Always read the product label before using a chemical on your plants. (Nancy Pataky)

INSECTS

Insecticide Use in Emerald Ash Borer Management

Efforts to manage the emerald ash borer on a large scale are primarily being conducted by federal and state agencies. There are many unanswered questions concerning the prevention or control of emerald ash borer, including the uncertainty of the effectiveness of any insecticidal control efforts on emerald ash borer.

Current large-scale activities being conducted to eradicate emerald ash borer or slow its spread:

- Nursery stock, lumber, wood product, and firewood quarantines
- Infestation surveys
- Tree removal
- Outreach education
- Research on the insect and its management options

Factors when considering whether to attempt insecticidal control:

- The only certain method to control emerald ash borer is to remove the tree.
- Healthy trees growing in a location with proper soil, fertility, light, wind exposure, and other environmental factors survive attack longer than those in poorer health.
- Weigh the value of the tree in the landscape against the cost of treatment, including its eventual removal.
- If many trees are being removed in an area, it will probably be less expensive to have it removed at that time than at a later date.
- A tree in a regulated area is likely to be removed, regardless of whether it has been treated or shows signs of borer infestation.
- Cost of the purchase and planting of replacement trees not susceptible to emerald ash borer should be considered. Only ash trees in the genus *Fraxinus* are susceptible. Mountain ash and all other trees are not susceptible to this borer. Be sure that a variety of trees is planted in the neighborhood. This ensures that the loss of one or a few kinds of tree in the future will not be as devastating.

Features of insecticidal control efforts:

- Preventively treat ash trees no more than 10 to 12 miles from known infestations.
- Control is more effective on smaller trees, those with a trunk diameter of less than 10 inches.
- If many infested, untreated ash trees are nearby, insecticide and other controls are unlikely to protect the

tree due to the heavy onslaught of beetles from nearby infestations.

- It is more difficult to keep a tree alive that is already infested with emerald ash borer, whether or not dieback is occurring.
- Research is ongoing to determine if tree survival continues or if insecticidal treatment is just delaying the death of the tree.
- Follow insecticide label directions.

Professional insecticidal control options:

- Imidacloprid (Merit, IMA-jet, Imicide, Pointer) injected into the tree or the soil around it annually appears to be the best option to protect the tree from EAB. Soil treatments should be made within 2 feet of the trunk.
- Foliar and bark sprays of bifenthrin (Onyx), cyfluthrin (Tempo), permethrin (Astro), or carbaryl (Sevin) in both mid-May and mid- to late June control visiting beetles and hatching larvae.

Homeowner do-it-yourself insecticidal control options:

- Apply Bayer Advanced Garden Tree and Shrub Insect Control containing imidacloprid.
- Due the chances of insecticide drift to other areas, and the specialized equipment needed for application to large trees, foliar and bark application is best handled by certified arborists or other professional horticulturists.

Factors concerning treatment with imidacloprid:

- Soil injections take 1 to 2 months to move throughout the tree. Apply them within 2 feet of the trunk.
- Trunk injections take about 2 weeks to move throughout the tree.
- Larger trees, those with a trunk diameter of more than 10 inches, take longer for the insecticide to move throughout the tree, so soil treatment in the late summer or early fall when the leaves will stay green for several weeks is recommended. Trunk injections can be made in the spring.
- Smaller trees can be treated in the spring, but soil treatment should be made in the first half of May. Trunk injections should be accomplished by early June.
- A higher level of control is achieved once the tree has been treated for at least 2 years.

Certified arborists provide expertise in properly treating emerald ash borer, as well as expertly maintaining the health of ash and other trees and are listed

at <http://www.illinoisarborist.org/>. More information on emerald ash borer is available at <http://www.agr.state.il.us/Environment/Pest/index.html> and <http://www.emeraldashborer.info/>. If you see emerald ash borer or its damage, contact your local University of Illinois Extension office as listed at <http://web.extension.uiuc.edu/state/> or the Illinois Department of Agriculture at (800)641-3934. (*Phil Nixon*)

Winged Aphids

This fall, there have been fairly high numbers of migrating soybean aphids, particularly in the northern half of Illinois. In some areas, they appear as clouds of gnats. These are migrating from their summer host, soybean, to their winter host, buckthorn.

Many people have reported that the aphids bite. Insects with piercing–sucking mouthparts, including herbivorous ones such as aphids, probe whatever they land on. This is their way of identifying suitable feeding hosts and other features of their environment. So, in one way, they are biting; but in another way, this probing into the skin is not serious enough to cause any wounding or other lasting effects.

These aphids are migrating to buckthorn to lay overwintering eggs. In the spring, these eggs hatch into all females. After a few generations on their winter host, they migrate to the soybean fields to feed through the summer. This spring migration occurs over a longer period of time and is typically not as noticeable as the fall migration. As the nights lengthen in the fall, the aphids migrate once again from soybean to their wintering host, buckthorn. (*Phil Nixon*)

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, 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 © 2006, Board of Trustees, University of Illinois