



No. 18 • October 2, 2002

## PLANT DISEASES

### Oak Update

Oak stress was a topic of the most recent issue of this newsletter. Anthracnose, oak wilt, and bacterial scorch are diseases that should be considered when evaluating an oak problem. Information on them can be found in issues 3, 5, 11, 13, and 17 (2002). This year, the Plant Clinic has received many complaints of oak stress, particularly in the northern parts of the state.

Some of you have asked where we have seen oak wilt. We have confirmed isolation from samples in Carroll (13 instances), Cook (2), DeKalb (1), DuPage (1), Lee (2), Madison (2), McHenry (1), McLean (1), Tazewell (1), and Woodford (1) counties. The high number in Carroll County came from one forested area.

Bacterial leaf scorch is not something that we can confirm in this lab. We sent pin oak samples from Champaign County to AGDIA, Inc., for testing. We have four confirmed cases of bacterial leaf scorch on pin oak. Recently, I received a call from an arborist in JoDaviess County who sent a bur oak sample to AGDIA and received a confirmation of bacterial leaf scorch. We do have the disease in Illinois, but we do not have a handle on its distribution. (*Nancy Pataky*)

### Canker Cleanup

Now is the time to prune out dead wood and cankers from trees and shrubs. You will probably get scratched up a bit more now than once leaves fall, but it is much easier to see the dead areas to remove.

A canker is a dead area on the stem or trunk of a tree or shrub. The vascular tissue under the canker is dead and usually brown or black. The term “canker” is a general term referring to a symptom on the plant, but it does not indicate cause. A human analogy is the canker sore we get in or around the mouth. Cankers on plants may be caused by injuries (hail, mowers, insect feeding, etc.), environmental stress (cold, heat, scald, etc.), chemicals, or pathogens. They are common on a wide range of trees and shrubs, typically occurring on trunks, older branches, or injured plant areas on smaller twigs.

As the canker girdles the stem, leaves begin to wilt, turning yellow and then brown. Some young twigs may curl downward; their bark may lose color or blacken, depending on the canker or plant involved. The cankers produced by fire blight are often black on pear and brown on apple. If a canker girdles the stem, the twig dies from that point to the tip. If the stem is not girdled, the stem may show one-sided death or some leaves are affected while others are green. Cankers usually take months, sometimes years, to enlarge enough to girdle twigs, branches, and trunks. Canker appearance may be swollen, sunken, cracked, discolored, or bleeding sap or moisture.

Fungi are usually the causal organisms involved in canker development, but occasionally we find a bacterial canker. The fungal cankers often contain fruiting bodies of the fungus. These appear as pinhead-sized black specks embedded in the bark. Often, these fruiting bodies appear as small bumps covering the cankered area. In wet weather, they may exude colorful spore tendrils. Bacterial cankers do not contain fruiting bodies.

Although we find a pathogen in association with many cankers, the pathogens are usually opportunistic fungi. They do not cause problems on healthy trees, infecting only trees under stress. For this reason, canker fungi are known as stress pathogens. Canker pathogens enter through environmental injuries such as sunscald (summer or winter) or through injuries caused by insects, diseases, pruning, animals, and mechanical and chemical sources or through weakened tissue caused by poor growing conditions, transplant shock, excess or deficient soil moisture, rapid temperature changes, nutritional imbalance, extensive defoliation, etc.

Remove cankered wood, cutting until you leave only healthy wood on the branch. If cankers occur on the trunk, you may opt to leave them alone or remove as much of the decayed wood as possible so that the tree can more readily callous over the injured area. You can cut off spruce branches that die from *Cytospora* canker right up to the trunk, but you cannot remove infection from the trunk. Prune out stem cankers where aesthetically unappealing or where it is obvious that they will soon girdle the stem. Some cankers, such as anthracnose on sycamore, cannot be removed without removing most branches. Leave

these on the tree and take measures to promote tree health.

When pruning out cankers, keep in mind that this wood is infected with a pathogen. Remove affected wood from the site. Disinfect pruning shears between cuts where possible. Always try to prune in dry weather to prevent pathogen spread. With oaks, we prune only in the dormant season to avoid attracting beetles that might bring the oak wilt fungus to the tree. Now is the time to prune oaks.

Once pruning is completed, consider how to avoid cankers and dead wood in the future. Because stress is the actual predisposing factor for cankers, the first step toward disease management is identifying the source of stress. Once the source is identified, correct or modify the site, soil, or surrounding plants to make the conditions less conducive to cankers. This approach might involve diverting drainage away from the plant, pruning surrounding plants to allow better air flow, fertilizing the tree, providing water in drought, etc. Reduce risk of cankers by using plants adapted to your area. Buy vigorous, healthy-looking plants. Plant at the proper depth. Space plants based on mature size. Grow plants in well-drained, fertile soils with the needed soil pH for best plant growth. In other words, avoiding cankers is one of the major reasons for following all of those good horticultural practices we have all learned. *Report on Plant Disease*, no. 636, discussing canker and dieback of woody plants, is available on the University of Illinois Extension VISTA Web site or in local Extension offices. (Nancy Pataky)

### Remove Pine Wilt Mortalities

Pine wilt is a disease of pines that occurs on most Illinois pine species except white pine. The infected trees die quickly, usually within a season but sometimes sooner. The nematode pathogen that causes pine wilt is easily detected by extraction from the wood. Most plant labs confirm the nematode's presence by soaking wood discs in water overnight and examining the extract for the nematodes.

There is no cure for pine wilt. We can try to break the cycle of infection by removing infected trees as soon as possible, thus preventing spread of the nematode via Sawyer beetle vectors. Infected trees do not recover. If you have a brown pine tree in your landscape, remove it now. Brown pines are not going to recover. You can try bending branches to see if they are alive. If they snap when bent, they are dead. If all needles on the pine are brown, whatever the cause, remove the tree now. Dead pines may provide a place

for wildlife, but a tree infected with pinewood nematode may also serve as a source of infection for pines within the flight pattern of Sawyer beetles. The beetles are still feeding now and may be spreading the nematodes as you read. The tree needs to be removed from the site and preferably burned, buried, or chipped. For more information on pine wilt, refer to *Report on Plant Disease*, no. 1104, or issue 12 of this newsletter. (Nancy Pataky)

## HORTICULTURE

---

### Control Your Lawn Thatch

Thatch is one of the first characteristics to look for in Kentucky bluegrass that appears dead or dying. If the thatch layer is more than 1 inch thick, immediately peel back the sod and look for grubs and other insects. Then look at the root system for feeding injuries and discoloration. Root-infecting fungi that cause summer patch disease are often found in these discolored roots. Both grubs and summer patch are found in virtually all samples received for diagnosis in the summer when thatch is in excess.

What is thatch? If you have ever seen a soil core or cut a profile of sod, you may have noticed a layer that is above the soil surface and below the leaf tissue. It generally has a brownish appearance and the consistency of a Brillo pad. This network of fibrous material consists of undecomposed crowns, lateral stems called rhizomes, and leaf tissue. Other forms of debris may also deposit on the surface, contributing to the problem. In a balanced turfgrass ecosystem, this layer is kept in check by hungry fungi and bacteria. But once the system becomes out of balance, you're left with a thick blanket that can begin choking the life out of plants.

Thatch can cause assorted problems. Insects and fungal diseases have been mentioned. Thatch is very dense and hydrophobic, meaning that it has the ability to repel water. Imagine laying a plastic tarp across your lawn and punching small holes for the leaves to poke through. Now, try watering the turf on a hot day. Much of the water sits on the surface, and most evaporates into the atmosphere. Also, try applying fertilizer or pesticides to the turf. Again, it sits on the surface without reaching the roots where it is needed. Lastly, the organisms that decompose thatch begin to die along with the turfgrass because they lack proper gas exchange with the atmosphere.

The best way to control thatch is by using proper turfgrass-management techniques. Most importantly,

don't overfertilize your lawn. Make sure your spreader settings are adjusted to give the correct coverage. If your grass grows faster than the microorganisms can decompose it, the thatch begins to build. Also make sure your grass gets about an inch of water per week during the summer. This is good not only for the grass but also for the microorganisms.

What if you already have more than an inch of thatch on your lawn? Without tilling up the whole yard, it may take several years to recover. Begin by cultivating your lawn in the fall, and possibly the spring, with a vertical rake, by core aeration, or by deep tining. These processes mechanically remove the thatch and allow gas exchange so the microbial flora can do their job of decomposition. You can also temporarily remove grass clippings. When thatch is under control, leaf clippings add little to the thatch because they are composed primarily of water. Leaf mulching is a great way to return nutrients and water to the plants while also reducing landscape waste in landfills. A thin coating of topsoil on the surface in the thickest areas speeds decomposition by attacking thatch from the top and bottom. Last of all, many of the newer Kentucky bluegrass varieties are beautiful and quick to establish but can also be somewhat aggressive. So keep a watchful eye out for thatch buildup with new sod and seed. (*Andrew Hamblin*)

## INSECTS

---

### Mosquito Protection and Pesticide Clinics

Continue to protect yourself against mosquitoes as we progress into the fall. The northern house mosquito, *Culex pipiens*, is considered to be the main vector of West Nile virus, and it is present well into the fall months. Many feel that once there has been a freeze, there will be no more mosquitoes. However, bodies of water do not conduct heat nearly as easily as air, so water containing mosquito larvae does not freeze readily as the air temperature drops to freezing. Biting mosquitoes are common during the warmup or "Indian summer" that follows the first freezes of the fall. More than 20 species of mosquitoes in Illinois carry West Nile virus, including the eastern tree-hole mosquito, *Aedes triseriatus*. This mosquito overwinters as an adult and emerges to bite people anytime during the winter when there are warm temperatures. Wear insect repellent to protect you when working outdoors under warmer temperatures, particularly in the early morning and evening.

University of Illinois Extension and the Illinois Department of Agriculture are offering a series of mosquito pesticide-licensing clinics in October to fill the need of those wanting a license to treat for mosquitoes during the current influx of West Nile virus. The dates and locations are as follow: October 1 and 2, 2002: Gateway Center, One Gateway Drive, Collinsville, Illinois; October 7 and 8, 2002: Extension Building (Building #30), State Fairgrounds, Springfield, Illinois; October 9 and 10, 2002: Illinois Valley Banquet Center, 920 Second St., LaSalle, Illinois.

The schedule for these clinics is as follows. On the first day, General Standards training will be from 8:00 to 11:30 a.m., with General Standards testing from 12:30 to 4:00 p.m. On the second day, Mosquito Category training will be from 8:30 to 11:30 a.m., with testing from 12:30 to 4:00 p.m. There is a \$30 fee to attend the training, and preregistration is required. Call (800)644-2123 to register or to ask questions about the training. If you have questions about testing and licensing, call (800)641-3934. (*Phil Nixon*)

### Spruce Spider Mite

As temperatures start to decline over many regions of Illinois, spruce spider mite will start its second cycle of activity. Spruce spider mite, *Oligonychus ununguis*, is a cool-season mite, in contrast to the twospotted spider mite, *Tetranychus urticae*, a warm-season mite. Spruce spider mite feeds mainly on conifers such as arborvitae, Douglas fir, hemlock, juniper, spruce, and some pines. They use their piercing-sucking mouthparts to remove plant fluids and chlorophyll (green pigment). As a result, injured foliage appears bronze to brownish.

Adult mites are oval-shaped and about 1/60 inch long. They are black or tan, whereas the nymphs are light gray-green in color. The round, brown eggs are laid under bud scales or in the axils of needles. Female mites lay the overwintering eggs on plants from September through November. The eggs hatch into nymphs during spring. Spruce spider mite has two major periods of activity: The first is from April through mid-May, although they may be present into June in northern Illinois; the second is from late September through mid-October. It generally takes spruce spider mite 3 to 6 days to go from egg to nymph. The mobile or active stages feed mainly on needles, preferring older ones. There can be up to three generations per year in parts of Illinois.

The presence of spruce spider mite can be verified by knocking them off branches onto a white sheet of paper, where they are easily seen. They produce a green streak when crushed, whereas red streaks indicate predatory mites.

Managing spruce spider mite involves implementing proper cultural practices (including watering, fertility, and mulching to minimize stress) and using pest-control materials.

Pest-control materials recommended for managing spruce spider mite include bifenthrin (Talstar), dicofol (Kelthane), dimethoate (Cygon), hexythiazox (Hexygon), summer oil, and insecticidal soap. These materials primarily work by contact activity, which means it is important to cover thoroughly all plant parts where spruce spider mite may be located. Hexygon is an ovicide/miticide with activity on mite eggs. Improper use of any of these materials can lead to mite outbreaks because most of these pest-control materials can kill natural enemies of the spruce spider mite. If feasible, use a hard stream of water to remove mites from plants, as this approach is less harmful to natural enemies. Be careful when using summer oils on blue-needled conifers because they may cause discoloration. (*Raymond 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. The newsletter is edited by Mary Overmier, typeset by Oneda VanDyke, and proofread by Phyllis Picklesimer, all of 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>).

Copyright © 2002, Board of Trustees, University of Illinois