UNIVERSITY OF ILLINOIS EXTENSION

HOME, YARD & GARDEN PEST NEWSLETTER

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

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Pest Handbook Revision Deferred

We typically revise the *Illinois Commercial Landscape and Turfgrass Pest Management Handbook* biannually. With the current issue being published in January 2007, it was scheduled for revision.

Based on a number of factors, we have decided to delay the revision of this publication for another year, so there will not be a revision until 2010. We will develop an addendum to update the current handbook's content. This addendum will be mailed with each new copy of the handbook, starting in 2009.

We anticipate having the addendum completed in time to be published in the next and final issue of this newsletter for this year. We also plan on posting it on the University of Illinois Integrated Pest Management Web page at http://ipm.uiuc.edu/. *(Phil Nixon)*

PLANT DISEASES

Oak Bacterial Leaf Scorch Confirmations

Bacterial leaf scorch (BLS) sounds rather harmless. Most of us in the green industry think of a scorch problem as browning of leaf edges or possibly some stem tip dieback. That is not incorrect. Leaf scorch, caused by many factors (site, environmental, and cultural), is discussed in the *Report on Plant Disease,* "Leaf Scorch of Woody Plants," available online at http://www.aces.uiuc.edu/~vista/abstracts/a620.html.

BLS symptoms may appear like any other scorched tree the first year or two. Symptoms become progressively worse, usually alarming the owners after a few years. BLS eventually kills the infected tree. I have reported that this takes 6 to 8 or more years, but it is difficult to know exactly how long it takes because we don't know when infection first occurs. It does appear that trees die 6 to 8 years after alarming symptoms are noted. I have watched this happen to two specific oak trees in Champaign-Urbana. One was about 50 years old. The other is much older and is still declining. For details about BLS, start by viewing the article "Does Your Tree Have BLS?" in issue 15 (2008) of this newsletter and then follow suggested links.

Typically bacteria can be detected in the lab by sectioning tissue and observing bacterial exudate with a compound microscope. Low levels of the bacterium can be detected by culturing tissue onto agar. These common lab procedures do not detect *Xylella*, the BLS bacterium. ELISA (enzyme-linked immunosorbant assay) is used to confirm the presence of this bacterium. You may be more familiar with ELISA tests to detect various viral pathogens. It is the same lab technique. The University of Illinois Plant Clinic runs the BLS ELISA only in the late summer and early fall. In part, this allows us to bulk samples and offer the assay at a more economical fee. More importantly, bacterial concentration is usually high at this time of year, resulting in a greater number of definitive assays.

This year, we assayed 22 oak samples for *Xylella fastidiosa*, the pathogen causing bacterial leaf scorch (BLS). We used ELISAs. Keep in mind that the samples do not represent a survey of Illinois. They were sent to us by individuals who have noticed suspect scorch symptoms on mature oaks and wanted to have them tested for the BLS pathogen.

We confirmed seven cases of BLS. These oaks came from Champaign, Douglas, and Madison counties. Often, the oak species information is not provided to us. Of the seven positive cases, one was a northern red oak, one a swamp white oak, one a pin oak, and the other four unidentified but certainly in the red oak group. We do not have any additional information on disease management to offer. Still, positive identification is always the first step to any disease management. If you see symptoms as described here, consider testing for BLS late next summer. *(Nancy Pataky)*

Wood-Rotting Fungi

There are many fungi that cause decay of wood in trees; and it can be a frustrating task to try to identify one of over 500 species that might be involved. Nearly 2 years ago, I listened to a presentation by Christopher Luly at the Illinois Arborists Association annual meeting. Dr. Luly discussed wood-rotting fungi and helped simplify the identification process for me.

If you work in the area of tree health, I strongly recommend you get a copy of Dr. Luly's book, *Wood Decay Fungi Common to Urban Living Trees in the Northeast and Central United States.* I bought mine through the Illinois Arborists Association, but you can probably order it with the ISBN #0-9767129-1-1, printed by Urban Forestry LLC in 2005. It is only 58 pages long, and there are many pictures.

Wood decay is caused by fungi. The major group of fungi involved is the basidiomycete group. There are also a significant number of ascomycete fungi that could be involved. These terms might not mean much to you, but the fruiting structures of these fungi on living trees are what we look at to help confirm the identity of the pathogen and help estimate the amount of decay. The mushrooms, conks, or other fruiting structures still attached to living but damaged trees give us the facts to make an identification of the fungus. Once we know the fungus involved, we can determine whether the rot is expected to affect roots, trunk or branches, sapwood or heartwood, and sometimes even the amount of decay. Of course, fruiting structures are not always present, but this book is helpful in cases where fruiting structures are found. Dr. Luly's book presents a photo key to help separate the common tree decay fungi. He addresses the major urban wood rot fungi in detail, listing habitat, fruiting time of year, type of decay, mode of action of the fungus, and tree health symptoms.

Here are two examples of wood rot fungi you could identify with this book. Black, fingerlike structures at the base of my dying redbud tree are a canker fungi. This fungus is a *Xylaria* species, better known as dead man's fingers, a common wood rot fungus. The fungus fruits from summer through fall. In Dr. Luly's book, it states that this fungus causes soft, butt, and root rot, which was certainly the case on my tree. It is listed as a weak pathogen with slow decay. That too was the case.

The second example is more typical of another type of fruiting body called conks, shelf fungi, bracket fungi, or similar names. This one is from honeylocust. It is growing out of the trunk of a living tree. This conk is found attached to the base of the tree or to roots. The fungus causes white rot of the roots and butt of the tree. Dr. Luly lists this as a moderately fast-progressing root and butt rot and adds that the fungus can kill cambial tissue and kill roots. It is not difficult to understand how it killed many of the honeylocust on the University of Illinois campus in a few years. Take a look at this book when you get a chance. I know it will help you in your tree care work. *(Nancy Pataky)*

Oak Tatters Tidbit

"Oak tatters" is the name for a condition we see each spring in Illinois on oak. The foliage looks as though it has been eaten by an insect, leaving only the major veins and a bit of tissue around the veins intact. The foliage is not scorched or necrotic. What is left on the leaf is green. The foliage appears lacy, and the canopy appears thinned.

In issue no. 9 (2008) of this newsletter, we discussed this recurring problem in Illinois. I told you that current research points to chemical injury as the cause of oak tatters. In 2004, three researchers at the University of Illinois did a preliminary study that indicated that drift of chloroacetamide herbicides (possibly from applications onto corn and soybean fields) was a possible cause of the leaf tatters syndrome. The researchers are Jayesh Samtani, John Masiunas, and Jim Appleby. The group submitted an article to the *Hort Science* journal in June 2008. That article reports results of the third set of experiments showing symptoms following chloroacetamide herbicides. The article was accepted and should be in print shortly. Watch *Hort Science* articles this winter for more.

I spoke with Dr. Appleby about oak tatters in 2008. Although we saw it on one Plant Clinic oak this year for the first time, in general the condition was not as prevalent this year. Dr. Appleby speculates that the wet spring prevented spraying of fields until after oak foliage was already expanded and more tolerant of the chemicals. For the record, the Plant Clinic oak has recovered nicely this year. Only time will determine the long-term effect of tatters. *(Nancy Pataky)*

INSECTS

White Grubs

We have had scattered reports of turf damage due to white grubs around the state. These typically show up when an area experiences droughty conditions, and the grubs make their presence known with wilted turf. In other cases, wildlife such as skinks, raccoons, armadillos, and birds damage turf to get to the grubs.

Our timely rains throughout most of the summer have helped prevent heavy grub damage. During the first half of July, when the Japanese beetle, northern masked chafer, and southern masked chafer adults were laying eggs, many areas of the state had soft soil and green, actively growing turf due to timely rains. This resulted in egg-laying being more widespread than that which occurs in typical years, in which egg-laying is concentrated in irrigated turf.

Even with these moist soil conditions and actively growing turf during egg-laying, some areas ended up with fairly high grub numbers, typically in the range of 15 to 25 grubs per foot square. Although we use a white grub threshold for treatment at 10 to 12 Japanese beetle or masked chafer grubs per foot square, the effect of grubs on turf is variable. Soil type, degree of use, and other factors apparently enter into the amount of damage that occurs. Heavily used turf may show grub injury with fewer than 10 grubs per foot square. Alternatively, over 30 grubs per foot square have been found in healthy turf under light-use conditions. There appears to be other factors that enter into white grub damage that we do not understand.

Mammals and birds commonly damage turf with as few as three grubs per foot square. While searching for and feeding on grubs, a single skunk in one night can make about 100 holes through the turf that are 2 to 3 inches in diameter. Raccoons peel back the sod in areas that are usually 4 to 8 inches wide to expose the grubs. Armadillos dig holes several inches deep and several inches wide to feed on grubs. Armadillos entered Illinois several years ago and are most common in the southern third of the state. However, several have been found in the rest of the state, including northeastern Illinois. Insectivorous birds, such as starlings, blackbirds, cowbirds, and robins, peck holes through the thatch to feed on grubs. Areas that have been heavily worked by birds look brown from hundreds of tiny divots of thatch having been pulled up. Where the grubs are numerous, robins in particular chicken-scratch, scratching away the turf in patches that are several inches across in searching for grubs.

Insecticidal control of these older, larger grubs is more difficult than earlier in the growing season. Trichlorfon and clothianidin are more effective than several other insecticides labeled for white grub control in turf. Trichlorfon is sold as Dylox. Clothianidin is sold as Arena and is also sold as Aloft in a mixture with bifenthrin. Insecticidal nematodes, particularly *Heterorhabditis bacteriophora, Steinernema glaseri,* and *Steinernema feltiae,* are also effective against these larger white grubs. All of these treatments should be watered in thoroughly after application. The nematodes should also be applied to wet turf because they die if they dry on the turf. As trichlorfon lasts only 5 days after application, water dry turf areas a couple of days before application to bring the grubs up into the root zone. *(Phil Nixon)*

Minute Pirate Bugs

There have been numerous reports of people being bitten by minute pirate bugs throughout the state. Minute pirate bugs are true bugs, Order Hemiptera, in the Family Anthocoridae. A common species, *Orius insidiosus,* is known as the insidious plant bug.

Adult minute pirate bugs are black and white, flattened, oval bugs about 1/16 inch long. They have a needlelike beak that originates at the front of the head and is bent back under the head when not in use. They use these piercing–sucking mouthparts to penetrate their prey and suck out their juices. They feed primarily on other small insects and mites, being available commercially for the biological control of small plant pests such as spider mites, thrips, and aphids.

Minute pirate bugs are native to Illinois and are commonly found on foliage, particularly the blossoms of flowering plants. Adult pirate bugs are excellent fliers; the smaller, brownish nymphs look similar to the adults but have no wings. It is common to have nymphs and adults walking on your arms when hand-weeding, pruning, or otherwise working with outdoor plants. While you're sitting or walking outdoors, it is common for adult minute pirate bugs to fly onto your arms and other areas of your body.

Many insects determine whether something is good to eat by tasting it. It is thought that minute pirate bugs probe whatever they land on to determine whether it is food. People feel this probe as a pinchlike bite, which is considerably more noticeable than the insect delivering the bite. For many people, the pain is short-lived and nothing comes of the bite. In others, swelling and itching can occur at the bite, probably due to the body's reaction to foreign proteins that entered the body during the bite.

There is very little that can be done to avoid bites while outside, other than keeping most of your body covered with clothing by wearing long-sleeved shirts and long pants. Minute pirate bugs tend to be more active during the daytime and seem to be particularly active before it rains.

Insect repellents used for protection from mosquitoes, chiggers, and ticks are not effective against these insects. Insect repellents function by confusing the sensory apparatus that insects use to detect us. Mosquitoes and other biting pests are attracted by the lactic acid, carbon dioxide, and other chemicals that we exude from our bodies. Insect repellents keep the insects from detecting these chemicals and following their gradient to us. Thus, insect repellents would perhaps be better called insect non-attractants.

Because minute pirate bugs do not seek humans but randomly land on them, repellents have no effect against them. Some repellents have perfumes added to them to make them more acceptable by people. It is possible

that the perfumes in the repellent might even attract the minute pirate bugs because the bugs tend to be numerous on flowers.

Minute pirate bugs are probably more numerous this year than normal due to long-term weather trends, as well as fluctuations of their natural enemies such as pathogens. In addition, the mild weather extending into the fall is probably allowing the minute pirate bugs to be active longer than normal. It may have allowed an extra generation of bugs to be produced, which would also increase their numbers. Once the weather turns seasonably cooler and the daytime highs remain below 50˚F, the minute pirate bugs enters protected areas to overwinter, not to be noticed again until spring. *(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.

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