

Number 13 – July 30, 2010

Bagworms

Bagworms continue to be numerous throughout the state with many bags being about one and one-half inch long and others much smaller at about three-fourths to one inch long. Certainly, the caterpillars in the smaller bags are still controllable with *Bacillus thuringiensis kurstaki* (Dipel, Thuricide, many others). The larger ones as well as the smaller ones can still be easily controlled with a spray of spinosad (Conserve), cyfluthrin (Tempo), and other labeled pyrethrins. Btk is not reliably effective on older caterpillars. Older insecticides such as carbaryl (Sevin) and malathion, which are marginally effective on younger caterpillars, will provide almost no control at this time.

Bagworms can also be controlled on shrubs and smaller trees by handpicking. Although rarely economic for professionals, clientele may wish to do this. Picked caterpillars should be smashed, dropped into rubbing alcohol or soapy water, or otherwise eliminated. If live bags are dropped under the tree, many will crawl back up into the branches. Similarly, those just thrown into the trash are also likely to escape to attack other plants. These insects have a broad enough host range that they are likely to find a suitable host.

Typically, bagworms pupate in southern to central Illinois around mid-August

ranging to early September in central to northern Illinois, depending on the year. Through this growing season, we have been about two weeks ahead of a normal year, so pupation may already be occurring in southern Illinois.

Bagworms that have pupated will have the bag closed at the top, and there will be no green foliage on the bag. The associated photo shows pupated bagworms, including one from the previous year and one with a protruding male pupal case. Pupated bagworms are not controllable except by handpicking. Pupation has not started in central and northern Illinois, although it may start soon.

Male bagworms pupate after five larval instars, but female bagworms complete six larval instars before pupating. This means that female caterpillars feed several more days than males and that a pyrethroid spray when part of the population has pupated may still provide excellent control for the coming year. Several years ago, I sprayed bagworms in that situation with Tempo in central Illinois on Labor Day weekend. A couple of weeks later, I noticed male pupal skins protruding from the ends of the bags. This indicated that the male caterpillars had already pupated when I sprayed, and that the male moths had emerged. However, many bags contained dead larvae. The following year, the number of infested arborvitae had dropped from 120 trees

to four. I had missed the male caterpillars, but had killed the female caterpillars before they had pupated.
--*Phil Nixon*

Zimmerman Pine Moth

Zimmerman pine moth should be susceptible to control in southern Illinois at this time. Treatment in northern Illinois should occur around mid-August. Permethrin, sold as Astro and other trade names, will be effective for several weeks sprayed on the trunk and larger branches.

Zimmerman pine moth caterpillars feed at branch whorls of Scotch, Austrian, red, and other pines. Damage appears as whitish globules or cones of pitch on the trunk in the area where the branches attach to the trunk. They may also attack at the base of major branches, causing browning of the foliage. Frequently, when trunks are attacked, their feeding weakens the trunk to where it snaps off at that point. Several lateral buds will break and grow, resulting in a multi-leader tree that looks more candelabra-shaped than that of a telephone pole.

The caterpillars are whitish to brownish, with or without dark brown spots. They tunnel primarily just under the bark, making it easy to expose larvae or pupae by breaking off and looking under and in pitch masses. Fully grown larvae are about one inch long. Adult moths are gray, black, and brown patterned, being one-half to five-eighths inch long. Eggs are laid under loose bark. The resulting larvae feed on bark and roam on the outside of the trunk for a few weeks,

making them susceptible to an insecticide residue on the trunk. They spend the winter as young larvae in hibernacula under the bark. The caterpillars emerge in April and roam again for a couple of weeks before tunneling under the bark. They are also susceptible to control during this spring roaming phase.--*Phil Nixon*

Japanese Beetle Resistant Elms

Research published in May, 2010 by Jennie M. Condra, Christina M. Brady, and Daniel A. Potter of the University of Kentucky provides Japanese beetle resistance information for Dutch elm disease resistant elms. They found that the Japanese elm species *Ulmus parvifolia* and *U. propinqua* and their cultivars were less susceptible to feeding by adult Japanese beetles than American elm, *U. Americana*, native to North America and *U. wilsoniana*, native to China. In general, hybrid elms were more heavily defoliated than the straight species. Of the hybrids tested, New Horizon and Frontier consistently experienced less feeding damage, whereas Morton Glossy Triumph suffered heavy damage. All three hybrids have some Japanese species heritage, so the Japanese species resistance is not a major factor in all hybrids. The research article, Resistance of Landscape-Suitable Elms to Japanese Beetle, Gall Aphids, and Leaf Miners, with Notes on Life History of *Orchestes alni* and *Agromyza aristata* in Kentucky, was published in *Arboriculture and Urban Forestry* 36(3): 101-109. Information is also provided on European flea weevil and a leaf mining fly. --*Phil Nixon*

Bacterial Leaf Scorch Treatment

For many years I have been advocating testing of oaks for bacterial leaf scorch (BLS). This disease is a silent killer of sorts. It is caused by a bacterium, *Xylella fastidiosa*, which lives only in the xylem tissues. Symptoms begin as leaf scorch. Scorching becomes progressively worse over a period of 3 to 8 years or so, eventually resulting in tree death. Often the true cause of the disease is not discovered until tree decline is quite advanced. I have seen this happen to several mature pin oak trees in Champaign and Urbana. Other species are also susceptible, but our lab has only confirmed it on oaks. I have described this disease in past articles of this newsletter, most recently issue #14 in 2009.

John Hartman and Ed Dixon of the University of Kentucky, with Shawn Bernick of Rainbow Treecare Scientific Advancements, recently published an *Evaluation of Therapeutic Treatments to Manage Oak Bacterial Leaf Scorch*. This article appears in the online journal, *Arboriculture & Urban Forestry*, Volume 36, May 2010. Treatments were applied to infected pin oaks over a period of five years. The article discusses treatment options and results. The authors also discuss other options for extending the life of infected trees.

No cure of this disease has been found. In fact, nothing works to cure an infected tree. Still, this study concluded that therapeutic treatments (those applied to infected trees) may help prolong tree life. For some of our clients, even prolonging tree life is desired over loss of the tree. Treatments used in this study included root flare soil drenches of paclobutrazol, basal trunk

applications of anti-microbial compounds, and spring applied root flare injections of oxytetracycline. If you are considering therapeutic treatments of oaks with BLS, read this article for detailed analyses of treatments. Some take home points to consider if using oxytetracycline root flare injections are that spring injections reduced scorch levels and delayed summertime scorch symptom appearance by a couple of weeks. Additionally, injections done three weeks after full leaf expansion of first leaves seemed to be better than other springtime applications. Hopefully you will find time to read this journal article before doing BLS treatments.
--Nancy Pataky

Hosta Petiole Blight

This past week we had a beautiful case of hosta petiole blight. I beg the pardon of the grower whose hosta was devastated by this disease. It is truly amazing that a fungal pathogen can so totally take over a large, otherwise healthy, hosta, causing all of its leaves to collapse.

Sclerotium blight, also known as Southern Blight, is caused by a fungus, *Sclerotium rolfsii*. For many years it was thought of as a southern disease because it was not known to survive typical Midwest winter (low) temperatures. The popular practice of mulching plants, especially over the winter, has helped protect this fungus through otherwise killing low temperatures. In fact, research at Iowa State University has shown that the pathogen can survive under mulched hostas, but the fungus is often killed when mulch covering is removed before winter.

Symptoms begin in hot, humid weather with wilting and discoloration of lower leaves. In a short time the upper leaves also wilt; and close inspection shows a soft, brown rot of the base of petioles. The entire leaf collapses above the site of infection. The fungus, *Sclerotium rolfsii*, appears as a flat, white matt of mycelium on the petioles and surrounding soil. The first image shows this mycelium on an infected hosta in Urbana this past week (photo courtesy of Travis Cleveland). This is often referred to as a fan of mycelium. Tiny tan, mustard seed-sized sclerotia (fungal survival structures) can be seen in this mycelium and on the soil as shown in the second image. The pathogen has invaded our state, probably from the south, and probably as sclerotia on transplants. Hosta is only one of many hosts of this fungus.

How do we manage this disease on hosta? The fungus is spread by sclerotia or by mycelium growing from the sclerotia. There are no spores. Remove all of the infected plant parts, placing them directly into a bag to remove them from the garden. Also remove the top several inches of soil around the plant, again being careful not to spill any as you work. If you dig up the entire plant, turn the soil over to help sclerotia decompose more quickly. If you plan to work with the plants you have, there are couple of fungicides that may have some suppressive characteristics and are registered for use on ornamentals. Flutolanil and PCNB are available for commercial application. There is nothing guaranteed to control this pathogen. Some homeowners have tried thiophanate-methyl, which also has a general ornamental label. Pull mulch back from the base of plants before

winter to help kill the fungus. There are differences in levels of susceptibility among hosta cultivars, but nothing with high levels of resistance. Iowa State University has a very good publication on Sclerotium Blight available at <http://www.extension.iastate.edu/publications/sul8.pdf>.--Nancy Pataky

Thank You and Farewell

This is my last article for the Home, Yard, and Garden Pest Newsletter. I want to take this opportunity to thank my loyal readers, as well as those who are new to the newsletter, for taking the time to read and question what we have to say. I am about to start my next phase of life – retirement. Some say I am too young to retire. I certainly feel that I am too young. Still, I have worked as the Plant Clinic Coordinator, Plant Clinic Assistant Director, and Plant Clinic Director for over 30 years now, so obviously I am not too young to retire. There are parts of the job I will not miss, mostly related to grants, forms, and reports. I will definitely miss interacting with clients and trying to help growers with plant disease problems.

The first image in this article is not my young replacement. In fact, that happens to be me near the beginning of my career when I was told that if I worked at the University of Illinois Plant Clinic for 5 years, then I could probably move on to bigger things. I enjoyed those first 5 years and the 25 additional years that followed. The second image is me as well, but in November of 2009.

I would like to announcement my replacement, but as of this writing, such a person has not been announced. Part

of my duties will be assumed by an IPM coordinator. The internal search for that person is nearly complete. It is hoped that most of my diagnostic duties will be assumed by another "diagnostic" person yet to be named. Evidently the search processes take much longer than any of us could have imagined, so for a few weeks the Plant Clinic may be in a state of transition. Be patient. I believe the ship will soon be righted.--*Nancy Pataky*

Asiatic Garden Beetle

An accidental import from Japan and China in the 1920's, the Asiatic Garden Beetle has expanded its range to cover much of northeastern North America. It is commonly found from New England to Ohio and down to South Carolina. In 2009, the Asiatic garden beetle was found in traps in St. Clair County in Illinois.

The larvae will feed on the roots of turf grass but they prefer the roots of fruits, vegetables and ornamental plants. The adults feed on over 100 species of plants, though they show a preference for flowers such as asters, dahlias, and roses.

The adult beetles are small, velvety and cinnamon brown in color. Adults emerge from the soil from mid-July to mid-August and feed on the host plant. These foliage feeders are active at night and return to the soil during the day. Unlike Japanese beetles, Asiatic garden beetles do not skeletonize leaves; instead, they strip, shred, and notch the foliage.

After mating, eggs are laid in the soil in clusters of 20; larvae hatch in late

summer. The grubs feed on organic matter, roots and root hairs in the soil. The larvae overwinter and pupate in the soil the following spring.

If you suspect you've seen this insect or to submit a sample, please contact the Illinois Cooperative Agricultural Pest Survey Program -

invasives@inhs.illinois.edu

--*Stephanie McLaughlin and Kelly Estes*

Asian Longhorned Beetle: Your Vigilance Can Save Trees

The Asian longhorned beetle (*Anaplophora glabripennis*), a native of China, was brought to the United States in wood packing material. This insect is a serious pest even in its native range. Here in the United States, where it has no natural predators, it is of even more concern. The Asian longhorned beetle feeds on hardwood trees including maple, birch, horse chestnut, poplar, willow, elm, ash, and black locust.

Asian longhorned beetles are 1 to 1.5 inches long. Their bodies are shiny and black with white spots. Another conspicuous characteristic is their very long, white banded antennae that are 1½ to 2½ times their body length. The females will chew depressions into the bark of hardwood trees to lay eggs. Each female beetle can lay between 35 and 90 eggs. After 10 to 15 days, larvae will emerge from the eggs and feed under the bark of the tree until the following spring when they pupate. The damage done from the feeding larvae severs the pathways the tree uses to transport nutrients and water, ultimately killing the tree. In the summer, the beetles emerge as adults, leaving exit holes

about the size of pencil erasers. These exit holes can be seen all over an infected tree and are an important symptom.

The Asian longhorned beetle is capable of doing vast amounts of environmental and economic damage by attacking American hardwood trees. Even though these beetles can fly distances greater than 40yards, they do not usually spread very fast on their own. However, human activities such as the domestic transportation of wood products and use of non-local firewood could spread these beetles very quickly.

The government has programs to protect our trees, such as the quarantine of infected areas, treatment of transported wood products, and the replanting of areas that have lost trees to this pest. However, the successful control of this pest will be dependant on the vigilance and cooperation of

business owners and community members. Do your part to protect our trees by adhering to any government protocol about transporting wood products, using local firewood, and keeping an eye out for this pest of its warning signs.

August has been declared Asian Longhorned Beetle Awareness month. Though as of 2007, Asian longhorned beetles are believed to have been eradicated in Chicago, we continue to keep an eye out for this invasive insect. When looking for the Asian longhorned beetle, you may run into some of its local look-a-likes such as the cottonwood borer or the whitespotted sawyer. If you think you have spotted an Asian longhorned beetle, please contact the Illinois Cooperative Agricultural Pest Survey (CAPS).

<http://www.inhs.illinois.edu/research/CAPS/contacts.html>

--Irenka Carney and Kelly Estes