

Number 9 - June 19, 2009

Scouting Watch

Japanese beetle adults were reported in Urbana on June 16. High numbers are yet to be observed. It is still too early to see how large the emergence will be this year in central Illinois.

Honeylocust plant bug is causing heavy damage in some areas of the state. In northern Illinois, the insect is still in the nymphal stage, so an insecticide spray of carbaryl (Sevin), acephate (Orthene), or a pyrethroid such as cyfluthrin (Tempo), permethrin (Astro), or bifenthrin (Onyx, Talstar) should still be effective. In central and southern Illinois, this insect is in the adult stage which flies readily between trees and causes less feeding damage, making control efforts less useful.

Honeylocust borer adults are being found throughout the state. It is similar in size to bronze birch borer and emerald ash borer and causes similar damage, but to honey locust. It tunnels in the cambium and emerges through one-eighth inch wide, D-shaped holes. It not only attacks honey locusts dying from another cause, but can attack relatively healthy honey locusts in landscapes. Annual imidacloprid (Merit) drenches to bare soil within two feet of the trunk will provide control.-- *Phil Nixon*

Bagworm

As was reported in last week's newsletter, it appears that the bagworm eggs may have been killed by severe winter temperatures in central and northern Illinois. Before treating, be sure to scout for young caterpillars. Egg hatch was probably normal in southern Illinois, and treatment is recommended on trees with large populations. Ballooning by young larvae should be ending in southern Illinois at this time, allowing one spray application to be sufficient to provide control.

Bagworms live in individual silk tents, or bags, that they cover with pieces of the foliage that they are feeding upon. The bags are spindle-shaped and vary from one to two inches long. Eggs overwinter in the females' bags that hang on the tree throughout the winter, tied to their branches with many loops of silk. The eggs hatch when catalpa blooms, which occurred a week ago in central Illinois.

The newly hatched larvae crawl out of the bottom of their mother's bag and crawl to the top of trees. The tiny caterpillars almost immediately spin tiny bags and cover them with bits of foliage or anything else that they can find. They spin out strands of silk two to three feet long and swing on the ends of them. Wind gusts break them loose and they drift on the wind. This is called

ballooning. Updrafts can keep them aloft for very long distances.

Being carried on the wind, they have no choice of food plants as their only options are to feed on the plant that they land upon or crawl to the top and balloon again. This process lasts for about two weeks after egg hatch. As a result, they feed on many trees and shrubs, being most common on arborvitae, Eastern red cedar, other junipers, spruce, Eastern white pine, crabapple, cherry, and oak.

Bagworms start to feed at the top of the tree and work their way down. They protrude the front end of their bodies out of the bag to feed, using their true legs to drag themselves and their bags around the tree. They have dark heads and whitish bodies with dark spots. The larvae feed on deciduous leaves from the margins inward, sometimes eating the entire lamina, leaving only the midvein. Needles on evergreens are eaten from the tip to the base. Needled evergreen branches stripped of foliage will usually die, and entire trees can be killed by heavy infestations. Deciduous hosts will refoliate stripped branches, even entire trees.

Fully-grown bagworms pupate within their bags in late summer, typically between mid-August and early September. Male moths are about one inch long and black with clear wings. They emerge through the bottom of the bag, frequently pulling their pupal skins out of the bag as they emerge in the fall. The females emerge within the bag as larvaform adults, being dark reddish-brown and caterpillar-like. The male moths fly between female bags, mating with the females through the bottom of

the bag. Male moths die within a few days, having no functional mouthparts and being unable to feed. Mated females fill their bodies with 300 to 1000 eggs and die.

Bagworms can be controlled by hand-picking the bags from fall into early June and destroying them. With approximately a one to one sex ratio, every other bag will contain an egg-filled female. Hand-picking is effective on shrubs and small trees, but most bags are not reachable on taller trees.

Insecticide spraying should be delayed for two weeks after egg hatch to allow ballooning to end. This allows control to be achieved with only one application. *Bacillus thuringiensis kurstaki* (Dipel, Thuricide) is very effective except on older caterpillars. Spinosad (Conserve), cyfluthrin (Tempo), permethrin (Astro), bifenthrin (Onyx, Talstar), and other pyrethroids also provide effective control.-- *Phil Nixon*

Pine False Webworm

There have been reports of pine false webworm, *Acantholyda erythrocephala*, attacking Eastern white pines in northern Illinois. Larvae are present at this time and susceptible to control. There are two webworms that attack pines in Illinois, using silk to web the needles together, and then feeding in the silk tent. These tents become brown as a result of brown needles within the tent and large amounts of brown larval feces hanging in the web.

Pine false webworm feeds heaviest on Eastern white pine and red pine, but also attacks mugo, Scotch, Austrian,

Japanese red, and table mountain pine. Adult sawflies emerge from overwintering pupae in the soil in May, and lay eggs. The female's saw-like ovipositor cuts slits in the needles, inserting the end of the eggs into the slits. The eggs hatch into brown larvae that feed for 18 to 20 days before dropping to the soil to pupate. Webbing is typically spun around needles below the branch tip, leaving the end of the shoot free of webbing and damage. There is one generation per year.

Pine webworm, *Tetralopha robustella*, also overwinters in the pupal stage, emerging as moths from cocoons in the soil through much of the summer from June into August. The caterpillars spin webbing around foliage on the ends of branches, and enter needles to feed as leafminers. When larger, they live outside of the needles, continuing to feed on them. Fully-grown caterpillars are yellowish brown with dark brown stripes and about five-eighths inch long. In late September, the caterpillars drop to the soil to pupate. In the Midwest, they feed on Eastern white, red, Scotch, jack, and mugo pine.

Control pine false webworm with high pressure sprays of pyrethroids such as cyfluthrin (Tempo), permethrin (Astro), or bifenthrin (Onyx, Talstar) to penetrate the webbing and reach the larvae. Carbaryl (Sevin), spinosad (Conserve), and acephate (Orthene) will also be effective. The same insecticides will control pine webworm as well as *Bacillus thuringiensis kurstaki* (Dipel, Thuricide). Because pine false webworm is a sawfly, not a caterpillar, B.t.k. will not be effective on it. -- *Phil Nixon*

Slime Mold Time

Wet conditions in late spring and early summer this year have brought out some interesting looking slime molds. Slime molds feed on decomposing organic matter, and can be found in almost any given spot in the home landscape; sidewalks, mulched areas, wood chips in play areas, or over vegetation such as turfgrass, strawberries, flowers, ground covers, weeds, and the base of woody plants. Mulched areas under shrubs and at the base of trees provide the perfect habitat for slime molds. These organisms were once believed to be fungi, but are now understood to be amoeba-like protists, similar to fungi.

They are not parasitic, so they will not cause direct harm to your plants or your family. Occasionally they can cause problems on lawns or low-growing ground covers by blocking the necessary sunlight that plants need to grow, but in most cases they are completely harmless. They feed on microorganisms in dead plant material.

Most slime molds are pretty. They range in color and size and may be white, gray, cream to light yellow, bright yellow to orange, violet, blue, green, or purple-brown greasy masses and can get as large as one to two feet in diameter. The plasmodium, or "feeding" stage, may appear as a slimy, amoeba-like organism. These organisms do "move", but too slowly to watch. There is a fascinating movie showing this movement on "You Tube". Homeowners are often concerned when, after a day to several days, they notice that the colorful and slimy "blobs" have migrated a short distance. Slime molds appear after a rain event in warm weather.

Heavily irrigated landscape beds lined with mulch may provide the ideal setting for slime molds to grow.

Clients sending slime mold samples to the Plant Clinic are usually concerned with how to get rid of them. No chemical controls are known, nor needed, to combat slime molds. They usually dry up and disappear in dry weather. If you have a garden with some unsightly patches of slime molds that you wish to eliminate, simply remove the spore masses in a plastic bag and break up the remaining masses by vigorous raking or brushing.

One type of slime mold displays an unpopular resemblance to dog vomit. The plasmodium soon develops colorful, crusty fruiting bodies filled with masses of dusty spores. The image (courtesy of Jim Schuster) shows a slime mold on mulch in a garden bed.

For more information about slime molds, read Report on Plant Disease, no. 401, *Slime Molds in Turfgrass*. The publication is available free of charge at <http://www.aces.uiuc.edu/~vista/abstracts/a401.HTML>. Another helpful site is a Cornell University fact sheet: <http://plantclinic.cornell.edu/FactSheets/slimemold/slimemold.htm>. An interesting site with images of mulch fungi, including slime molds, was created by Tom Volk, a University of Wisconsin mycologist, and can be viewed at http://botit.botany.wisc.edu/toms_fungi/mulch.html. --Nancy Pataky

Azalea Exobasidium Gall

This disease is not a regular problem in Illinois. It is probably a direct result of the extremely wet conditions we have experienced so far this year. Azalea Exobasidium gall is a leaf and flower gall. The galls have a white, velvety appearance because of the spores, conidiophores, and basidia that form above the leaf surface. Mycelia grow between epidermal cells. Although *Exobasidium* fungi may cause swollen shoots, stem galls, witches' brooms and sometimes red leaf spots, we are most likely to see leaf galls as seen in this image of azalea leaves infected with *Exobasidium vaccinii*. The galls appear to be balls of tissue, but closer inspection shows that they coat the leaf, which in turn curls up into a ball.

Spores are dispersed from the basidia on the leaf surface. Spread is by wind or splashing water. Spores may infect young leaves when water is present, but most reports of secondary spread are minimal. Wet, shady areas are more conducive to infection. Survival of the fungus over winter occurs in infected buds.

Exobasidium vaccinii may infect plants in the Ericaceae family, including azalea, rhododendron, leucothoe, and Japanese andromeda.

This disease is usually managed by hand picking infected leaves. Do this as soon as possible to avoid further spread. Place infected tissue directly into a plastic bag before disposing. If fungicides are used, they should be sprayed in the spring just before bud break. They are used as preventive

sprays before the disease appears. Check state pest management handbooks for registered products, but two commonly used products are Bordeaux mixture or Bayleton. A second spray may be needed, especially in wet seasons. If Bayleton is used, add a spreader sticker to obtain better coverage. --Nancy Pataky

Oak Wilt or Look Alike?

Oak wilt is a lethal disease to infected oaks. Additionally, it may spread by root grafts (root connections) between oaks or it may spread overland by beetles carrying the causal fungus. If you have established oaks, this can be frightening. It may also cause some confusion as to symptoms in your trees. The first place to check for more information is the University of Illinois web site housing the oak wilt report on plant diseases: <http://www.aces.uiuc.edu/~vista/abstracts/a618.html>. There you can read about symptoms and look at some pictures that will help. Another site I would recommend is http://www.na.fs.fed.us/spfo/pubs/ho wtos/ht_oakwilt/toc.htm. This site is developed by the national forest service. It provides some practical information and look alike diseases to consider.

Oak wilt is a vascular disease caused by a fungus that plugs up the vascular system of the tree. The foliage of the infected tree may become scorched or it may turn gray-green or tan. The effect will not go unnoticed, especially if the tree is a landscape tree, but it is important to notice symptoms as soon as possible to help surrounding oaks. The disease progresses quickly, killing mature trees in the red oak group in one

season. The symptoms often start in the top of the tree, so don't neglect looking there for problems. Binoculars work well for large trees. Vascular diseases such as oak wilt are more apparent now that other foliage is deep green. If you see a problem on your oak, look at other tree species in the area. Oak wilt infects only oaks. If other trees are showing similar symptoms, then consider site or environmental stress factors.

Leaf symptoms vary depending on the oak species involved. Generally oaks in the red or black oak group (pointed leaf lobes) develop discolored and wilted leaves at the top of the tree or at the tips of the lateral branches in late spring and early summer. The leaves curl slightly and turn a dull pale green, bronze, or tan, starting at the margins. Usually by late summer, an infected tree has dropped all its leaves. In some years we have seen red oaks progress from scorched foliage to total defoliation in as little as three weeks.

The white and bur oak group (rounded leaf lobes) generally shows symptoms on scattered branches of the crown. The disease is often confused with general dieback and decline. Leaves on infected white oaks become light brown or straw-colored from the leaf tip toward the base. The leaves curl and remain attached to the branches. This tree group may die in one season but is much more likely to survive for many years with dieback and stressed appearance.

Vascular discoloration is probably the most important clue that oak wilt is a strong possibility. The images show vascular discoloration on a branch section with bark peeled away and the ring of discoloration visible in a stem

cross section. Sometimes an entire ring may not be visible, but you will see sections of a ring, maybe even brown blotches in a ring pattern. Discoloration in the center of the stem is not associated with oak wilt.

If you are going to sample a tree for oak wilt testing, do so before any chemicals are applied. Find live, symptomatic branches with vascular discoloration. Samples should be 8 to 10 inches long and about thumb thickness. It takes 7 – 10 days for the fungus to develop in the lab to the point where a positive confirmation can be made from cultures. The processing time cannot be shortened. Oak samples submitted for oak wilt testing should be sent on disposable ice packs (the blue packs, not bags of ice) to prevent killing the fungus (in mail trucks) with high temperatures before it can be isolated in the lab.

If you have oak wilt in your area, do not prune oaks now. Pruning when trees are actively growing results in sap flow, attracting the beetles that may carry the fungal pathogen to your tree. Both the beetles and the fungus are now active. If oak wilt is present in your area, try to leave pruning of oaks until at least after mid-summer. The dormant season would be an even better time for this task. --*Nancy Pataky*

Invasive Species Spotlight--Gypsy Moth

The purple traps (<http://hyg.ipm.illinois.edu/article.php?id=38>) seen hanging in trees have been a topic of conversation lately, but I've also received a few calls about these small traps on trees and posts as well.

Gypsy moths are among some of the most destructive forest pests in the United States....did you know they were brought here intentionally? They were originally intended to be used to increase disease resistance in hybridized silk spinning caterpillars, but the gypsy moth escaped the industry and became established in natural areas. From there it has slowly spread throughout the northeastern states south to Virginia and west to the Great Lakes Region; it is beginning to establish itself in Illinois. (<http://pest.ceris.purdue.edu/searchmap.php?selectName=ITAXAIA>).

Mature females lay egg masses in mid to late summer. Larvae emerges from the mass in the following spring (hatching generally occurs when most hardwood trees are starting to bud). Each larva can be from one to two inches long with hairs running down its entire body. They are grayish in color with five pairs of blue spots and six pairs of red spots on their body with yellow markings on their heads. They transform into the pupa stage in mid summer and emerge as adults usually beginning in July. Male moths are light tan to dark brown with wavy bands and have a wingspan of about an inch. Females are almost all white with faint darker wavy bands on the forewings and have a wingspan up to two inches. Female gypsy moths do not fly and will typically lay their eggs near areas where they were feeding (including picnic tables, firewood, grills, and even cars). When these items are moved, these "hitchhikers" move with them!

Gypsy moth larvae are known as severe tree defoliators and can be a

tremendous problem for forest land owners and managers. Oaks (*Quercus spp.*) are their preferred meal but they will feed on over 500 shrubs and trees. When large populations build up, 1000 egg masses per hectare, the damage can become quite extensive. This could lead to entire forests being stripped of their foliage. Healthy trees can usually withstand the loss of one flush of leaves, but if it happens continuously throughout the year in consecutive years it will mean almost certain failure; especially when coupled with other insect, disease, and environmental conditions.

The gypsy moth trapping program in Illinois is a cooperative effort between the Illinois Department of Agriculture and USDA-APHIS-PPQ. The goal of this survey is to determine the spread and dispersal of the gypsy moth in Illinois. Illinois is considered a transition state and is part of the Slow the Spread (STS) program (<http://www.gmsts.org/operations/>).

STS is one of the largest monitoring and action programs in the nation targeting the Gypsy moth. Illinois Department of Agriculture has placed ~ 6,500 traps in the STS area (northeastern Illinois). USDA-APHIS-PPQ heads the Detection Trapping and has placed ~6,500 traps in 84 central and southern Illinois counties. This program monitors populations by using pheromone traps to detect the spread of the insects to notify interested parties and to establish action plans. Scientists have begun to capitalize on natural enemies of the Gypsy Moth as a way to help keep their populations under control. Several of these natural enemies include bacteria such as *Bacillus thuringiensis* (Bt), viruses such as Gypchek, and predatory insects such as parasitic wasps.

For more information, stop by the Illinois CAPS blog (<http://www.illinoiscapsprogram.blogspot.com>) for all the latest news on invasive pests in Illinois.--*Kelly Estes*