



INSECTS

Japanese Beetle

Japanese beetle adults typically emerge during the third week of June in southern Illinois, the end of June in central Illinois, and the first week of July in northern Illinois. They are common in a two-county band along the eastern border and in a large area around Collinsville. Every major city in the state has them, but they may be scarce or unknown in rural areas in the western three-quarters of the state.

Adults are rotund, hard-shelled beetles, metallic green, with coppery to brown wing covers. They have tufts of white hair along the bottom edge of the wing covers. They vary from about 3/8 to 1/2 inch long.

The adult beetles eat small holes through leaves, damaging ornamentals. They may eat through the upper epidermis and mesophyll, leaving the lower epidermis intact; the lower leaf surface appears white at first but soon dries and turns brown. Feeding typically starts from the top of a leaf and proceeds downward. Sun-loving, these beetles sit atop a leaf and feed during the day, with damage being most severe on the upper foliage of trees and shrubs. They prefer crabapple, linden, willow, rose, grape, and birch but feed on many other species of broad-leaved trees and shrubs.

Adults are present in large numbers through July and into mid-August. A few can sometimes be found into October, but their numbers are usually not high enough to cause damage after mid-August. During July, frequent matings are observed, including a phenomenon known as "balling." Males exit the soil and may swarm emerging females. So many males can be trying to mate with a female that they form a clump about the size of a golf ball.

Mated females tunnel into the soil to lay eggs, which hatch into white grubs that feed on turfgrass roots in late July to early August. The C-shaped white grub has six legs and a brown head. It feeds throughout the rest of the summer, causing turf to die back. In the fall, it tunnels deeper into the soil for the winter. It comes back up into the root zone to feed in the spring, pupates in the soil, and emerges as an adult.

Adults tend to feed where others have fed; so control when they first emerge is more effective than later efforts. Even handpicking can be successful if started when the beetles first appear. Beetles that are disturbed either fly or fold their legs and drop from the plant. Holding a jar of soapy water or rubbing alcohol under attacked leaves and poking at the beetles cause most of them to drop into the killing jar.

Sprays of carbaryl (Sevin) or cyfluthrin (Tempo) are effective in killing attacking beetles for 2 to 3 weeks. Because season-long control involves two or three treatments, spray only landscape plants where the damage would be obvious. For example, treat shrubs near the front entrance of a building but avoid spraying trees behind it. This strategy reduces the insecticide used and the client's cost. (Be sure to consult with the client before allowing some landscape plants to be damaged.) Controlling these beetles has little effect on the health of the plant or the number of beetles next year.

Japanese beetle traps are available with lures that attract beetles from long distances. The lures bring beetles into the trap's area, but many do not go into the trap. Research has shown these traps increase damage to the landscape with high beetle populations. If you are in an area with relatively few beetles, placing traps at least 50 feet away from treasured plants may provide some protection.

Because the adult beetles fly several miles each summer, treating nondamaging larval populations in the turf does not reduce the damage. Treat turf only if the number of grubs is high enough to cause damage or attracts raccoons, skunks, and birds. (*Phil Nixon*)

Moths, Moths, Moths . . . and Still More

We continue to receive calls on the large number of adult moths in much of Illinois. They congregate on plants in bloom, including linden and spiraea. The moths appear to be adults of armyworm and/or black cutworm.

Armyworm adult moths are 1 inch long, with tan to gray-brown wings. Each front wing has a single white dot near the center. Black cutworm adult moths are 1 inch long, with a 2-inch wingspan. The front wings are mottled, with medium to dark-brown coloration. The hind wings are light-colored.

These insects most likely migrated from the South, from where (due to our unusual warm weather in early spring) they were carried northward on wind currents originating in the Gulf of Mexico.

The adults may be a nuisance and find their way into homes; however, they do not harm people or plants. The adult female moths will eventually lay eggs, which will hatch in caterpillars that, depending on their numbers, may damage turf or landscape plants. Be on the lookout for the caterpillars in 1 to 2 weeks, depending on the temperature. It is important to understand that high moth numbers do not directly translate into high caterpillar numbers. As a result, avoid making any preventive insecticide applications. (*Raymond Cloyd*)

Ticks

People who work outdoors need to be aware of ticks and how to identify them. Three species commonly attack people in Illinois: the blacklegged tick, lone star tick, and American dog tick.

The American dog tick, also called the wood tick, is found throughout Illinois. Only the 3/16-inch, reddish brown, teardrop-shaped adults attack people, dogs, and cats. As with other ticks, they are flattened dorsally, which keeps them from being brushed off the host's body. Females have a silvery white shield behind the mouthparts; males have indistinct, wavy, silvery lines running the length of the back. This tick transmits Rocky Mountain spotted fever—a disease uncommon in Illinois.

The lone star tick also occurs throughout the state but is more common in the southern third. Adults are round, brown, and about 1/8 inch in diameter. In the middle of the back, the female has a large white spot, from which the species gets its name. Not only adults but also nymphs bite humans. Nymphs are pinhead-sized, brown, and round. The lone star tick can transmit human ehrlichiosis.

The blacklegged tick occurs in two populations, both in Illinois and the United States generally. Ticks in the northern states, and the northern half of Illinois, are the deer tick form. It feeds on mice as a larva and carries Lyme disease. In the southern states, and southern Illinois, the blacklegged tick larvae are thought to feed on lizards and birds; ticks in this population have not been found to carry Lyme disease. Adult blacklegged ticks are reddish, teardrop-shaped, and about 1/8 inch long. Nymphs are brownish and pinhead-sized. Both adults and nymphs attack people. Nymphs are numerous and active during June. (*Phil Nixon*)

PLANT DISEASES

Red Maple Problems

Many red maples have recently shown stress symptoms throughout Illinois. Callers report red leaves near the top of the tree, smaller than normal leaves, some branch decline, and overall poor appearance.

It is likely that various problems are to blame. One possibility, *Verticillium* wilt, has been confirmed on a red maple this season at the Plant Clinic. That fungal pathogen can infect any of the maples and causes decline, dieback, wilting, and branch death. *Verticillium* wilt was discussed in issue no. 8. Vascular streaking of the branches is an excellent diagnostic tool for identifying this disease. Laboratory cultures can verify the fungus.

Most samples we saw were not infected with *Verticillium*. They had small leaves with a red cast. Stem growth was only 1 inch annually for the last 3 years—a clear indication of stress. Michael Dirr in *Manual of Woody Landscape Plants* says that red maple is very tolerant of soils but prefers slightly acidic, moist soils. He adds that chlorosis shows on foliage of trees in high-pH soils. The actual limiting element may be iron or manganese, but the cause is the high-pH soil that ties up these elements.

Another problem some may be seeing is potato leafhopper feeding injury. In issue no. 4, Raymond Cloyd discussed this insect: "Feeding, especially on maples, results in stunted tree shoots and leaves that curl downward, with brown edges." There are three to five generations of this insect per year, so damage may still be occurring.

If your red maple is showing stress, look for potato leafhoppers on the newest leaves. Look for vascular streaking of the wood, and send to a lab to confirm *Verticillium* wilt. Have a soil pH test run to determine if your site is appropriate and if you need to supplement nutrients; refer to *Report on Plant Disease (RPD)* no. 603, "Iron Chlorosis of Woody Plants." Sometimes, spraying an iron or manganese chelate (available at garden centers) on the foliage quickly shows which element is limiting. Try to provide additional water to this species during drought stress. The tree does best on moist sites. Consider a general tree fertilizer in the fall. By then, you will know if the fertilizer should be acidic, based on your soil test.

Another problem we occasionally saw was a rapid decline of an entire red maple tree. In many cases, this was caused by a graft incompatibility. Red maples available in the trade now are usually produced on their own roots, eliminating the possibility of graft incompatibility. (*Nancy Pataky*)

“Hosta” la Vista?

Hasta la vista literally means “until later.” This play on words was suggested by a Plant Clinic visitor who escaped before we could get his name. Hostas generally grow wonderfully in Illinois if you provide shade and water. Until a few years ago, it was rare to see a hosta at the clinic. I assumed the species did not have many problems in Illinois. I still put this plant high on my list of plants with few problems; but problems do occur, and the major ones are discussed here.

Anthraxnose is a fungal leaf disease of hosta that has been prevalent for years. The pathogen is a *Colletotrichum* species that thrives in warm, wet weather. Symptoms include large, irregular spots with darker borders. The centers of spots often fall out, and leaves become tattered and torn. I have not seen this disease kill plants, but it contributes to their aesthetic decline. Little information is available about disease management, but a fungicide effective against leaf spots and having a general ornamental label should protect new growth. Fungicides would be recommended on sites where this has been a problem. The thiophanate methyl fungicides would probably be a good starting point. Refer to the *Commercial Landscape and Turfgrass Pest Management Handbook* or the *Home, Yard, and Garden Pest Guide* for chemicals. Always read the label to be certain a treatment is registered for your crop and there are no toxicity warnings.

Sclerotium blight is a serious disease of isolated hostas. Initially, lower leaves wilt and brown. Shortly, the upper leaves wilt; and close inspection shows a soft, brown rot of the base of petioles. The fungus, *Sclerotium rolfsii*, appears as a fluffy, white mass of mycelium on the petioles and surrounding soil. Tiny tan, mustard seed-sized sclerotia (fungal structures) can be seen in this mycelium and on the soil.

This disease historically has been a problem in the South but not here. It has invaded our state, probably on transplants and with the open exchange and popularity of hostas. It was thought that the fungus would not overwinter in our climate, but that is false. The fungus overwinters when protected under mulch and snow in mild winters.

Current research at Iowa State University is investigating possible resistance. Susceptibility varies, but nothing with high levels of resistance has been found.

Carefully inspect hostas planted into your gardens. Do not plant any with disease symptoms. This applies to other perennials as well because this organism can also infect ajuga, anemone, daylily, impatiens, peony, vinca, and others. Because the fungus can overwinter under mulch on the plant stems, pull the mulch back from the crown a few inches and leave a mulch-free area near the crown.

Once the fungus invades your planting bed, do not move the soil or plants to other beds. You can plant nonhost species in this area, but wash tools of soil before working other beds. Fungicides may be used to suppress *Sclerotium rolfsii*, but they do not eradicate it. PCNB sold as Terraclor, Defend, Pennstar, Revere, and PCNB is labeled for ornamentals and is available to commercial growers. It may cause some phytotoxicity, so treat only small areas to check your plants' reaction. A newer fungicide, flutolanil (Contrast), is another option. PCNB is not available to home growers. Prevention is still our best recommendation.

Foliar nematodes on hosta are also relatively new to our area. We do not see a big problem here yet, but the possibility is real. Nematodes are microscopic roundworms that cause disease. They are pathogens much like a fungus or bacterium; but they require moisture to infect, and they live within the plant. The foliar nematodes are in the genus *Aphelenchoides*.

On hosta, the nematode feeds in the leaf, producing brown areas between veins. It is thought to overwinter in the crown. You cannot see the nematode with the naked eye, so watch for brown areas between veins, giving a striped appearance. Foliar nematodes may occur on other perennials, including anemone, creeping phlox, ground ivy, windflower, and heuchera.

Disease management is not easy. Inspect new plants for symptoms, avoid close plantings, avoid excessively wet foliage, and discard contaminated stock. It is questionable whether this nematode can survive the cold winters of Illinois, but it is possible that overwintering may occur in mild winters with protected, mulched locations. (*Nancy Pataky*)

Pine Wilt

We've begun to see some pine mortalities from the pinewood nematode, the cause of a vascular disease called pine wilt. The name appropriately describes the sudden gray-green, wilted appearance of limbs or entire mature pine trees. There is no recovery, and trees quickly turn brown in heat. Watering does not help because the plant cannot absorb the water.

In Illinois, we see pine wilt on all pine species except white pine. The disease affects entire branches or trees, not just branch tips. Of course, there is always an exception, and in this case it is Austrian pine. We have documented cases of pinewood nematodes in Austrian pine that initially showed symptoms on branch tips only. This symptom can be confused with Sphaeropsis blight. If you are uncertain of the differences, consult issue no. 1 of this newsletter.

Pinewood nematodes are vectored (spread) by Sawyer beetles and a few related longhorned beetles. Readers may know nematodes as soil- or root-related

pathogens, but this nematode lives in the tree's wood, blocking the water-conducting tissues—resulting in a wilt symptom. The nematodes are not visible to the naked eye, but symptoms are quite apparent.

Samples to be tested for pine wilt should be sent to the clinic or another lab with a nematologist. Our fee is \$18.75. Branch samples should be 1 to 2 inches in diameter and long enough to put into a vise so that wood discs can be cut from both ends. The pinewood nematode is not uniformly distributed within a tree. We find that the most reliable samples are from branches with brown needles still attached. When sampling Austrian pine, include the terminal 12 inches of a stem with brown needles attached.

There are no known effective chemical controls for pine wilt or its vector. Affected trees should be burned or buried to reduce reservoirs of infection. (Recent research shows that it is probably safe to chip the trees for mulch. Still, you might want to compost the mulch before use or dry it before placing it near pines.) Prune dead branches from live trees to minimize attractiveness to beetles. Beetles emerging from the dead wood may carry the nematode and fly to healthy pines miles away. When a beetle feeds on a healthy pine, it may transmit the nematode. The nematode enters the resin canal and eventually clogs the water transport system of the tree.

All pines in Illinois, except white pine, are susceptible to pine wilt. Because white pines have problems of their own, that species is not encouraged as a

replacement unless the site has been carefully selected to avoid stress (see issue no. 4). Replace dead pines with Norway or blue spruce, Douglas fir, cedar, hemlock, or other nonhost species. Consider the site, soil, and space when selecting a replacement. Consult *Report on Plant Disease (RPD)* no. 1104, "Pine Wilt Disease," for details. *RPDs* are available in Extension offices and on the Web at <http://www.ag.uiuc.edu/~vista/horticul.htm>. (Nancy Pataky)

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, 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. Web subscriptions are available (<http://www.ag.uiuc.edu/cespubs/hyg>).

Copyright © 2001, Board of Trustees, University of Illinois