COOPERATIVE EXTENSION SERVICE
HOME, YARD & GARDEN PEST NEWSLETTER
College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana - Champaign
Illinois Natural History Survey, Champaign

No. 6 • June 3, 1998

PLANT DISEASE

English Ivy Leaf Spots

This popular ground cover has two major disease problems—one caused by various fungi and the other by a bacterium. Accurate identification is important because control measures differ for the two diseases. In Illinois bacterial leaf spot is more common than fungal leaf spot.

Bacterial leaf spot and stem canker appears as small, circular, dark green, watersoaked (almost oily looking) lesions on the leaves. As these enlarge, they develop reddish brown to black centers with a water-soaked margin and often a yellow halo. Hold the leaf up to the light to see the halo. The spots crack with age. In warm, wet weather the bacterium causes black cankers on the stems and petioles; stems die, often with black tips. The fungal leaf spot diseases do not cause stem cankers.

Fungal leaf spots are caused by a variety of fungal species that cause round to irregular spots in a variety of colors. Often a series of concentric rings can be seen in the spots, giving them a target effect. Look closely at the spots for small black specks that do not rub off; these are the fruiting structures of the fungi. Bacteria do not form such fruiting bodies.

When establishing a new bed of ivy, inspect plants to be certain you are not introducing these diseases. Remove any questionable leaves or stems and remove old leaves and debris from the beds. Because these diseases require water on the foliage for infection to occur, water the soil rather than the foliage—though that may be hard to do in a wet year such as this. Water early in the day to promote quicker drying.

If leaf spots have been severe in the past, determine whether the fungal or bacterial pathogens are to blame. Few chemicals protect plants from the bacterial leaf spot and stem canker. Try to improve air movement in the area by thinning the stand and pruning surrounding plants. Never work with the plants when they are wet.

For fungal infections, consider a chemical application program as soon as possible. Registered chemicals are listed on page 126 of the *Illinois Commercial Landscape and Turfgrass Pest Management Handbook, 1998–1999* or page 18 of the *Homeowners' Guide to Pest Management*. New growth can be protected from infection using fungicides at seven- to ten-day intervals as long as wet weather persists in the spring and early summer.

For more information about these diseases, consult *Report on Plant Diseases* No. 652. *(Nancy Pataky)*

Hackberry Leaf Drop

In the past few weeks the Plant Clinic has received several calls about hackberry trees dropping their leaves. Other trees in the area, including maple and oak, have been unaffected. Recently we received two different samples from affected trees. Leaves are spotted with areas where the epidermis appears sunken. Some of the leaf margins are necrotic in a patchy pattern, not a uniform edge burn. New growth is healthy.

Many fungal leaf spots can infect hackberry in wet spring weather, but our lab work found no pathogens associated with the spotting and edge burn on these leaves. Fungal leaf spot was ruled out. Also, damage was not consistent with any insect-feeding injury.

There was some speculation that the cause might be chemical sensitivity on the part of hackberry—a sensitivity not shared by maples or oaks. Conversations with horticulture nursery specialist Dr. David Williams and weed science specialist Dr. Marshal McGlamery lead us to strongly question this theory. We have no proof that chemicals are to blame.

It is very likely that this earlier leaf drop was caused by a cold-weather snap, probably when buds were first opening. Other trees may have been further along with less tender leaves when the cold temperatures occurred. That the injury happened suddenly and over a wide area are further clues to environmental injury. This is not a definite diagnosis, but it appears to best explain the injury we have seen. The good

news is that hackberries are recovering with healthy new growth. *(Nancy Pataky)*

Dothistroma Needle Blight and Brown Spot of Pine

Dothistroma needle blight has been diagnosed several times in the past week at the Plant Clinic. This fungal disease of pine occurs most often on Austrian and Ponderosa pine. Both Scotch and red pine are resistant. The disease causes spots and bands on needles, especially in the lower part of the tree. The problem is more intense in a monoculture, such as a nursery or plantation, than in a landscaped area, but we have seen a fair amount of this needle blight the past year or two in landscaped areas.

Symptoms of Dothistroma first occur in the fall but may go unnoticed. Look closely at the needles for yellow to brown bands or individual spots. Laboratory confirmation relies on finding the diagnostic fruiting bodies and spores within the spots. The fruiting bodies are black, pinhead-sized specks in the needle lesions. As the disease progresses, needle tips turn brown and fall from the affected needles, leaving green needle bases. Early drop of entire needles is not uncommon, with the period of greatest needle loss from Dothistroma in spring and summer.

Cultural controls to promote more rapid drying of foliage may help. Prune surrounding plants, control weeds in the area, and space plants properly. The copper fungicides, including fixed or neutral copper compounds and bordeaux mixtures, are registered for use on pine to control Dothistroma needle blight. Two sprays are required—one when needles are just emerging in mid-May and another when new needles are fully expanded. In the home landscape, some control may be attained by removing fallen needles and helping tree vitality through fertilization and watering practices.

Brown spot needle blight is nearly identical to Dothistroma blight. A different fungus is the pathogen and Scotch pine is the major host, but otherwise spores must be compared to distinguish these two diseases. There are more chemical options for preventing brown spot than for Dothistroma. These treatment options are listed in the pest management handbooks mentioned earlier. Applications should be made when needles are half grown and again 30 days later.

For both of these fungal needle blights, control measures are most successful when cultural controls are begun as soon as the disease is identified, with chemical controls started the following spring. For more information on pine needle blights, consult *Report on Plant Diseases* No. 624. *(Nancy Pataky)*

Hollyhock Rust

Just when you think you can identify any rust disease, a slightly different version pops up. Hollyhock rust has actually been with us for many years. It is caused by the fungus *Puccinia malvacearum* and is most severe in the spring and fall. Severely rusted leaves turn yellow, wither, and drop early. Plants may become ragged in appearance, but rarely do they die from a rust infection. Rust first appears—primarily on the undersides of the lower leaves—as lemon-yellow to orange waxlike pustules that turn reddish to chocolate brown with age. At first these waxy pustules resemble pycnidia or other flask-like fruiting bodies rather than rust pustules and can be confusing to diagnose. As larger spots of bright yellow to orange with reddish centers develop on the leaf surface opposite the pustules, symptoms become more typical of rust. The rust quickly spreads to other leaves, stems, and flower bracts. In humid weather, rust continues to spread from leaf to leaf until the entire hollyhock plant becomes infected and loses its leaves one by one.

This rust is also unusual in that it is microcyclic, producing only two types of spores (teliospores and basidiospores). The tree rusts (such as cedar-apple rust and cedar-quince rust) need two hosts to survive. Hollyhock rust does not need an alternate host.

The first rusted leaves should be picked off and destroyed. As soon as flowering is over, all rust-infected hollyhock leaves and stalks should be collected, then destroyed by burning, burying in a compost pile, or hauling away with the trash. Because rust may survive the winter on some weeds, they also should be removed.

In cases where disease control cannot be maintained with sanitation, preventive fungicides may be used, starting when new growth begins in the spring. All above-ground parts of the plants should be treated, and five or six applications are necessary at seven- to ten-day intervals. Registered chemicals include those listed on page 17 of the *Illinois Homeowners' Guide to Pest Management* and page 125 of the *Illinois Commercial Landscape and Turfgrass Pest Management Handbook, 1998–1999*. Be sure to read labels carefully and always follow directions given. *(Nancy Pataky)*

HORTICULTURE

Garlic Mustard

Garlic mustard (*Alliaria petiolata*) is a major weed in many areas of Illinois. Information from the Illinois Department of Conservation shows garlic mustard scattered throughout the northern three-fifths of Illinois, mainly along stream corridors. This rapidly spreading forest weed is displacing native woodland wildflowers. Garlic mustard is not a weed to take lightly; if you have it, control is imperative. Large expanses of this weed have choked out native plants at Allerton and Lodge parks in central Illinois; there are also large patches in The Morton Arboretum in northern Illinois.

In Illinois, garlic mustard behaves mostly as a biennial. After germinating in the spring, the plant spends its first summer and winter as a rosette of heart-shaped leaves (two to eight inches long) with course, round, irregular teeth on the margins. The following spring, the plant sends up a one- to two-foot flowering stalk of small, four-petaled, white flower clusters.

The plant spreads exclusively by seed, dispersed on the fur of larger animals such as deer, by flowing water, and by human activities. Some plants produce as many as 8,000 seeds! Therefore, the goal of any garlic mustard control program is to prevent seed production until the seed bank is exhausted—usually a two- to five-year period. Cutting and hand-pulling may be feasible with smaller outbreaks; controlled burns and herbicides may be needed for more established patches. Roundup (glyphosate) works best in the spring and fall when the plants are actively growing. *(Rhonda Ferree; adapted from* Illinois Garlic Mustard ALERT, *IDOC)*

Waterlogged Plants

Most of Illinois has experienced excessive rains, resulting in waterlogged soils and flooding. It is important to understand what happens to plants growing in these conditions and what to expect later. It is a wait-and-see situation. Many herbaceous plants are showing injury symptoms now. Visible injury symptoms on trees and shrubs may not occur for a year or more.

Injury Symptoms. Injury symptoms, which vary according to several factors, include decreased growth of shoots and roots, decreased transpiration rate, leaf chlorosis (yellowing), leaf epinasty (twisting), leaf abscission (drop), root death, increased susceptibility to attack by predators and pathogens, absence of fruiting, and death.

The main reason for injury relates to oxygen depletion in flooded or waterlogged soils. As oxygen slowly diffuses and reduces in concentration to a few percent or zero, aerobic root respiration, root growth, transpiration, and translocation all decrease or stop.

Factors Influencing Survival. Although survival is directly related to a species' tolerance of waterlogged soils, other important factors include soil type; time, duration, and depth of flooding; the state of the floodwater; and the age and size of woody plants.

Tolerant species such as bald cypress, littleleaf, linden, redtwig dogwood, mulberry, silver maple, and willow can live on saturated sites for indefinite periods during the growing season.

Moderately tolerant species such as green ash, hawthorn, honeylocust, pin oak, red maple, river birch, sweetgum, and sycamore can stand saturated soil for a few weeks to several months during the growing season but die if waterlogging persists or reoccurs for several consecutive years.

Weakly tolerant species such as American holly, balsam fir, black walnut, bur oak, catalpa, hackberry, Douglas-fir, eastern cottonwood, and red oak can stand relatively short periods of soil saturation (a few days to a few weeks) during the growing season but die if waterlogging persists for longer periods.

Intolerant species such as American beech, black locust, crabapple, eastern hemlock, flowering dogwood, paper birch, pine, redbud, spruce, sugar maple, tuliptree, white oak, and yew die if subjected to short periods of one or two weeks of soil saturation during the growing season.

What To Do Now. Unfortunately, little can be done to prevent damage to plants growing in waterlogged soils. If a woody plant shows injury symptoms, such as leaf drop, do not immediately replace it. Some plants will show initial injury symptoms and then recover. Many woody and herbaceous plants, including turf areas, will not recover. Be patient. Whether your plants are simply waterlogged or actually growing in flood areas, it will take a while to see the full extent of plant damage. *(Rhonda Ferree)*

INSECTS

Scouting Report

Honeylocust pod gall is present in northeastern Illinois. This gall is caused by a midge, a small fly. Affected leaflets round up into podlike structures that are 1/8 to 1/4 inch long. Once galls have formed, control efforts are not effective. This insect is unusual enough in Illinois that preventative treatments are not usually practical.

Four-lined plant bugs are present throughout Illinois on flowers and herbs, particularly mint and oregano. These insects are about 1/4 inch long and yellow with four black stripes. Damage appears as blackish spots and streaks on the foliage.

Black vine weevil damage is occurring throughout the state. Adult beetles eat crescent-shaped notches in the margins of leaves of euonymous, yew, rhododendron, and a wide range of other plants. Larvae live on root systems of yew, strawberry, and other plants. Control involves eliminating adults during the two to three weeks of feeding after emergence before they can lay eggs. With acephate (Orthene), bendiocarb (Dycarb, Turcam), or cyfluthrin (Tempo), spray foliage heavily and allow runoff onto the soil. Larval control is possible from July to mid-October with the insect-attacking nematode, Heterorhabditis bacteriophora used as a soil drench. Containerized stock can be soil-drenched for larval control with carbofuran (Furadan). *(Phil Nixon; Jim Schuster, Countryside Extension Center; and staff at The Morton Arboretum)*

Cottony Maple Scale

Cottony maple scale is being found in DuPage, Livingston, and Grundy counties, on silver maple, sugar maple, honeylocust, green ash, and hawthorn. In some cases, the scales are quite numerous.

Egg sacks appear as white cottony masses emerging from beneath the brownish scale covers of females. The scale itself is about 1/4 inch, and the egg sack is about 1/2 inch in size. Egg sacks look like popcorn on the underside of small branches on the scale's primary host (silver maple), other maples, alder, apple, beech, black locust, box elder, dogwood, elm, euonymus, honeylocust, linden, mulberry, oak, osage orange, peach, pear, plum, poplar, rose, sumac, and sycamore. Infested trees are rarely killed, but heavy infestations may cause dieback of individual branches and a general decline in plant vigor.

Cottony maple scale overwinters as immature females (nymphs) on twigs and branches. Female scales mature when plant growth resumes in the spring. In late spring and early summer, females produce conspicuous cottony egg masses that may contain more than 500 eggs. Eggs hatch into the crawler stage of the scale in late June and early July in central and northern Illinois. Crawlers are extremely small and appear as yellow-orange moving dots.

Crawlers, as their name implies, crawl to the underside of leaves, where they settle and feed on the sap. Male scales mature in late August and early September, when they mate with immature females and die. In late September, just before leaf drop, fertilized female nymphs migrate from the leaves to twigs and branches, where they overwinter. Only one generation of cottony maple scale occurs each year.

One symptom of heavy infestations of cottony maple scale is honeydew. After crawlers begin feeding on leaf sap they can create enormous amounts of honeydew. In heavy infestations, leaves may be stuck together, and the ground beneath the trees may be extremely sticky. Infestations of this magnitude can occur on silver maple but are less likely to occur on other hosts. Sooty mold is commonly found growing on the honeydew in mid- to late summer.

Cottony maple scale is a food source for many predaceous insects and parasites. The twice-stabbed ladybeetle, which feeds on soft-bodied insects, is commonly found dining on cottony maple scale crawlers. Cottony maple scale outbreaks often subside in two to three years, due to control by natural enemies. Unfortunately, the predators and parasites are susceptible to many insecticides used in the landscape and are often eliminated before they can adequately control the scale.

Before treating for crawlers, look for twice-stabbed lady beetles. At this time of year, beetles are usually in the larval stage. The full-grown larva is about 1/4 inch long, whitish to grayish, and covered with waxy filaments. It looks very similar to the egg mass of the cottony maple scale. A lady beetle larva will move, albeit slowly, when poked or prodded; a scale egg mass will not. Adult twice-stabbed lady beetles are about 1/8 inch long, roundish, and black, with two red spots on the back. Adults were present in mid-May; I photographed one in my backyard in central Illinois at that time.

Adults are usually present in July when the crawlers are present. It's common for both larvae and adults to be present at the same time. If larvae and/or adults

of this lady beetle are present in reasonable numbers, it's best to avoid spraying for cottony maple scale crawlers. In severe infestations of cottony maple scale, chemical control may be desirable. Dormant-oil treatments control overwintering female nymphs on most hosts (except sugar and Japanese maple) after leaf drop in the fall and before budbreak in the spring. One spray during that period should be sufficient. Spray when the temperature will stay above freezing for 24 hours after the spray. During the dormant season, twice-stabbed lady beetles overwinter as adults under loose bark where they are not affected by the spray.

Other treatments should aim to control crawlers on foliage in July, when they first become active. Repeat treatments may be needed after ten days. Foliar applications of acephate (Orthene), malathion, or summer horticultural oils to the underside of the leaves should provide effective control of cottony maple scale. **Do not use acephate on red or sugar maple**. *(Phil Nixon; Jim Schuster, Countryside Extension Center; Mary Pfeiffer, Grundy County Extension Unit; Mary Shier, Livingston County Extension Unit)*

Bagworms

Bagworm eggs are hatching in southern and central Illinois. These caterpillars overwintered as eggs within old female bags left on the plant. One bag may contain 500 to 1,000 eggs. Bagworms feed on many plants but are common on arborvitae, juniper, cedar, pine, spruce, and a number of deciduous trees.

As the caterpillar feeds, it constructs a bag (made of silk and plant material) that it remains inside as it feeds. This bag increases in size as the caterpillar grows and is 1 to 1-1/2 inches long when the caterpillar is mature. The bag, which is usually brown due to dried foliage on the outside, protects the worm from natural enemies (and from pesticides, to an extent). The worm feeds for several weeks, then pupates. Male moths are winged and emerge in the fall to search for the wingless females, which remain in their bags.

Early management of bagworms is essential for effective control. Look for small bags to determine when to treat. Hatch occurs over several days: the young bagworms crawl to the tops of trees, suspend on silk threads, and are blown to new hosts. Once the bags dwindle to 1/4 inch long, all the eggs should have hatched and caterpillar migration should be over. Spraying with insecticide before this time may require a retreatment to control late-hatching larvae and larvae that blow onto the trees from elsewhere.

Because young larvae migrate to the tops of trees and shrubs, look in these areas for early infestations. Branches of conifers that are stripped of foliage will usually die; deciduous plants will refoliate. Young bagworms can be controlled effectively with *Bacillus thuringiensis kurstaki* (Dipel or Thuricide), cyfluthrin (Tempo), spinosad (Conserve), and trichlorfon (Dylox). Old bags that can be readily reached (in other words, in shrubs and low tree branches) should be removed and burned before the eggs hatch. *(Phil Nixon)*

Lilac/Ash Borer

Landscapers and nursery personnel should watch for the lilac borer (*Podosesia syringae*), also called the ash borer. Traps at The Morton Arboretum caught many males in late May. The lilac borer is a clearwing moth that resembles a wasp. Borers overwinter as late instar larvae and emerge as adults from pupal cases in spring to mate and lay eggs. Eggs hatch in late May or early June, depending on their location in Illinois and the earliness of the spring. Larvae burrow into plants and feed on phloem tissue. Unlike beetle borers (such as bronze birch borer), clearwing moth larvae leave an entrance hole to the outside where sap and sawdust collect.

Like most boring insects, lilac borers take advantage of plants that are environmentally stressed. Newly transplanted materials are extremely susceptible to this moth. Lilac borers injure lilac, ash, privet, and other members of the olive family. In addition to cultural methods such as watering and mulching to increase plant vitality, well-timed insecticidal treatments can control lilac borer.

Pheromone traps contain an analogue of the sex pheromone produced by the female moth and catch males searching for unmated females. Traps do not cure the problem—because some males avoid traps and succeed in inseminating females—but are useful for an accurate estimate of infestation levels and optimal time for treatment. Current recommendations are to treat branches and trunks with chlorpyrifos (Dursban) one week after peak trap catch. *(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.

Major authors are Phil Nixon, (217) 333-6650, and Fredric Miller, (708) 352-0109, entomologists; Nancy Pataky, plant pathologist, (217) 333-0519; and Rhonda Ferree, Tom Voigt, and David Williams, horticulturists, (217) 333-0350. 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 Kathy Robinson, typeset by Oneda VanDyke, and proofread by Peggy Currid, all of Information Technology and Communication Services.*

Return Services Requested

CES Newsletter Service
University of Illinois
at Urbana-Champaign
69 Mumford Hall
1301 West Gregory Drive
Urbana IL 61801

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

State • County • Local Groups–U.S.D.A. Cooperating
The Cooperative Extension Service provides equal
opportunities in programs and employment.

Presorted First Class
U.S. Postage Paid
Permit #75
Champaign, IL