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## INSECTS

### White Grub

Annual white grub and Japanese beetle adults are numerous in many areas of the state, and turf areas continue to go dormant with the hot, dry weather. The high numbers of beetles combined with the dormant turf result in large numbers of eggs being laid in irrigated turf. Annual white grub adults do not feed so they are only present for about two weeks. They should be disappearing soon. Japanese beetles also tend to decrease in numbers at about this time in July, but enough remain to continue causing feeding damage to ornamental plants.

Application of imidicloprid (Merit, Grubex) or halofenozide (Mach 2, Ortho Bug-Be-Gone) to irrigated turf at this time should be effective in preventing grub damage in August. Turf areas that are not irrigated or only occasionally irrigated should be scouted in early August to determine if applying a shorter-lived insecticide is necessary. Many of these areas may not have enough eggs laid in them to justify control. (Phil Nixon)

### Green-striped Mapleworm

Green-striped mapleworms have been found in the Quincy area. They are found sporadically in the western and northwestern parts of Illinois. These caterpillars feed voraciously on red, sugar, and silver maples. They sometimes feed on oaks as well. Green-striped mapleworms are covered with broad, light-green stripes and have bands of black spines on each segment. They also have two long black filaments that stick up like antennae behind the head. They pupate and emerge as rosy maple moths with a 1- to 2-inch wingspan. The moths are yellow with reddish markings on the wings. They spend the winter as pupae, and there are two generations per year in southern states.

Typically, green-striped mapleworms are present in very high numbers, and they completely strip large trees of their leaves. By the time they are noticed, the

caterpillars are too large to be effectively controlled. Small larvae can be controlled with *Bacillus thuringiensis kurstaki* (Dipel, Thuricide) and various other insecticides. However, large larvae are usually only controlled by using heavy compression between boot and pavement. This insect tends to occur in the same small area—usually on the same trees—year after year. Where there has been an infestation, keep your eye out for a possible second generation later in the summer or for their appearance earlier in the summer next year. (Phil Nixon and Mike Roegge)

### Tiny Bagworms

Most of us are familiar with the bagworm, *Thyridopteryx ephemeraeformis*, whose baglike case eventually reaches a length of 1-1/4 to 1-1/2 inches. At this time, they are much smaller and can be effectively controlled as they feed on Eastern red cedar, other junipers, spruce, arborvitae, and various other coniferous and deciduous trees.

A smaller species, *Solenobia walshella*, occurs sporadically in Illinois. It has been somewhat consistent in its appearance in the Rockford area. This species produces a case similar to the bagworm's, but it only reaches a length of about 1/2 inch. It apparently feeds as a caterpillar on the lichens growing on the trunks of balsam fir, white spruce, tamarack, black spruce, red spruce, Eastern hemlock, and Eastern white pine. When fully grown, it tends to migrate to other locations, commonly ending up in large numbers on the sides of houses where they are difficult to remove. Landscapers may get blamed for not controlling the pest, but this species is not really a pest of trees, although it feeds there. (Phil Nixon and Barb Larson)

### Asian Longhorned Beetle

A new infestation of Asian longhorned beetle, *Anoplophora glabripennis*, has been found in the Chicago area. This one is in Kilbourn Park, several miles west of the Ravenswood infestation. So far, only three maple trees seem to be affected. These trees were removed immediately, and surrounding areas are being searched for more infested trees.

This is the time of year that adult beetles are the most numerous, although emergence runs from spring through fall. So far this year, no adult beetles have been found in the Ravenswood quarantined area. Within the quarantined area, more infested trees have been found and removed, bringing the total number of cut trees to almost 900. Although results so far look promising, you should realize that adult beetles were found as late as mid-December last year in Chicago and that the life cycle can last as long as two years.

A related beetle, *Anoplophora malasiaca*, known as the rough-shouldered longhorned beetle, was collected from a maple bonsai tree in southern Wisconsin. This beetle is native to Japan and occurs on sycamore and citrus trees as well as on maples. (*Phil Nixon and Charles Helm*)

### Ivory-marked Beetle

Ivory-marked beetles are being found in various areas of the state, particularly in Will County. This insect is 1/2 to 1 inch long. It is brown with two pairs of whitish oval marks at the front of the wing covers and two additional pairs near the middle of the wing covers. As a longhorned beetle, its antennae are at least half as long as the body.

This native insect feeds on the dry heartwood of many trees including oak, hickory, ash, maple, honey locust, elm, chestnut, and baldcypress. It does not attack living tissue but will heavily attack the heartwood of living trees if there is a frost crack or other wound that allows it access. This insect also attacks dead and dying trees. Its life cycle normally lasts for two years, although beetles have emerged from furniture and flooring after 25 years. Control is usually not recommended. (*Phil Nixon and Nancy Kahida*)

### Dusky Birch Sawfly

Dusky birch sawfly has been reported at The Morton Arboretum in northeastern Illinois. These insects attack not only birch trees, but also alders and willows. They can be present from now into September.

The larvae are caterpillarlike, yellowish insects with dull, dark orange heads and two rows of large black dots running down its back. On each side, there is another row of smaller black dots. Its mature size is about 1 inch long. Although caterpillarlike in appearance, it has at least seven pairs of prolegs rather than the five or fewer that caterpillars have. More important, they are related to the wasps, which makes them immune to *Bacillus thuringiensis kurstaki*.

If their numbers warrant control, use carbaryl (Sevin), diazinon, chlorpyrifos (Dursban), or a synthetic pyrethroid labeled for the host. (*Phil Nixon*)

## PLANT DISEASES

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### Rust of Hollyhock

This disease of hollyhock is not extremely difficult to diagnose. It is a rust and therefore causes pustules with orangish spores, but it forms fruiting bodies on the underside of leaves in pustules that look like little galls at first. Severely rusted leaves turn yellow, wither, and drop early. And, although plants may become ragged in appearance, they rarely die from rust. Usually, we see this disease in spring and fall, but last week we were still receiving calls about this rust at the Plant Clinic.

Rust first appears on the underside of lower leaves as lemon-yellow to orange, waxlike pustules that turn reddish to chocolate brown with age (its present stage). At first, these waxy pustules resemble pycnidia or other flasklike fruiting bodies rather than the open pustule of most rusts. 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. In humid weather, the rust fungus continues to spread from leaf to leaf until the entire hollyhock plant becomes infected and loses its leaves.

As a pathologist, I am intrigued by this disease because it is microcyclic, producing only two types of spores and needing no other host to complete its life cycle. Also, its pustules appear different from other rusts. In issue No. 1 of this newsletter, you learned that cedar-apple rust requires two host species and has several spore stages. Rust of hollyhock should be easier to control because we can concentrate on the plant. Pick off and destroy the first rusted leaves. As soon as flowering is over, collect all rust-infected hollyhock leaves and stalks, destroy them by burning, and bury them in a compost pile or haul them away with the trash. On some weeds, the rust fungus can survive the winter, so practice good weed control.

Preventive fungicides are available for this rust, but sprays must be initiated in the spring as new growth appears. If this is a perennial problem that you would like to control, mark your calendar now to spray next spring. Options are listed in the pest control handbooks as usual. You might also consider looking for a resistant variety. One friend said that his new, improved variety is loaded with rust while his neighbor's

hollyhock, which had been his grandmother's, is unaffected. For more on this disease, read *Report on Plant Disease* No. 627. (Nancy Pataky)

### **Turfgrass Rust**

It may seem an odd time of year to be reading about rust on turfgrasses, but we have reports of many such cases in the midsection of the state. Turf rusts generally appear in cooler temperatures and, if you force yourself to remember, we recently experienced a week of cool days with low humidity and very cool nights. The result was a nice crop of rust in the lawn.

All turfgrasses can be infected with rust fungi, but Kentucky bluegrass, perennial ryegrass, tall fescue, and zoysiagrass tend to be most susceptible. Early symptoms of rust diseases include light yellow flecks on leaves and stems, giving the lawn a yellow cast. The leaf tissue ruptures at these yellow spots, and spores of the fungus are produced. The pustules may be yellow, orange, brown, or red. The spores rub off very easily on hands, shoes, clothing, and animals. Often, the disease goes unnoticed until you mow the lawn and see that your white shoes are covered with a dusty coating of rust-colored spores.

Severely infected turf appears thin and tinted yellow, red, or brown, depending on the fungus and time of year. The turf becomes weakened, unsightly, and more susceptible to injury from environmental stress and other disease pathogens. Grasses growing slowly under stressful environmental conditions are most susceptible to rust, particularly when water, fertility, and soil compaction are inadequate for good growth. There are also varieties with resistance and susceptibility to rust.

Management measures should target stress areas. Leaf wetness is required for infection, so it is important to water early in the day so the turf can dry before night. Water turf infrequently, but to a depth of 6 inches or more at each watering. Avoid frequent, light sprinklings. Fertilize to keep the grass growing about 1 inch per week in summer and early fall droughts. Use balanced fertilizer and do not apply excessive nitrogen. As the grass grows, it pushes rust-infected leaves outward, making it easy to mow and remove infected blades. Be sure to catch these clippings and remove them from the area. Mow regularly to remove infected leaf tips, but avoid mowing below the recommended height for the particular turf species. Prune surrounding trees and shrubs to improve light penetration and air circulation around densely shaded areas.

If the lawn is badly infected or the combination of rust and other stress produces a poor lawn and forces a renovation, it is ideally done in mid- to late August. Use a blend of turf cultivars with resistance to rust as listed in *Report on Plant Diseases* No. 412. Preventive fungicides are available, but they offer only a temporary solution. Check the usual pest control handbooks for registered chemicals. (Nancy Pataky)

### **Horsechestnut Leaf Blotch**

This disease is also known as *Guignardia* leaf blotch because the causal pathogen is a fungus named *Guignardia aesculi*. We see it most commonly on horsechestnuts, but buckeye trees also host the disease. From a distance, infected trees appear to be severely scorched. On closer inspection, however, reddish brown leaf spots with bright yellow margins are apparent. The spots become large and cover most of the leaf surface. Leaves then become dry and brittle and drop early. You can distinguish this disease from environmental scorch (discussed in issue No. 5 of this newsletter) by the fruiting bodies formed by the fungus in the leaf lesions in moist weather. These structures are called pycnidia. They appear black and are about the size of a pinhead. All leaves are affected, unlike scorch, which affects newest leaves first on the side of the tree that is exposed to sun or wind.

This disease may be serious and treatable with fungicides (starting at bud break) in nursery stock, but mature trees usually retain live buds and lose leaves late in the season, so they are not significantly harmed. Most of the season's growth has already occurred before infection. Removing fallen leaves may be helpful in reducing the amount of fungal inoculum living through the winter on these leaves. Also, try to prune surrounding vegetation to allow better air flow through the area for more rapid drying of foliage. This disease is one more example of why you should not plant trees too close together when they are young. Consider mature size and spread when you select planting sites. (Nancy Pataky)

### **Witches' Brooms**

Many plants develop a brooming symptom called witches' brooms. On woody plants, this appears as a proliferation of shoots from one point—like a broom. The cause of these symptoms varies with the host. Cherry and blackberry witches' brooms are caused by fungi. Some witches' brooms are the result of phytoplasmas (mycoplasmas).

Common hackberry trees in Illinois usually have witches' brooms throughout the canopy. These brooms are thought to be caused by a powdery mildew fungus in association with an eriophyid mite. This is so often found on Illinois common hackberry trees that witches' brooms seem almost characteristic of the species. Many of the twigs in a broom die back in the winter. Buds on the surviving twigs are numerous, larger than normal, usually grayish, and with looser scales than normal buds. The overall effect of the tree is that it has many clumps of thick growth throughout the canopy. The brooms may be unpleasant in appearance, but they will not kill a hackberry tree.

As far as we know, there are no practical control measures for witches' brooms on hackberry. If you need a tree without the brooms, do not plant a common hackberry. Sugarberry is less frequently affected, and both Chinese hackberry and Jesso hackberry are considered resistant. *Report on Plant Disease* No. 662 discusses this condition. (Nancy Pataky)

Home, Yard & 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, Raymond Cloyd, (217) 244-7218, entomologists; Nancy Pataky, plant pathologist, (217) 333-0519; and Tom Voigt and David Williams, horticulturists, (217) 333-0350. Phil Nixon is the executive editor of the Home, Yard & 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 Phyllis Picklesimer, typeset by Oneda VanDyke, and proofread by Erin Cler, all of Information Technology and Communication Services.

For subscription information, phone (217) 333-2666 or (800) 345-6087, or e-mail [acesnews@uiuc.edu](mailto:acesnews@uiuc.edu). Web subscriptions are available (<http://www.ag.uiuc.edu/cespubs/hyg>).

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