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HOME, YARD & GARDEN PEST NEWSLETTER
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INSECTS

Pest Watch

Bagworms should be finished hatching and blowing from tree to tree by now, so this is the time to spray them with *Bacillus thuringiensis kurstaki* (Dipel, Thuricide) or pyrethroids. When checking a tree for infestation, use binoculars to check the top of the tree. Infestations are likely to be heaviest there.

The first generation of fall webworm is becoming obvious in extreme southern Illinois. Be alert for this insect throughout the southern half of the state. Control can be accomplished with forceful sprays into the webbing or simply by pruning off the webbing that contains the caterpillars.

Mimosa webworm is light this year, as one would expect following a cold winter. Even through southern Illinois and farther south through Kentucky, neither honey locust nor silk tree (mimosa) is showing much damage.

Cottony maple scale is numerous in some areas of northern Illinois and has become obvious with the production of the popcornlike egg sacs. This pest will be most numerous on silver maple, where it usually causes little damage aside from producing large amounts of honeydew that make cars and sidewalks sticky beneath the tree. When scouting this pest, look for whitish masses about 1/8 inch long that move when prodded. These masses are the larvae of the twice-stabbed lady beetle or a close relative. If these are numerous—that is, one for every 1 to 2 feet of infested branch—they will probably provide as much control to the scale as a crawler spray in mid-July. By mid-July, many of these larvae will have emerged as 1/8-inch-long, black lady beetles with two red spots on their backs. Be sure to double check for them before applying a crawler spray. A crawler spray will kill large numbers of the beetles and may set back eventual control of the pest. We primarily recommend a dormant oil spray to control this scale. During the winter, the adult lady beetles are under loose bark and protected from the spray.

Japanese beetle adults were first seen in Kentucky during the week of June 7, says Mike Potter, University of Kentucky Extension entomologist. Watch for them to show up in Illinois, although they have not appeared in central Illinois as of June 18. As mentioned last week, controlling early infestations may reduce feeding later. *(Phil Nixon)*

Potato Leafhopper

Potato leafhoppers attack many landscape trees, such as maple, crab apple, birch, and ash. Red maples are most susceptible; silver, sugar, and Norway maples are more tolerant. Potato leafhoppers possess piercing–sucking mouthparts that they use to feed in the vascular tissues of plants. As they feed, they inject a toxic fluid into plant tissue. Feeding, especially on maples, causes stunted tree shoots and leaves that curl downward with brown edges. On other plants, such as ash, potato leafhopper feeding creates small white or yellow spots on leaves, resulting in a stippled appearance because potato leafhoppers remove the chlorophyll (green pigment) from the leaves. Potato leafhoppers don't overwinter in Illinois because their eggs are very sensitive to cold temperatures. They winter in the Gulf of Mexico and are blown north into Illinois by prevailing winds from around early May to early June.

Potato leafhopper adults settle into alfalfa fields during the early spring migration; they may then migrate onto ornamental plants during the first cutting of alfalfa. Adults are small (approximately 1/16 inch long), wedge shaped, and pale green with white eyes. Females lay eggs into the veins on the underside of leaves. Eggs hatch in six to nine days into light green nymphs that are found on leaf undersides and tend to move sideways when disturbed. Nymphs may undergo five instars before molting into adults. Adults and nymphs are similar, except that adults are larger, have wings, and can fly. The wings are held rooflike over the body. Empty white cast skins on the underside of leaves provide evidence of potato leafhopper activity. There are three to five generations per year.

Insecticides must be applied before potato leafhoppers cause plant damage. Control can be obtained

with the use of pyrethroid insecticides such as bifenthrin (Talstar), cyfluthrin (Tempo), lambda-cyhalothrin (Scimitar), and permethrin (Astro). If damage has already occurred, insecticide applications will prevent further damage, and new growth will appear normal above the damaged leaves. Regular scouting helps minimize the potential for potato leafhoppers to cause severe foliar damage. *(Raymond Cloyd)*

Honeysuckle Aphid

Honeysuckle aphid is one of the most damaging insect pests of bush-type honeysuckles. It was first recorded in Illinois in 1981 and occurs heaviest in the northern half of the state, although it can be found as far south as Effingham. Aphids cause plant injury by injecting toxins or growth-regulator–type substances with their saliva when feeding. These substances stunt new growth and cause twigs to branch into clusters called witches'-broom. Affected branches can die in winter, and heavy aphid infestations can kill plants.

Honeysuckle aphids overwinter as eggs, laid in the fall on the tips of branches. They hatch in the spring into wingless females when leaves are expanding. Aphids that develop from eggs can give birth to live young. The aphids start feeding when leaves are fully expanded. Honeysuckle aphids are cream colored and feed on new shoots on leaf undersides and in folded leaves. There are multiple generations during the summer, and winged males and females can be found in early fall.

Management of honeysuckle aphid includes the use of resistant varieties of honeysuckle, proper cultural practices, and the use of insecticides. Honeysuckle varieties that are resistant to honeysuckle aphid are Arnold's Red, Clavey's Dwarf, and Emerald Mound. Proper watering and fertilization practices can also lead to fewer problems with this pest. Avoid overwatering and overfertilizing plants, especially with nitrogen, as these practices prolong infestations by stimulating succulent shoot growth. Prune out witches'-broom growth before buds break to remove overwintering eggs.

Systemic insecticides used to manage honeysuckle aphid include acephate (Orthene), imidacloprid (Merit), and oxydemeton-methyl (Metasystox-R). These products help to obtain control within the folded leaves. Make repeat applications when needed. Orthene and Metasystox-R should give a month of control, whereas Merit may give season-long control. The benefit of using systemics is the long lasting residual activity and preservation of natural enemies. Be sure to read the label for instructions on the application methods for these systemics. *(Raymond Cloyd and Phil Nixon)*

PLANT DISEASES

Pin Oak Problems

Reports throughout Illinois over the past several years indicate that many homeowners are having problems with their pin oaks. At least a part of this problem is due to chlorosis and soil pH, but I suspect that root injury has intensified the situation in many cases.

Yellowing of plant foliage, usually with green veins, is called chlorosis. If chlorosis is caused by a lack of iron, it is called iron chlorosis. Usually, the newest leaves show symptoms most intensely. A closely related problem is manganese chlorosis. Symptoms are similar except that older leaves show symptoms first.

Iron chlorosis is a common problem in Illinois on several tree species, including pin oak, sweetgum, maple, and birch. In most cases, the soil has plenty of iron for tree growth, but our high-pH soils bind up the iron, making it unavailable to the roots. No pathogen is involved in this noninfectious problem. Soil conditions cause the chlorosis.

As chlorosis intensifies, we see brown speckling of the leaves, then totally necrotic leaves, branch tip dieback, and eventual death of branches and even mature trees. The process is a slow one, taking several years before dieback occurs and branches die. However, if the condition goes untreated, the tree will decline and could eventually die.

We have seen more than the usual amount of chlorosis on pin oaks in the last several years. Some of the chlorosis may be due to wet soil conditions that cause root injury, inhibiting the uptake of nutrients. Many of the cases we have received at the Plant Clinic are on oaks and appear to be iron chlorosis. Why is the situation worse? And why does a tree that has been unaffected for 15 or 20 years start to show chlorotic symptoms?

Iron chlorosis seems to occur when roots grow into an area of high-pH soil, such as the foundation of a building, the area under a sidewalk, a gravel parking lot or driveway, or many other alkaline sites. This can explain why an older tree would start to show symptoms. Logically, any factor that affects root health could aggravate a nutrient uptake problem. In the past

several years, we have had an abundance of rain early in the season, often in flooding quantities. Such conditions rob soil of oxygen, causing root injury and inefficient nutrient absorption. The cause of poor growth on pin oaks is not just chlorosis but high soil pH, location of planting, abundant moisture, poor drainage, and many other site and environmental factors that affect root health.

What can be done to remedy the situation? There may be nothing we can do to help older trees. Prune out dead wood to avoid secondary wood rots, and try to improve drainage on the site away from the tree. Consider treating the tree for chlorosis and possibly using an acid fertilizer. It might be wise to start with a soil pH test to determine the extent of that problem. There are several types of treatment that can be used for chlorosis. These are discussed in *Report on Plant Disease* No. 603, "Iron Chlorosis of Woody Plants: Cause and Control," or horticulture fact sheet NC-380. The method you choose will depend on the intensity of the problem, the age of the tree, the pH of the soil, and site restrictions. *(Nancy Pataky)*

Black Rot of Grape

Got grapes? If so, you may be well aware that black rot, caused by the fungus *Guignardia bidwellii*, is the most serious disease of cultivated and wild grapes. If you are not familiar with grapes, you may want to brush up on this important disease. Although we have not seen black rot at the Plant Clinic this season, it has been reported in neighboring states.

The disease is most destructive during warm, wet seasons. The fungus can infect all parts of the vine—the shoots, leaf and fruit stems, tendrils, leaves, and fruit. However, the most damaging effect is on the fruit. Infections early in the growing season destroy the blossom clusters, while later infections can rapidly destroy many of the berries.

Starting in late spring, you may notice reddish brown and circular to angular lesions on the upper surface of the leaves. The center of the lesion turns tan to brown and has a black border. Lesion size is variable, and lesions will merge to form large blotches. Only young, rapidly growing leaves are susceptible to infection.

Although fruit can be infected shortly after petal fall, most infections occur when the green fruit is half to almost full size. A small spot appears that is circular and whitish tan, often surrounded by a brown ring. The spots rapidly enlarge, darken, and then become sunken and wrinkled. Eventually, the berry becomes coal black, hardens, and drops early. The surface of the withered fruit is covered with minute, black, pimplelike fruiting bodies that are often arranged in circular zones. This entire process takes only a few days.

Lesions on other parts of the vine are sunken, dark purple to black, and are oval shaped or elongated. Fruiting bodies are scattered throughout the lesion. These lesions can cause splits in the cane bark. Early berry stem infections can cause berries to shrivel and fail to develop.

Black rot is not difficult to control if the following management practices are used.

- Choose grape cultivars that show resistance to black rot and other important grape diseases. A list of cultivars is presented in *Report on Plant Disease* No. 703, "Black Rot of Grape," available through your local U of I Extension office or on the Web at http://www.ag.uiuc.edu/~vista/horticul.htm.

- Promote rapid drying by choosing a sunny planting site, properly spacing and tying the vines, and removing weeds and tall grass.

- Prune properly during the dormant season, and destroy diseased tissues to reduce inoculum of the fungus, thus limiting disease.

Use fungicide sprays during wet seasons to protect the developing growth. Follow the grape spray schedule outlined in either Circular MD-1, *Illinois Commercial Small Fruit and Grape Spray Guide* or, for the homeowner, the *Illinois Homeowners' Guide to Pest Management*. These publications are also available through your local U of I Extension office.

Virus Diseases of Annuals and Perennials

Virus diseases of annuals and perennials are quite common. And, although some viruses can cause serious damage to plants, others are so mild that they may be overlooked. Symptoms may include overall chlorosis (yellowing) or chlorotic mottling; vein clearing (yellow or white color of the veins); green or dark bands of color parallel to the veins; yellowish or light green spots or blotches on the leaves; water-marks or rings on the foliage; leaves that are blistered or puckered, dwarfed, curled, wrinkled, and cupped downward; or plants with low vitality, small leaves, and shorter, bushier growth than normal.

Some of these symptoms are very similar to symptoms caused by some of the growth-regulator herbicides. Look closely at the pattern in the planting. Herbicide injury will be more intense near the source of the herbicide and progressively less intense moving away from the source. Other broadleaf plants will likely show symptoms as well, and all at about the same time. Viruses are more likely to occur on scattered plants and to spread slowly during the season. Viruses tend to be fairly specific to one type of plant species.

Once infected, plants remain so for life. The virus particle needs a live plant cell in which to multiply and spread. It cannot be cultured, extracted, or induced to sporulate in a lab, so we are not often very helpful in confirming a virus disease. There are private labs that specialize in serological techniques for confirming some viruses, so there is help for commercial growers or those willing to invest some time and money in tracking down a specific virus.

Viruses are spread by many vectors, including mechanical transmission, insects, seed, grafting, nematodes, vegetative propagation, and fungi. If you can identify the virus disease, you will probably be able to learn how the disease is spread, and this information will help you determine disease control practices.

You cannot kill or inhibit virus particles with sprays. Try to purchase only disease-free plants or those that appear healthy, without odd colors or leaf patterns. Remove plants that have damaging virus symptoms. Insect control is also a vital part of virus control in greenhouse or polyhouse situations.

If you are interested in detailed information on viruses, try the virus on-line Web site at http://biology.anu.edu.au/Groups/MES/vide/. The University of Illinois has several *Reports on Plant Disease* that discuss virus diseases of annuals and perennials: No. 608, Geranium; No. 612, Gladiolus; No. 614, Orchids; No. 632, Rose; No. 634, Tulip; No. 654, Iris; and No. 665, Tomato Spotted Wilt Virus (on many floral crops). *(Nancy Pataky)*

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