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

This is the last weekly issue of the *Home, Yard, and Garden Pest Newsletter* for the year. Issues will be biweekly through September, with monthly issues in October and November.

Comments concerning the newsletter should be sent to Phil Nixon at (217)333-6650 or **nixonp@mail.aces.uiuc.edu.** Comments concerning particular articles should be made to the author given in parentheses at the end of the article. Author telephone numbers are given at the end of each newsletter. These authors also welcome first pest sightings of the year, as well as reports of unusual pest species or unusually large numbers of pests. Thanks for your support and interest. *(Phil Nixon)*

INSECTS

Lace Bugs in Illinois

Lace bugs are present throughout Illinois, feeding on a variety of plant types. Lace bugs are not generally considered a significant ornamental pest, as they don't usually inflict direct harm to plants. However, high populations can reduce the aesthetic appearance of certain plants. Lace bugs feed on a variety of trees and shrubs, including azalea, basswood, cotoneaster, hawthorn, linden, oak, rhododendron, and sycamore. Herbaceous plants that are susceptible to lace bugs include aster, chrysanthemum, and scabiosa. The major plant-feeding lace bug species include *Stephanitis* spp. and *Corythuca* spp. *Stephanitis* spp. are primarily pests of broad-leaved evergreens, whereas *Corythuca* spp. are pests of deciduous trees and shrubs.

Lace bugs feed on the undersides of leaves; using their piercing–sucking mouthparts, they withdraw plant sap from individual leaf cells, causing leaves to appear stippled and bleached. Damage is similar to that caused by spider mites and leafhoppers; however, lace bugs leave black, tar-spot–like droplets of excrement on leaf undersides. The presence of this black excrement distinguishes lace bugs from spider mites and/or leafhoppers. Very high lace bug populations and extensive feeding may reduce plant vigor, depending on age and size, creating undue stress that increases susceptibility to other insects and/or diseases.

Adult lace bugs are very distinguishable and quite attractive. They have lacy, clear, shiny wings that are held flat over the body. The adults are 1/8 to 1/4 inch long (3 to 8 mm). They tend not to fly but move sideways instead when disturbed.

Female lace bugs lay between 20 to 50 eggs underneath leaves, placing them primarily alongside leaf veins. The eggs are black and shaped like a wine flask. Eggs hatch into shiny black nymphs with spines. Nymphs undergo five instar stages before reaching adulthood. Shed skins on leaf undersides are evidence of nymphs that have transformed into adults. It takes about 30 days to go from egg to adult.

Lace bugs may have as many as three generations per year in portions of Illinois. *Stephanitis* spp. overwinter as eggs that are cemented onto leaves, whereas *Corythuca* spp. overwinter as adults in bark crevices and branch crotches. Adult activity begins in the spring when leaves unfold.

Lace bugs tend to occur in higher numbers on plants such as rhododendrons and azaleas that are located in sunny areas, rather than on plants in shady locations.

Control is generally not a concern, as lace bugs are susceptible to an array of natural enemies, including predators such as green lacewings, plant bugs, assassin bugs, minute pirate bugs, spiders, and predatory mites. If feasible, washing lace bugs off plants with a hard stream of water may be effective. In addition, this practice preserves existing natural enemies. If necessary, pest-control materials—including acephate (Orthene), carbaryl (Sevin), cyfluthrin (Tempo), and insecticidal soap—may be useful in managing lace bugs. Because they reside on the undersides of leaves, thorough coverage on leaf undersides is essential. *(Raymond Cloyd)*

White Grub Update

Adults of masked chafers, also known as annual white grubs, appear to be low in number this year, at least in central Illinois. However, Japanese beetles appear to be making up for the shortage of masked chafers, with their numbers appearing to be higher than usual in many areas of the state.

Weather conditions are ripe for a large grub infestation. After adequate rains across the state in early July, follow-up rainfall has not occurred. The forecast for the middle of July is for no rain throughout Illinois. The lack of rain and the presence of sunny skies will likely cause nonirrigated turf to return to dormancy. If so, the adult Japanese beetles and masked chafers will concentrate their egg-laying in green, irrigated turf. This should result in damaging numbers of grubs from mid-August into October.

Application of imidacloprid (Merit) or halofenozide (Mach 2) to irrigated turf during July is recommended to prevent turf damage later. Both insecticides take about 3 weeks to kill grubs but last for several months. They are most effective on small, newly hatched grubs. Both insecticides are also available to homeowners, with halofenozide also available as Grub-ex, Ortho Bug-B-Gone, and Scotts grub control.

Watering in the insecticide application with at least 1/2 inch of water is recommended. Mach 2 is quite water-soluble, and dried residue readily washes off the grass and into the root zone with rainfall. Imidacloprid is more water-soluble than older grub insecticides and washes off with rainfall almost as easily as halofenozide. However, ultraviolet light (sunlight) is a major factor in the breakdown of many pesticides, and leaving the insecticide residue in strong sunlight on the grass waiting for a rain may result in some breakdown of product. In addition, insecticide on the grass blades and thatch is not in the soil controlling grubs. As the grubs will not hatch until late July, applications at that time should be watered in so that activity against the grubs starts as soon as possible. In any case, if rainfall has not occurred within 3 or 4 days after application, irrigating the insecticide into the soil is a good idea.

You will want to cut through and pull back treated turf in August to make sure that the insecticide application was effective. Wait until at least 3 weeks have elapsed since the insecticide application. You will also want to check lightly irrigated and nonirrigated, untreated turf in early August to determine if a spot rescue treatment with trichlorfon (Dylox or Proxol) is needed. *(Phil Nixon)*

Caterpillar Watch

Some bagworms are approaching 1 inch in length and causing considerable damage. Check to make sure that damage is not occurring, particularly on arborvitae, spruce, Eastern red cedar, and other junipers. Damage tends to be heaviest at the top of the tree, so use binoculars to aid inspection.

If you tend to use diazinon, chlorpyrifos (Dursban), malathion, carbaryl (Sevin), or other older insecticides, realize that bagworms over 3/4 inch long will not be controlled. *Bacillus thuringiensis kurstaki* (Dipel or Thuricide) should still be effective. Trichlorfon (Dylox), cyfluthrin (Tempo), and other synthetic pyrethroids should still be effective as well. In southern Illinois, the caterpillars may already be too big for *Bt* to be effective.

Other caterpillars commonly appear at this time of year and can be very noticeable. Yellownecked caterpillar, walnut caterpillar, white-marked tussock moth, and other caterpillars can occur in large numbers. They eat all the leaves off large branches or small trees. Realize that tree leaves provide most of their food for the tree during the first half of the growing season. Healthy, deciduous trees can lose some or all of their leaves from now through the end of the growing season with little impact on tree health.

Evergreens, particularly conifers, can be killed by defoliation so infestations there are more serious. Large caterpillar infestations on evergreens should be treated with *Bt* or another appropriate insecticide. Infestations of caterpillars on deciduous trees and shrubs may or may not be treated, depending on the health of the plants and their importance in the landscape. Plants on which the aesthetic damage of caterpillars would be very noticeable should be treated for that reason. Others, as long as they are healthy, probably do not require treatment. *(Phil Nixon)*

PLANT DISEASES

Proper Planting Depth

This is not a disease problem, but it certainly promotes diseases. The Plant Clinic receives many tree samples with top dieback; branch death; yellowed, smaller than normal leaves; or other symptoms of stress. Sometimes the cause of the problem is easy to detect. There may have been construction and obvious root injury in the area. Other times, the tree is infected with *Verticillium*, or a root rot fungus makes itself

known by producing fruiting bodies on the trunk. More often than not the tree looks puny, and samples consist of dead twigs. We may spend many days incubating or culturing samples only to find out later that the tree was planted too deeply.

If you have a tree that fits this description, step back and look at the base of its trunk. Tree trunks should have a flare at the base. If they look like telephone poles, with the same trunk diameter at 5 feet off the ground as at soil level, then the tree was planted too deeply.

David Williams and Floyd Giles of the Department of Natural Resources and Environmental Sciences wrote a fact sheet a few years ago called "Planting Trees." They state that all woody plant materials should be planted at the same level as they were growing in the nursery. The planting hole should not be dug deeper than the depth of the root ball so that the root ball can't settle with time. I think most of us know how deep to plant a tree, but many make the mistake of working the hole too deeply and then failing to backfill and firm the soil to prevent settling. The tree starts out at the correct depth but sinks or settles with time.

The next time you see a tree without a basal flare, look at the stem growth as an indication of stress. Follow the stem back from the tip until you see the end of one season's growth. The current year's stem growth is usually a lighter color of bark, and it ends with a series of rings around the stem (1/8 inch apart) that are last year's terminal bud scar. Follow the stem down to the next set of rings circling the stem, and you can measure the previous year's growth. If the tree is only growing 1 or 2 inches per year, it is obviously stressed. Michael Dirr in *Manual of Woody Landscape Plants* lists how much annual growth to expect with various tree species. Most are in the 10- to 12-inch range.

Of course, other factors can stress a tree over time and cause a slow decline. Tight soils (clay), poor drainage, flooding, drought, compaction, and a myriad of other problems could be involved. Consult *Report on Plant Disease (RPD)* no. 641, "Decline and Dieback of Trees and Shrubs," for a discussion of other possibilities. This report is available in Extension offices or on the Web at **http://www.ag.uiuc.edu/~vista/.** *(Nancy Pataky)*

What Can I Do about Rose Viruses?

You've cut back all the rose canes with winter injury from the December 2000 temperature plummet to 20 degrees below zero. You've kept your plants watered through the recent heat and drought. You've even managed the Japanese beetle plague. Now you find some of your rose leaves have yellow mottling, yellow or white veins, banding of veins with various colors, yellow to light green blotches or lines in the leaf, ring patterns, distorted or puckered growth, or smaller than normal foliage. In other words, you suspect a virus. Like the other problems you have treated, this one needs to be stopped now before it gets out of hand.

Viral diseases of roses are generally diagnosed based on symptoms as just described. The diseases usually do not kill infected plants but may reduce plant vitality and the quality of flowers. Because the range of symptoms is wide, it would be helpful to find pictures of rose viruses to help determine whether a virus is really involved. Many horticulture publications have such pictures, and the Web is very helpful. *Report on Plant Disease* no. 632, "Rose Viruses," may help. The *Compendium of Rose Diseases* by APS Press has great detail for the avid rosarian or diagnostician, including some color photographs.

Virus particles will **not** grow in artificial media in a lab. The Plant Clinic cannot isolate a particular virus through culturing procedures. Viruses are too small to be seen with a light microscope, so thin sections of plant material cannot help pinpoint a virus. For those who want to know the exact virus involved, there is a private lab in Indiana, AGDIA, Inc. They can screen for eight rose viruses, as detailed on their Web site, **http://www.agdia.com/.** There is a fee for this service, so check the site before sending your samples.

Viral infections of rose are systemic, which means they are found in all plant parts. A few parts may remain without symptoms despite the infection. Plants do not have an immune system, and they retain the virus as long as they are alive (with the exception of heat treatment in commercial propagation, which is used to inactivate some mosaic viruses). The virus particles need a live host to replicate. Although it may appear that viruses are more intense in the spring and fall, they are present all year. The heat of summer inhibits virus activity.

Because the treatment of rose viruses is generally the same regardless of the specific virus involved, exact identification is not usually necessary. Still, you want to be sure you are dealing with a virus. Viruses can be confused with injury caused by growth-regulator chemicals. The pattern of injury and host range should help in diagnosis. Herbicide injury is most intense near the source and less intense moving

with the wind or water away from the source. If broadleaf herbicides such as 2,4-D or dicamba are to blame, they should also affect other broadleaf plants in the area. Rose viruses (especially the mosaics) are spread primarily by budding and grafting techniques. It is rare to spread such viruses by insects, plant contact, or seed. Therefore, the pattern of infection in the planting would be very different from herbicide-drift injury.

If you would like help in diagnosing a rose virus problem, send a sample to a plant lab such as the University of Illinois Plant Clinic. Details on sending samples can be found on the Plant Clinic Web site: **http://www.cropsci.uiuc.edu/research/clinic/clinic.html.** We can help verify virus symptoms and eliminate other possible causes, but we cannot identify the specific virus. It is important to provide background information with samples—including symptoms, progression over time, number of plants infected, condition of nearby plants, chemicals used anywhere in the vicinity, time of application of chemicals, pattern in the garden, pattern on one plant, fertility practices, and any other cultural information available.

Because these viruses are spread almost entirely by budding and grafting techniques, the responsibility for control should lie with the nursery and commercial rose grower. If you purchase a plant that develops virus symptoms, contact your supplier and ask for a replacement. When buying plants in a retail center, examine the plant closely for possible virus symptoms. Buy only plants free of such symptoms. *(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.

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