

Number 15 - August 28, 2009

Woolly Apple Aphid

Woolly apple aphid, *Eriosoma lanigerum*, is common this year on crabapple, cotoneaster, strawberry, and other rose family plants. Other rose family hosts include hawthorn, mountain ash, and pyracantha. From a distance, stem and leaf undersides appear whitish and cottony. Their presence is attracting various predators including large numbers of lady beetles, lacewings, and syrphid flies. The honeydew they produce attracts numerous cicada killers, yellowjackets, bumblebees, and other bees and wasps. Thus, a client's report of large numbers of wasps flying around a tree may be due to an infestation of woolly apple aphids.

Woolly apple aphid adults are about one-eighth inch long and covered with white, waxy filaments, making them look like tiny, oval cotton balls. Nymphs may only have filaments protruding from the posterior half of the abdomen. Unlike most aphids, they do not have obvious cornicles, paired tailpipe-like structures near the end of the abdomen. They do have the characteristic aphid-like, long antennae. Winged adults fly very slowly and appear as one-eighth inch in diameter floating balls of white fluff in late spring and early fall.

They are numerous on leaf undersides and along stems, completely covering portions of the stems. They feed by

sucking out the plant sap from phloem vessels, removing the nitrogen, some of the water, and a small portion of the carbohydrates, excreting the rest out of the anus as a concentrated sap or light syrup-like liquid called honeydew.

Not only do these insects feed on the leaves and stems of rose family plants, they also feed on the roots of the same plants. They descend below ground where their feeding on plant sap can result in galls being formed by the plant. On younger trees and shrubs or on heavily-attacked plants, these galls can cause enough root damage to reduce plant health. However, host plants commonly do not produce galls in response to this feeding, resulting in less impact on the plant. In some locations, movement of the woolly apple aphids up and down the trunk from roots to stems and back again can be observed during the summer.

In the fall, woolly apple aphids produce winged individuals that fly to American elm. Mating occurs later in the fall on elm and eggs are laid on that host for the winter. However, nymphs can also spend the winter feeding on the roots of the rose family host. In the spring, the eggs hatch on elm with the aphids completing several generations feeding on elm before flying to a rose family host in late spring. Their feeding on American elm can cause curled, deformed leaves, resulting in a rosette effect. Those that

overwintered on the roots of the rose family host can stay on the roots to feed while others will migrate up the tree to feed on the stems and leaves for the summer.

Although American elm is uncommon in many urban areas due to Dutch elm disease, it is still the most common tree species in Illinois forests. Because Dutch elm disease typically does not kill the tree until a few years after reaching reproductive age, American elms are continuing to be produced in nature, they just don't get very large. These trees function as overwintering hosts as well as the roots of the rose family hosts.

It does not appear that these woolly apple aphid infestations are causing much damage to their hosts. Trees and shrubs do not show any dieback or leaf loss from aphid attack. Galls can be formed on twigs and branches in response to aphid feeding, but that has not been observed in Illinois. Realize that many attacked as well as uninfested crabapples will show defoliation from apple scab, which clientele may blame on the aphids. It is more likely that you may wish to control the aphids to reduce the honeydew, its stickiness and resulting sooty mold on surfaces, and its attraction to wasps and bees.

Although their waxy filaments protect woolly apple aphid somewhat from insecticide sprays, thorough coverage should result in control of those on the leaves and stems. It is not practical to control those on the roots. You need to be sure that your client understands that reinfestation from the roots could occur. Treatment of American elm will only be needed if damage occurred in the spring on that host.

Most contact insecticides will provide control of above ground infestations of woolly apple aphid. Insecticidal soap, summer spray oil, malathion, acephate (Orthene), and labeled pyrethroids such as cyfluthrin (Tempo), bifenthrin (Onyx), and permethrin (Astro) should be effective. Systemic insecticides such as acephate (Lepitect) and imidacloprid (Merit, Imicide, Pointer, Xytect) will also provide control. --*Phil Nixon*

White Grubs

White grubs appear to be low in number and spotty this year in central and northern Illinois. In my surveys, it has been difficult to find any grubs at all, and I have not heard of any treatable infestations. With the number of adult Japanese beetles in southern Illinois, damaging infestations are probably widespread in that area of the state.

Although adult beetle numbers were low this year in central and northern Illinois, some locations reported locally high numbers which may result in damaging white grub infestations. However, the periodic, timely rainfall experienced through Illinois this growing season have caused more eggs to be laid in unwatered as well as irrigated turf. Also, the extra rainfall results in more vigorous root growth, allowing the grass to grow roots faster than the grubs can eat them.

Fewer eggs with a lower area density coupled with moist soils allowing vigorous turf root growth should translate into only minor damage in scattered locations in central and northern Illinois. Trichlorfon, sold as Dylox, is the insecticide of choice to

provide quick, high level control of damaging infestations--*Phil Nixon*

Bagworms

Bagworms have about finished feeding for the year. Pupation occurs from mid-August to early September, depending on the temperature. With cooler temperatures this year, pupation may not have occurred yet in central and northern Illinois. Pupation should have occurred in southern Illinois. To determine whether pupation has occurred, fresh foliage around the top of the bag and an open top indicate an actively-feeding caterpillar susceptible to control. If they are closed at the top as in the associated photo, insecticidal control is not practical.

Even though feeding damage has essentially ceased for the year, caterpillar control now can result in reduced infestation next year. Several years ago I sprayed about 120 infested arborvitae on Labor Day weekend after the males had pupated, but the females had not. The next year, only four trees had detectable infestations. Male bagworm caterpillars go through five larval instars, whereas females go through six. This results in the females spending an extra week or so as caterpillars. They grow bigger during this time, resulting in female bags tending to be slightly larger than those of the males. I use this information when checking overwintered bags for viable eggs in the spring.

To achieve control this late in the season, cyfluthrin (Tempo, Bayer Advanced Multi-Insect Killer), bifenthrin (Onyx), or permethrin (Astro, Eight

Insect Spray) will provide the best control. B.t.k. is not likely to be very effective on these large, older caterpillars.--*Phil Nixon*

Scoliid Wasp

Scoliid wasps, family Scoliidae, feed as parasitoids on the larvae of green June beetles. With higher numbers of these beetles in many areas of Illinois this summer, we are now getting reports of large numbers of scoliid wasps. These are one inch long black wasps with the posterior portion of the abdomen being orange with a couple of yellow spots. These wasps cruise over turf areas in figure 8 patterns searching for locations to lay their eggs. They tend to fly a foot or so above the grass, being very noticeable.

Once located, the wasps crawl down into the burrows of the green June beetle grubs. Once it locates a beetle grub, it stings it to paralyze it, and lays an egg on the underside of the grub. This egg hatches into a legless larva that feeds on the paralyzed, but still living, beetle grub. When fully grown, the larva spins a cocoon, pupates, and emerges as an adult wasp during the next growing season.

Although fearsome in appearance, the adult wasps are unlikely to sting unless grabbed or stepped on while barefoot. With these wasps in almost constant motion, it is difficult to find one at rest where it could be grabbed or stepped upon. Thus, treatment is normally not recommended. However, applying a grub control should indirectly cause the adult wasps to leave due to a lack of hosts to attack--*Phil Nixon*

Clinic Samples Soon

The University of Illinois Plant Clinic is a seasonal clinic operation. It is open May 1st each year and closes September 15th. As I look around the clinic now, it hardly seems that things have begun to slow down. In fact, the late start to the season has been followed by a late finish. Regardless, seasonal help leaves soon and the clinic will again close on September 15th. If you have samples that you have been putting off sending, do so soon.

Although staff will be at the clinic until the end of September, they will be finishing up samples, organizing paperwork, cleaning, and preparing for next season. We will not accept new samples after September 15th. The web site for additional information is <http://plantclinic.cropsci.illinois.edu/>. The Plant Clinic telephone number is 217-333-0519.

Plant disease problems rarely happen overnight. Insect problems might appear to happen quickly, but are beginning to slow down at this time of year. Get out into the landscape now and look at your plants. If you have a problem and need help, now is the time to act. We are happy to provide lab help before September 15th.--*Nancy Pataky*

Pine Gall Rusts

Here is problem that has been popping up in nurseries and some landscape plantings. It is a gall that forms on pine stems. The galls are rust galls. Although much less common than the galls caused by cedar apple and related rusts, these

galls also appear on stems, but on pines. The galls form as a swelling in the stem. You cannot cut out the gall without cutting out the stem. The image shows one of these galls before spores are evident. Eventually rust pustules and spores will be evident on the gall. The disease is not a widespread problem, but one that you should know about in order to stop spread of the disease.

The two rusts of pine are pine-oak gall rust and pine-pine gall rust. The fungus causing **pine-oak gall rust** (*Cronartium quercuum*) requires two different hosts to complete its life cycle (as the name implies). In Illinois, the primary coniferous host is Scotch pine, but Jack, Austrian, mugo, ponderosa, and red pines may also be infected. Deciduous hosts include red, pin and bur oaks.

Symptoms on pine include swollen areas on the branches, lumps or galls measuring up to four inches in diameter, and slowed growth. Mature galls often have white to yellow, blister-like ridges (fruiting bodies) that rupture through the bark and produce yellowish spores like most other rusts you have seen. Severe infections may result in witches' broom (multiple shoots growing from a gall), death of branches, and possibly death of the entire tree. Symptoms on oak leaves are similar to the symptoms of rust on crabapple but much smaller. Small dark brown spots with yellow borders are visible on the upper leaf surfaces and fruiting structures and spores develop on the underside of infected leaves.

In the spring, mature galls on the pine host release wind-blown spores which infect expanding oak leaves. About one week after infection, orange spores are

released from the underside of infected oak leaves, causing additional oak leaf infections. Two to three weeks later, hair-like structures are produced on the underside of infected leaves and different spores are released which infect pine needles, succulent stems, and expanding candles. New pine infections take two to four years to develop into mature galls that can release spores capable of infecting oak leaves.

Pine-pine gall rust (also called western gall rust) is caused by *Endocronartium harknessii*. You may also see the fungus as *Peridermium harknessii*. In Illinois, the primary host is Scotch pine, but Jack and ponderosa pines may also be infected. Pine-pine gall rust is very similar to pine-oak gall rust in severity, symptoms, and in the formation of galls. However, pine-pine gall rust does not infect oaks and does not need two hosts in order to complete its life cycle. The galls of pine-pine rust appear covered in a continuum of fissures and spores.

To avoid the pine rust galls, purchase seedlings and young pines from a reputable source and inspect the trees prior to planting. However, keep in mind that even close inspection is not foolproof since you may not be able to detect an infection until 2 years after it is initiated. Although the field symptoms of these two rusts are virtually indistinguishable on pine, there are microscopic differences in the spores from the pine galls. Examine nearby oak hosts for evidence of rust lesions, indicating the presence of pine-oak rust.

Infected pine branches, galls, and/or whole trees should be removed before spring because the rust galls will release infectious yellow-orange spores each spring. Start looking for these galls to

remove now. There are two fungicide active ingredients available to protect pines from infection. These are triadimefon and mancozeb. Triadimefon is sold as Bayleton or Strike. Strike is labeled for production nursery use only. Mancozeb is another active ingredient sold as Dithane, Fore, Lesco Mancozeb, Pentathlon, or Protect.

Because pine-oak gall rust has a few extra steps in the spring infection cycle, peak pine infection will likely be later than for pine-pine gall rust. The literature indicates that the pine-infecting spores are released 2-3 weeks after the first orange spores develop on the undersides of oak leaves. .--
Nancy Pataky

Peony Leaf Spot/Blotch

This is the time when many gardeners want to know what is causing the foliage on their peony to look so puny. Red to purple foliar blotches are caused by a fungus, *Cladosporium paeoniae*. The disease is known as leaf blotch, measles, or just Cladosporium. Early season infection on susceptible species can be unappealing and may reduce plant vitality. Infection that is appearing just now is usually not a problem to plant growth. There are some things you can do, starting now, to help minimize this disease for the future.

This fungal pathogen may cause small, circular, red or purple spots on the upper surface of young leaves just before the peony blooms. Later, the spots appear on the under side of leaves. The lower sides on infected leaves soon turn a dull brown, while the upper surfaces appear glossy dark purple, very visible after rain. As the leaves mature, the lesions enlarge rapidly and may form large, irregular blotches that make

affected plants unsightly as in the image. Stem and petiole lesions are short, reddish brown streaks initially, later becoming sunken or pitted. Spots on all plant parts remain purplish or brownish red throughout the season, making this disease easy to identify.

If *Cladosporium* is a chronic problem on your peonies, now would be a good time to consider replacement with disease resistant plants. Work with your nursery to find the best alternatives in the colors you prefer. One of the most helpful cultural practices is to remove leaves and stems from the site in the fall. Once leaves dry down, cut stems off to the soil line and remove all plant debris. Plants can be dug, split and spaced further apart to improve air circulation and keep humidity lower during the growing season. Pruning nearby trees and shrubs to allow more light and better air flow may help reduce infection. Finally, avoid wetting foliage when watering, or water early in the day. Fungicides are available for home garden use to help prevent peony foliar diseases, but they are not helpful at this time of year. Fungicides are used to protect new foliage as it emerges. Sprays are initiated when new growth is 2 to 4 inches tall and are continued following label directions until flowers begin to open. The addition of a spreader-sticker will help coverage. Chemical options are listed in the *Illinois Home, Yard, and Garden Pest Guide* or the *Illinois Commercial Landscape & Turfgrass Pest*

Management Handbook. Copper and mancozeb are the active ingredients labeled for this use.

For more information consult RPD No. 631, Red Spot, Leaf Blotch, or Measles of Peonies. This report is available in Illinois extension offices or on the web at <http://www.aces.uiuc.edu/~vista/abstracts/a631.html>.--Nancy Pataky

Diseases of Perennials Book

Anyone who grows perennials, for pleasure, profit, or both, can use this new book. I am speaking of *Diseases of Herbaceous Perennials* by Mark L. Gleason, Margery L. Daughtrey, Ann R. Chase, Gary W. Moorman, and Daren S. Mueller. The book is published by APS press, is 281 pages long, and just came out this summer (June 2009). There is a very good general section at the beginning discussing diagnosing and managing diseases of perennials. The bulk of the book covers diseases, organized by individual host genus. For each genus there is a page or two covering all the diseases you might see, along with 4-6 (or more) images. I have been waiting for a book like this for a long time. There have been smaller, less comprehensive versions, but this one really covers the topic well. Check it out and I think you will agree this is one you want in your library.--Nancy Pataky