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## Scouting Report

**Jumping Oak Plant Gall** infestations are more common this year than usual. These galls appear first as green pimples on white and bur oak leaves. Many have now turned brown. Heavily infested leaves curl longitudinally and turn reddish-brown, being obvious on heavily infested trees. Later in the summer, mature galls tend to break loose from the leaves and fall to the ground. On a patio or other hard surface, they quiver and jump slightly, hence their name. It is suspected that the gall wasp lays her eggs on dormant leaf buds, allowing them to appear very early on the leaves.

**Masked Chafer** beetles are flying throughout the state. They lay their eggs in drier soil than Japanese beetles. It seems that Japanese beetles out compete them as the masked chafer white grubs disappear in moist turf areas. With reduced numbers of Japanese beetles in east central Illinois, we have seen masked chafers take back areas where the Japanese beetles apparently pushed them out. This is likely to occur in other areas of the state where Japanese beetle numbers have been reduced by drought and cold winters. Masked chafer white grubs survive in drier soil than Japanese beetles and are not reduced as much by deep freezing soils as they tunnel deeper than Japanese beetle grubs. Masked chafer white grubs cause the same type of turf damage at the same time as those of Japanese beetle. They are controlled by the same insecticides.

**Fall Webworm** second generation is numerous in southern Illinois and will appear soon in central Illinois. The first and only generation will hatch within a couple of weeks in northern Illinois. Although the large silk tents are obvious, leaf feeding is not usually a health problem to trees at this time of year. However, if enough foliage is removed that trees releaf, the new leaves are unlikely to restore the energy spent to produce them, causing a reduction in tree health. (*Phil Nixon*)

## Japanese Beetle

Japanese beetle adults are present throughout the state. In most areas, numbers are low, but there have been reports of locally high numbers. We continue to see low numbers in east central Illinois from Onarga south to Charleston and west to at least Monticello. This area continues across central Indiana and most of central Ohio. Research studies have discovered no reason for the lower numbers over the past several years.

Numbers of Japanese beetles in central and northern Illinois were greatly reduced by deep soil freezing in the winter of 2013-2014 causing heavy white grub mortality. The droughts during the summer of 2012 and the second half of

the summer of 2013 greatly reduced white grub numbers throughout the state. Although building in numbers, these events are probably the main causes of lower Japanese beetle larva and beetle numbers for the last couple of years.

Japanese beetle white grubs prefer moist soils, so they will prosper with the high rainfall we are experiencing across the state this spring and summer. Even so, the combination of low adult beetle numbers to lay eggs combined with the high soil moisture allowing roots to regrow from grub feeding should reduce the need for white grub preventative applications this year.

Spot treatment of locally high grub numbers is likely, but widespread insecticide application should not be needed this summer. Scout turf areas in early August for grubs, and treat areas with at least 10-12 white grubs per square foot. Trichlorfon (Dylox) and chlorantroniliprole (Acelepryn) provide high levels of control within 3-5 days after application, making them excellent rescue treatments. Obvious turf damage is unlikely to appear before late August, so scouting and treatment in the first half of August will prevent damage in those areas with high grub numbers. (*Phil Nixon*)

**Fungus-killed Flies**

Fungus-attacked anthomyiid flies are being found on the ends of tree and shrub branches. Anthomyiid flies are gray and look like house flies but are slightly smaller. Many of them are leafminers or root feeders in the larval stage, and they are not generally considered to be pests of ornamental plants. They and other flies are attacked by the fungus, *Entomophthora muscae*, that apparently causes the fly to crawl to the end of the branch, leaf, or other upright object before it dies. It hangs onto the branch as it dies. The abdomen swells, and the legs and wings stick out. White fungal hyphae grow out of the insect and further attach it to the branch or leaf. Spores are then produced that spread on the wind more effectively from the elevated location.

Spores landing on adult flies germinate, and the hyphae penetrate the body to feed on the hemolymph, the blood, of the fly. Within a week, the fly is dying and climbing upwards. This fungus tends to be most common after rains in moderate temperatures. The lower temperatures during the last couple of weeks combined with the continuing rains this summer have been conducive to this fungus.

This year, the dead flies on the ends of branches and leaves are so numerous that the plants appear to be attacked by them. Obviously, there is no damage caused by or control needed for dead flies. If you have a client that requires their removal, they are usually attached too tightly to be knocked off with a water spray. They usually require hand-removal.

Much of the above information was taken from a fact sheet written by Whitney Cranshaw, Colorado State University available at https://bspm.agsci.colostate.edu/files/2013/03/Fly-Fungus.pdf. (*Phil Nixon*)

**Willow Blight**

Scab and black canker are two diseases of willow (*Salix spp.*) associated with

rapid blighting of leaves and shoots as well as dark brown to black stem cankers. Willow blight is the term used to describe a plant simultaneously infected with both diseases. Willow blight can cause extensive defoliation and dieback to susceptible hosts.

Willow scab is caused by the fungal pathogen, *Venturia saliciperda*. Initial infections occur as willow leaves are expanding in early spring (March-April). The fungus spreads from leaf tissues, through the petiole and into young twigs where dark cankers form, eventually girdling the twigs. Twigs girdled by cankers develop shoot blight symptoms above the point of infection. Distinctive, olive-brown spore masses form on the undersides of diseased leaves. These spores lead to infections of developing tissues as long as wet weather persists.

Black canker is caused by the fungal pathogen, *Glomerella miyabeana*. Symptoms of black canker first appear late spring to early summer (April-June). Infected leaves develop irregular, brown to black lesions. Leaves shrivel and die as infections spread to petioles and into twigs. Small, sunken cankers form near the twig-petiole junctions. Depending on the host's susceptibility, cankers may remain small and elliptical in shape, or encircle the twig. Fruiting bodies, exuding pink masses of spores (conidia) form in the sunken cankers. Conidia produced in the cankers cause new and secondary infections throughout the summer and fall.

Several key differences are available when comparing the two pathogens. Willow scab occurs earlier in the season. The undersides of infected leaves are often covered in velvety, olive-brown spore masses. Cankers are common on smaller willow twigs and shoots. Black canker occurs later in the season. Cankers are commonly observed on larger twigs and shoots and are often covered in distinctive pinkish spore masses.

Control options are limited. Raking and destroying leaf debris will have little value as both the pathogens are capable of overwintering in cankered, infected twigs. Pruning diseased branches from small trees may provide some benefit. Preventative applications of fungicides may provide some control. However, fungicides may not be feasible on large trees, especially those located near water that could potentially be contaminated by the application. (*Travis Cleveland*)

**Bacterial Leaf Scorch: The Time to Test Is Now!**

Bacterial Leaf Scorch (BLS) is a serious infectious disease with a wide host range of trees and shrubs. The disease causes the slow decline of the host, resulting in host death. It is caused by the bacterium *Xylella fastidiosa* which is also responsible for Pierce's Disease in grapes and is currently causing widespread damage to the Italian olive industry.

In Illinois, it affects a wide number of trees. The most common hosts in our state are oak (red oak group), elm, sycamore, London plane, sweet gum, hackberry, ginkgo, and maple (sugar and red). Many other woody and herbaceous plants can be susceptible to the pathogen. The bacteria is found only in the xylem (water-conducting) tissue of the plants, and is spread from host to host by root grafts. Xylem-feeding leafhoppers, treehoppers, and spittlebugs are also thought to act as vectors for the

pathogen. The disease does not spread quickly between hosts.

Scorch symptoms appear on leaves in early to midsummer, and gradually intensify as the season progresses. Affected leaves may turn a yellow/green color and then turn brown, usually from the margin of the leaf inwards. Older leaves are often affected first, and an individual branch or section of branches usually become discolored at the same time. Symptoms are generally not scattered throughout the crown. Branches will leaf out the following spring, but symptoms will re-appear and slowly spread through the crown of the tree over the course of subsequent seasons. Except in oaks, leaves generally do not drop until autumn.

The symptoms are easily confused with drought stress, cultural problems, cankers, and, in oak trees, oak wilt. It can also be confused with Verticillium wilt in some trees. Submitting a sample to a plant diagnostic laboratory is the only way to definitively diagnose the disease. At the University of Illinois Plant Clinic, we use an antibody test to determine the presence or absence of the pathogen in symptomatic tissue. Testing is performed once a year, in late August or early September. This is because the population of bacteria within the affected tissue increases as the season progresses, so testing in late summer is most accurate due to the increased pathogen numbers. A test conducted in spring or early summer may result in a false negative due to the population of bacteria being too low.

If you suspect that a tree or shrub is affected by BLS, you may submit a sample to the University of Illinois Plant Clinic starting in August. We will store the samples until we perform the test. Samples should consist of symptomatic leaves complete with petiole (the structure that attaches the leaf to the branch). Ideally, at least a few of the leaves would be transitioning from green to brown. There is a $25 fee for this test. To download a sample submission form, please visit the Plant Clinic's website at www.web.extension.illinois.edu/plantclinic and click on the "Sample Forms" tab. Please indicate that you wish the sample to be tested for BLS.

Management for trees affected with BLS consists of increasing tree vitality by mulching the base of the tree to retain moisture, watering during periods of dryness lasting more than 2 weeks, pruning out dead branches, and fertilizing when appropriate. While trunk injections with antibiotics have been shown to be effective at delaying symptom development, they do not cure the tree and the injection sites open new paths of entry for organisms that decay wood. Over time, repeated treatments can severely weaken the tree. Choosing non-susceptible hosts to plant near affected trees is also recommended to prevent the spread of disease. (*Diane Plewa and Travis Cleveland*)