COOPERATIVE EXTENSION SERVICE
HOME, YARD & GARDEN PEST NEWSLETTER
College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana - Champaign
Illinois Natural History Survey, Champaign

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Scouting Report

Japanese beetle adults have been reported in the Springfield and Watseka, IL areas, so they have not emerged in central Illinois. Remember that early control results in less feeding damage to foliage through their six week damaging period. This pest was discussed in Issue 8 of this newsletter published on June 13, 2011.

Periodical cicada egg-laying damage is being reported in central as well as southern Illinois. This damage was discussed in Issue 8 of this newsletter published on June 13, 2011.

Bagworms should have stopped ballooning in southern Illinois and can be treated at this time. It is best to wait for a week or two before treating in the northern two-thirds of the state. This insect was discussed in Issue 7 of this newsletter published on June 6, 2011. (*Phil Nixon*)

Fungus Gnat Maggots

Several areas of the United States are reporting large numbers of fungus gnat maggots crawling across turf and sidewalks. These insects in the Family Sciaridae feed on decaying organic matter in the soil. When full grown, they are about 3/8 inch long, slender, wormlike, and clear with black head capsules. They are coming up onto the surface where they migrate to pupate. These masses are reported as being round and 2 to 6 inches across, or more commonly as masses up to 2 inches wide and several inches long.

Fungus gnat larvae are more likely to be numerous in areas with an overabundance of water from rainfall or irrigation. Over-watering newly laid sod can result in large populations of these larvae eating young roots. Reducing irrigation will cause a reduction in the number of fungus gnat larvae and allow the sod to root.

These larvae are not likely to cause any damage to established turf and can be ignored or washed away with heavy streams of water. As adults, they are known as dark-winged fungus gnats, which are frequently very common in the spring and fall in Illinois, flying as large swarms up to several feet across. (*Phil Nixon*)

Flatheaded Appletree Borer

Flatheaded appletree borer attacks a variety of rose family trees including crabapple, hawthorn, serviceberry, mountain ash, and ornamental pears, plums, and cherries. It also attacks maple, ash, and a variety of other trees. Now is the time to treat for this pest.

Flatheaded appletree borer generally attacks trees or parts of trees under stress. It commonly attacks older rose family trees, assisting in their death. Particularly in the northern two-thirds of Illinois, serviceberry, mountain ash, flowering cherry, purple-leaf plum, and Bradford and Callery pears are short-lived trees, frequently dying within 30 years. As these trees decline, flatheaded appletree borer frequently attacks them. With homeowners and other clientele commonly assuming that all trees live for a hundred years or more, this natural decline and borer attack is difficult for them to understand.

It also frequently attacks maples that have been recently transplanted as well as those with frost crack injury or storm breakage. Maples in nurseries and new landscapes are typically attacked near the base of the tree. The larva tunnels under the bark in a helical fashion around the trunk, girdling and killing the tree. Larvae are likely to tunnel beyond the frost crack or storm damaged area, causing additional damage. Frothy sap commonly exudes through bark cracks in damaged areas.

Larvae tunnel through the cambium with older larvae tunneling into the heartwood. The tunnels are broad and packed with frass. Fully grown larvae are about one inch long. Pupation occurs in the heartwood with adult beetles emerging at this time of year through oval holes that are about three-sixteenths inch in diameter. Adult beetles are about one-half to three-fourths inch long, long-oval in shape, and grayish-bronze. The wing covers are rough with small bumps. After mating, females lay eggs for the next generation in wounds and in cracks in the bark.

Newly transplanted trees should be watered when necessary to keep them as healthy as possible. Other cultural practices assisting in adaptation to site and rapid growth help reduce borer attack. Plastic or paper trunk wraps reduce borer attack, but be watchful for disease development under that wraps.

Application at this time of imidacloprid (Merit, Xytect, others) is effective to newly transplanted stock and damaged trees. Spraying the bark should provide control. Application to trees declining due to age may extend longevity only a couple of years and is usually not recommended. (*Phil Nixon*)

U of I PLANT CLINIC: PLANT (CSI)

Unfortunately, we are not able to come to the site where the affected plant is growing, but a lot of times, we receive or request pictures of the "plant scene." Then, if we are unsure of the problem, we recommend that you send the plant sample or "Plant Crime Scene Evidence" to the U of I Plant Clinic lab.

What could be causing this plant to have these symptoms? Chemical? Virus? Nutrient deficiency? Insect? ….or is a combination of several of these factors? Do you know? If not, you may need to send a sample to the U of I Plant Clinic.

Once the plant sample arrives at the U of I Plant Clinic, we do an "initial walk-through" to get an overall feel for the injured or abnormal plant. Luckily, we don't have to worry about touching things or contaminating the plant evidence. Now, this is when we come up with some leads or possible diagnosis, based on visual plant symptoms.

At the Plant Clinic, we don't swab or collect fingerprints, hair, or dried blood. We look for signs of fungal diseases, nematodes, and insects or symptomology of chemical, environmental, or nutrient issues.

We do try to document all of this "evidence." And, of course, we are very, careful to preserve this plant evidence in its current form by using refrigeration or even watering (if we have an entire plant). Sometimes, we even document the "plant crime scene" by taking pictures, sketches, but no video walkthroughs are necessary.

After this, we take the plant sample to the scopes (dissecting scope and microscope) to collect further evidence, which could lead to a potential diagnosis. We don't use a swab, but we do use forceps, as well as other tools such as pruners, knives, or razor blades. Here are some things we may find on the plant sample in question: fungal structures, fungal spores, bacterial oozing, nematodes, or insect exoskeletons, frass, webbing, and feeding. Depending on the plant symptoms, we may choose to culture the sample to isolate a specific bacterial or fungal pathogen. In some cases, we might even use assays or quick strip tests involving ELISA or PCR! Then, I guess you could say we tag, log, and package it!

If we can't find any of these things above (signs of disease, insect, or nematode), that is when it can get tricky! It could be an environmental, nutrient, or a chemical injury situation. In cases such as these, we may need to rely on information included with the sample, phone inquiries, or documents such as soil tests, water analysis, or pesticide application logs.

Don't forget, once we have a plant sample in hand, we reserve the right to contact a grower, and perform a full interrogation! No, we don't ask them where the plant was in the night in question, but we may ask questions such as:

When was it planted?
What pesticides have been applied?
When were the pesticides applied?
Have you had a soil test?
What fertilizer has been applied?
What was the rate of fertilizer applied?
What has the weather been like?
How long have you had this problem?
In what kind of site is this plant growing?
Was it planted correctly?
What is planted in this area before?
What is the soil type?
What is the condition of the nearby plants?
How old is the plant?
What is the pattern of the affected plants?
What is the name of the plant species?
Are you a homeowner or a commercial grower?
Just to name a few.

When all of the evidence is collected and research has been done (books and internet), the plant case goes straight to the lead detective or in our case, the diagnostician (that's me). If I need to, I can also consult with experts on diagnosis and management strategies. Now, I don't deal with experts in blood pattern spatter, trajectory determination, or serology (blood and bodily fluids), but rather deal with campus specialists that can help me in

more specific areas such as crop, fruit, and vegetable pathology, fertility, weeds, horticulture, or entomology.

Some Plant CSI's only work in the field - these are Extension Educators, Extension Coordinators, Consultants, and Master Gardeners. They help to collect the evidence and they pass it to our forensic lab - The U of I Plant Clinic!

Based on these procedures, we can hopefully, MAKE A PLANT DIAGNOSIS! (*Stephanie Porter*)