

Number 4 - May 14, 2012

Weather & Insect Emergence

The weather over the last week was close to normal for this time of year, except that northern Illinois was slightly cooler. At this point, insect development with growing degree days of a base temperature of 50 degrees F indicates that southern and central Illinois is about two and one-half weeks ahead of the historical average and northern Illinois is about one week early. (*Phil Nixon*)

Emerald Ash Borer

Emerald ash borer was found in three new counties from last fall into this spring. These include rural Farmer City in DeWitt County in September, in Fairbury and at the rest area near Pontiac in Livingston County in February, and in northern Decatur in Macon County in April. The Decatur location is near rail lines. Emerald ash borer adults have emerged throughout the state.

There have been numerous questions and concerns about the interpretation of insecticide label information associated with emerald ash borer. The Minnesota Department of Agriculture published the fact sheet "Emerald Ash Borer Insecticides: Label Guidance for Use Limits" in February 2012 which can be found at

<http://www.mda.state.mn.us/plants/pestmanagement/~media/Files/chemicals/pesticides/eablabeledguide.ashx>

Following are some of the highlights of that publication, along with my own suggestions. These are not to be interpreted as being what can be done legally in Illinois, but they provide reasonable guidelines.

One concern is what is included in acreage when determining whether the per-acre rate of imidacloprid or other pesticides has been reached. The intent of the law in the case of pesticide application refers to acreage over which the applicator or client has control. It should not include a neighbor's property because that would remove the neighbor's right to apply the same pesticide to his property. The acreage includes paved areas, buildings, and bodies of water within the boundaries of the treated area. Do not include large areas of property beyond where the trees are growing.

Right-of-Way areas include street areas if applied by or for the municipality. In these cases, the shape of the acreage is long and narrow and includes the street, sidewalks, and adjacent right-of-way areas owned by the municipality. It includes both the street areas and homeowner property if the homeowner is applying the pesticide or having the pesticide applied through an agreement with the municipality. However, in this

case only the street area abutting the homeowner's property to the middle of the street should be included. Any more area would infringe on the rights of the municipality or homeowners adjacent to or across the street from the homeowner treating the trees. If the area is less than one acre, then the maximum amount applied should be same percentage of the acre rate as the acre percentage. (Phil Nixon)

Hydrangea Leaftier

Hydrangea leaftier, *Olethreutes ferriferana*, has been noticeable in northeastern Illinois and is present in other areas of the state. Damage appears as three or four cupped leaves tied together with silk at the end of a branch at the top of the plant. An attacked plant will typically have ten to twenty of these cupped leaf sets. Pulling the leaves apart reveals a slender greenish caterpillar up to one-half inch long with a blackish head.

This insect emerges in the spring as a small brown and white patterned moth. The white pattern somewhat resembles bird droppings, and thus provides camouflage from bird predation. Eggs are laid on the branch tips of various hydrangea species. Hatching caterpillars web the leaves together and feed on the enclosed flower bud and surrounding leaves. The larvae drop to the ground to pupate in summer to emerge as adult moths the following spring.

Although the amount of damage is relatively minor, the cupped and tied leaves are aesthetically obvious. Control can be achieved by opening the leave

pouch and smashing the caterpillar inside or by removing and destroying infested leaf masses. Forcefully spraying the cupped leaves with a single application of *Bacillus thuringiensis kurstaki* (Dipel, Thuricide, others) or a labeled pyrethroid will also be effective. (Phil Nixon)

Hemlock Woolly Adelgid Found in Nearby State

The Indiana Department of Natural Resources recently announced that the hemlock woolly Adelgid was identified in the state for the first time. This invasive insect was found on a landscape tree in LaPorte County in mid-April.

What does this mean for Illinois?

Although the natural growing range of hemlock trees is just to the east of Illinois, these plants are quite adapted to landscape use and are popular in many areas within the state. Hemlocks make interesting trees in the cultivated landscape. These insects have spread rapidly through the Appalachians, mostly by wind or carried by migratory birds, mammals, and humans. However, infested nursery stock has also carried the insect into some areas. This insect is a concern within the state of Illinois, especially now since it has been confirmed in NE Indiana.

Why is the hemlock woolly adelgid important?

The adelgid feeds on the sap of these trees, which can deplete its essential fluid and nutrient supplies, and produces saliva which contains toxins harmful to the trees. The result of an infestation is defoliation and eventually

death of Hemlock trees within 4-6 years. In instances where infestations are severe, hemlock species can be completely removed from a forest. Because the hemlock woolly adelgid has no real natural predators in the eastern United States, its populations have grown rapidly, allowing it to cause large amounts of damage to hemlock stands. The impact is already clearly visible in the Great Smokey Mountains National Park.

How is the hemlock woolly adelgid identified?

Adelgids are mostly associated with coniferous trees. Hemlock is the primary host, with spruce being a possible secondary (alternative) host. These small aphid-like insects are less than 1/16 in long, black in color, and usually covered in a white puffy wax which progressively becomes thicker during their one year life cycle. The wax serves as a barrier to protect them from predators as well as to keep them from drying out during low humidity. They are usually found in great numbers almost covering entire sections of tree branches.

What is the lifecycle of the hemlock woolly adelgid?

This particular species often undergoes a brief period of dormancy during the heat of the summer but can still be found on the stems of the plant. Adelgids, like many aphids, reproduce parthenogenetically, that is, the entire population is female and undergoes asexual reproduction. It can reproduce in large numbers very quickly. A typical adelgid can produce up to 300 eggs at a time and can reproduce twice in one year. While their populations increase on a tree, growth becomes stunted and

needles begin to fade and fall off the tree. Within a few years a highly infested tree will perish.

Is there a way to manage the hemlock woolly adelgid?

Researchers are investigating the benefits and efficiency of introducing predatory insects into infested areas to serve as a control measure in large forested areas. Other treatments successfully used for individual trees include systemic insecticides, horticultural oils, and insecticidal soaps.

What should be done if you think you have hemlock woolly adelgid?

The hemlock woolly adelgid is not currently known to exist in Illinois. It is very important to identify any potential populations in the state early to eradicate and prevent the spread of this insect. If you believe you have hemlock woolly adelgid please contact Kelly Estes, State Survey Coordinator of the Cooperative Agricultural Pest Survey Program (217-333-1005, kcook8@illinois.edu). (Kelly Estes, INHS)

Anthracnose on Sycamore Makes Them Appear as “Sick-a-more”

Many sycamores are infected with anthracnose in Illinois every spring; however, the intensity and duration of infection is dependent on the weather. Most Anthracnose diseases thrive during cool and wet conditions. In addition, dry winters may stress trees, which can make trees more susceptible to disease.

Sycamore anthracnose actually appears in three rounds (phases).

1. The first is the canker phase, which begins when the host is mostly dormant. Cankers develop most when the host is least able to fight back.
2. In the spring, we see the shoot blight phase. Cankers may kill small twigs at this time, or spores may infect and kill new shoots.
3. Direct infection of new leaves is the leaf blight phase. The 2-week period following bud growth is critical because succulent new growth is most susceptible.

The weather has been ideal for the development of sycamore anthracnose, and it is obvious now on sycamores in central Illinois. Looking at temperatures around the state, one can see that we have been in the serious to less serious range. Not only were conditions ideal for initial infection, but continued cool, wet weather has allowed secondary leaf infection.

- a. For sycamore anthracnose, it has been determined that for the 2 weeks following bud break, an average temperature lower than 55 F will result in a serious infection. Of course, that assumes the presence of rain (water).
- b. If the temperature is 55 to 60 F, the infection will be less serious.
- c. If the average temperature at that time is greater than 60 F, you won't see much sycamore anthracnose. Older leaves, drier conditions, and warm temperatures usually retard disease development.

Sycamores are tough trees and will recover with warmer temperatures. Still, infections cause dieback and cankers that cause unsightly trees with a

lot of twig drop during the season. Anthracnose infection of sycamores can be confused with frost damage. If you are patient and can wait for the second flush of new leaves on infected sycamore, you probably will not see any more anthracnose this year.

We do not usually recommend fungicides for sycamore anthracnose. If you insist on applying fungicide, preventative sprays should be made beginning at bud break. Systemic fungicides are also available. These products injectable and should be applied by a licensed arborist. Raking up and discarding fallen leaves is recommended. Water diseased trees during drought greater than two weeks and fertilize to aid new growth. If you like the tree and want to plant a similar, less susceptible species, consider one of the resistant plane trees. Oriental plane tree is resistant to anthracnose. London plane trees vary in their resistance, so be sure you are buying a resistant hybrid. (*Stephanie Porter*)

Bacterial Blight of Callery Pear

This spring, many Callery pears in Illinois are showing symptoms of Bacterial blight, a disease caused by *Pseudomonas syringae*. This is a weak pathogen known to infect many species of ornamentals, especially when the plants are under stress. Like many bacterial pathogens, it requires a wound or natural opening to enter the plant. *Pseudomonas syringae* is quite common in the environment and can inhabit plants without causing disease symptoms. When symptoms of bacterial blight do occur, they are often seen as: leaf spots, leaf blight, bud blight,

blossom blight, shoot blight and cankers. Symptoms of bacterial blight are commonly mistaken for frost damage or fire blight. Laboratory analysis may be required to determine the true cause of the symptoms.

This year's odd spring weather likely contributed to occurrence of this disease. Several frosts occurred after the Callery pears had leafed out. Frost has been known to predispose plants to infection by *Pseudomonas syringae*. Damage from frost may be more severe when associated with a *Pseudomonas* infection. There are strains of this bacterium that can aid ice nucleation, or ice crystal formation, within plant cells. Essentially, most plants can tolerate brief periods of cooling at temperatures just below freezing. Plants which would normally be unharmed by brief cold temperatures may have frost damage occur when infected with *Pseudomonas syringae*. Bacterial pathogens have also been known to rapidly increase in host tissues affected by frost.

Control options include the following:

1. Avoid high nitrogen applications that produce great quantities of succulent growth in spring or fall. This tissue is most likely to be injured by frost, sudden weather changes, wind, etc; and injured tissue is most susceptible to bacterial infection. Fertilization is a good thing, but it should be balanced and not excessive.
2. Some research in nurseries has shown that pruning trees in the fall and early winter actually increases their subsequent infection by *Pseudomonas syringae*. The suggestion is to prune in January or February. As with fire blight management, prune only in dry weather and be certain to disinfect clippers between cuts with a disinfectant such as 10% Clorox.
3. There is current research with the goal of developing plant cultivars resistant to this bacterial pathogen. Look for mention of such resistance when looking for plants for your landscape.
4. Fixed copper fungicides have been tried with varying success in nurseries with production problems caused by *Pseudomonas syringae*. The compounds are used in the fall to kill the overwintering bacterium before winter injury occurs. Homeowner use of such compounds has not yet been advocated.

(Travis Cleveland)