

Number 8 - June 13, 2011

## **Periodical Cicada**

Large numbers of periodical cicadas were observed to be dead and dying in the Decatur area on June 9. There was still a large amount of male singing and mating was still occurring, but females were also starting to lay eggs. If you have not yet provided protection to young trees, it is time to do so.

Male cicadas die before the females. After the males die, egg-laying by the females occurs in earnest. A reduction in singing by the males makes it easy to notice when this change in behavior occurs.

Periodical cicadas are also subject to a white fungus that covers the abdomen when it is sporulating. The abdomen becomes brittle and can easily break off, releasing a cloud of white spores. Prior to sporulation, the abdomen appears greenish. This fungus appears to cause high mortality in some emergences. The cicadas observed near Decatur and on May 29 in Douglas County did not exhibit indications of high fungus infestation. We have not received any other reports of its high incidence this year either.

Although periodical cicadas primarily insert eggs into twigs less than one-fourth inch in diameter, sufficient numbers can be laid in the trunks of trees less than two inches in diameter to

weaken the trunks enough for them to snap off in heavy winds. The smaller the diameter of the trunks and the higher the number of cicadas, the more likely it is that this will happen. Commercial fruit tree growers commonly plant slender whips that are very susceptible to periodical cicada damage. In the past, Illinois fruit growers have lost up to 90% of their trees in new plantings due to cicada egg-laying damage.

Carbaryl (Sevin) and several pyrethroid sprays kill many cicadas, causing the ground to be littered with dead bodies. However, research tests in ornamental tree nurseries have revealed little reduction in ovipositional damage even though many cicada adults were killed prior to egg-laying. In comparison, fruit tree growers using the same and similar insecticides obtain enough of a reduction in ovipositional damage to allow most trees to survive. Perhaps the difference is that landscape nurseries generally have larger trees that are unlikely to be killed, although they sustain severe aesthetic trunk injury that reduces salability. There is little concern about aesthetic damage to fruit tree plantings, but the trees are smaller, resulting in higher tree mortality without a reduction in cicada oviposition.

Individual trees can be protected by wrapping hardware cloth around the trunk from the ground to the first scaffold branches or higher. The wrap should stand off from the trunk to keep

cicadas from attacking through the screening. The wire thickness and resulting stiffness of hardware cloth makes this relatively easy. Be sure to secure the wrap securely at the base of the tree as cicadas commonly drop to the ground and then walk up tree trunks. Also secure tightly the top of the screening to exclude cicadas from walking down the trunk.

This method of protection is more practical in landscapes than in nurseries where the number of trees can be overwhelming and costly. Protection from ovipositional damage has been achieved in the past with plastic and even paper tree wraps, but those risk increases in borer and disease problems when used during the growing season. *(Phil Nixon)*

### **Japanese Beetle**

Japanese beetle adults were found in Madison County on June 10 by Mike Roegge, Extension Educator. This is a little early for them to appear in the St. Louis area, although they are usually first found in southern Illinois in mid-June. Based on this observation, they are likely to appear in central Illinois during the third week of June and in northern Illinois at the end of June and early July.

Male beetles emerge first and wait for female beetles to emerge. They are apparently able to tell when and where a female is emerging from the soil as they are commonly noticed on golf courses milling about in small areas. Within minutes, an adult female will burrow its way out to be immediately mounted by numerous amorous males. Commonly, there are so many of these

males that a roundish mass of them as large as a golf ball occurs. This phenomenon is called "balling."

Shortly after emergence, the beetles are soon noticed feeding on a variety of trees, shrubs, and other plants, preferring smartweed to most other plants. Monitoring smartweed as well as their balling activity on golf courses are excellent ways to discover early Japanese beetle emergence. Feeding is also heavy on linden, crabapple, birch, birch, rose, and willow, although many other plants are also attacked.

Adult feeding damage is of two types. Window-feeding occurs by the beetles eating the upper leaf surface and center of the leaf, leaving the lower surface intact. The resulting leaf is initially light-colored and semi-transparent, somewhat window-like. The exposed cells of the lower leaf surface soon die and turn brown, resulting in thin, brown leaves. Defoliation occurs from the beetles feeding on the leaf margins, frequently to the leaf midvein. When feeding occurs on both sides of the leaf, only the midvein is left, which soon dries and falls off. The beetles prefer sunny areas, feeding heaviest on the upper sides of leaves at the tops of trees and shrubs.

Japanese beetle adults are three-eighths to one-half inch long, stocky, and metallic green with copper-colored wing covers. They feed on a plant for about three days, and then fly a half-mile or more to a new host. Damaged leaves release odors that are attractive to these flying beetles, and leaves that have been damaged by Japanese beetles release odors that are even more attractive to Japanese beetles. Due to this, prevention of early damage reduces later damage.

Sprays of carbaryl (Sevin), cyfluthrin (Tempo), permethrin (Astro), or other labeled pyrethroid typically provides about two weeks of protection. With the adult beetles being present in damaging numbers for about six weeks, three applications every two weeks provides excellent control. If the client requests only one insecticide application, then the first one will provide the most control.

Similarly if clientele wish to control the beetles through hand-picking, starting when the beetles first appear is the most effective. In late afternoon and evening, a disturbed beetle will fold its legs and drop to the ground. Hold a wide-mouthed jar, such as a peanut butter jar, containing rubbing alcohol or soapy water under the beetle, poke at the beetle, and it will drop from the plant into the jar and be killed. Earlier in the day, disturbed beetles usually fly off rather than drop.

Repeatedly, research has shown that Japanese beetle traps result in more damage to plants near the trap than would occur than if no trap was present. The trap attracts beetles from other areas to its vicinity, but the beetles feed on nearby plants before flying to the trap. However, many people obtain satisfaction from trapping and killing the beetles that do enter the trap, making them feel that they are doing something to prevent damage. (*Phil Nixon*)

### **Trees/Shrubs Seen at the U of I Plant Clinic due to Site Stress**

Hello, my tree has a problem. Now what can I do to fix it? What can I spray on

the tree to make it better? These are common questions coming into the U of I Plant Clinic on a daily basis. We encourage clients to send a sample, so that we can make a diagnosis, and provide management recommendations. But, what if the problem is not related to a disease or insect? Now what? Well, there may not be many options to correct the problem, because it just might be that the tree or shrub has problems because of the site in which they are planted.

Here are some of the site issues that can stress trees or shrubs: improper planting, wrong planting zone, non-native plant species, incorrect soil type, compaction, soil pH too high or low, inadequate fertility, too much shade or sun, too wet or dry, crowded planting, construction after planting, or just not suitable for an urban setting.

There are many diseases of birch that can cause decline or dieback; however no matter what the pathogen may be, it is because the birch is under stress. According to Michael Dirr, in his book, *Manual of Woody Landscape Plants*, most birches do best in well-drained soils, acid, moist, sandy or silty loam soils. He states that he would not plant a river birch (*Betula nigra*) unless the soil pH were 6.5 or below. However, there are some birch species that are more adapted to a variety of soil types and moisture levels, but they will become very chlorotic in high pH soils.

In Illinois, iron chlorosis is common on many tree species, the most common being pin oak. In most cases the soil has plenty of iron for tree growth but our high pH soils bind up the iron making it unavailable to the roots. Iron is available

to plants only as the Fe<sup>++</sup> ion, and is available in that form only when the soil pH is between 5.0 and 6.5. Soils that have high levels of zinc, manganese, or copper also aggravate the iron chlorosis problem. This is also the case with large amounts of limestone or ash, potassium deficiency, or excessive applications of fertilizers high in phosphorus. For more information about iron chlorosis, refer to:

<http://ipm.illinois.edu/diseases/rpds/603.pdf>

We have seen white pine problems in Illinois for several decades. Generally, the white pine is in decline and no disease pathogens, insects, or nematodes have been associated with the decline of white pine. The common problem appears to be root issues, due to heat, drought, flooding, girdling roots, deep planting, high pH, and sudden extremes in temperature and moisture. White pines are understory trees that thrive in the cool, moist, well-drained soils of Wisconsin. They have been found not to do well in clay sites that may be exposed to the elements, so site stress may also be contributing to the decline of these trees. In addition, white pines grow best in a soil with a pH of 5.5

– 6.0; however Illinois landscapes often have a fairly high pH.

Yew is extremely intolerant to even short periods (one to two weeks) of saturated soil. They begin to die back and may even die out completely in some cases. The symptoms are a fairly uniform death of the newest growth, while older leaves showed progressive dieback beginning at the leaf tip. These symptoms, coupled with the presence of excessive soil moisture, often make the diagnosis pretty straightforward: it is "wet feet." In addition, yews do not do well in a location where there can be high winds, extreme heat, and needles can brown or yellow in the winter due to desiccation.

These are just four examples of plant problems that can result because of a site issue. Many homeowners need to assess their site before planting a new tree or shrub. If you need some help with selecting trees or shrubs, the U of I Extension has several good websites that can help. They are as follows:  
<http://urbanext.illinois.edu/treeselector/>  
<http://urbanext.illinois.edu/ShrubSelector/>  
<http://urbanext.illinois.edu/treeselect/>  
(Stephanie Porter)