

Number 6 – May 31, 2011

### **Scouting Watch**

Intermittent colder weather continues to slow down insect development in Illinois. As stated in an earlier issue of this newsletter, most insects do not develop at temperatures below 50 degrees F with slower development when temperatures are below the low 70's degrees F.

With these extended colder temperatures, be sure to verify insect presence if you are using phenology to time control applications. Plants are continuing to develop and bloom whereas some insects are lagging behind.

This can be used to your advantage. A number of insect pests are staying in stages where they are susceptible to control longer, allowing more time to apply control measures. Another factor is that the cooler temperatures and wetter weather is conducive to fungal diseases of insects providing more control than usual. However, these conditions are also likely to result in an increased effect of other fungi that are diseases of landscape plants. (*Phil Nixon*)

### **Periodical Cicada**

Periodical cicadas have emerged in those areas of the southern half of Illinois where it was expected. This is the Great Southern Brood, Marlatt's XIX, which is a thirteen year brood. An ex-

tensive article was published in the May 2, 2011 Issue 2 of this newsletter.

The male cicadas sing for two to three weeks, which is when mating occurs. After two to three weeks, the males die, and the females then start laying most of their eggs. Protect young trees with trunk diameters of two inches and smaller with tubes of hardware cloth. The screening should be one-quarter inch mesh or smaller in order to exclude the cicadas. Make sure that the mesh is tight against the tree at the top and bottom. As periodical cicadas primarily crawl upwards, be particularly attentive to the bottom of the collar. The mesh tubes should stand away from the trunk so that cicadas are unable to stick their ovipositors through the mesh and into the tree. (*Phil Nixon*)

### **Emerald Ash Borer Control**

This is an ideal time to apply systemic insecticidal controls for emerald ash borer. Movement of systemic insecticides in a tree relies on transpiration, the loss of water from the leaves primarily through the stomata, resulting in a pulling of replacement water from the soil and up the trunk, bringing systemic insecticide with it. At this time of year, ash leaves have expanded and are very active in photosynthesis, resulting in high levels of transpiration. Although movement into the tree is perhaps quickest at this time of year, application of systemic insecticides

is recommended whenever active leaves are present for four to six weeks after application. Realize that in the fall, an abscission layer forms near the base of the leaf petiole before leaves turn to fall coloration, greatly reducing the flow of systemic insecticides in the tree until the following spring.

Continued research reveals that a very important mechanism of controlling emerald ash borer is killing the adult beetles when they feed on the leaves. Spraying the foliage when adult beetles are present with a contact insecticide results in a very significant reduction in larvae within those trees later in the growing season. Suggested insecticides include bifenthrin (Onyx), carbaryl (Sevin), cyfluthrin (Tempo), or permethrin (Astro). These insecticides require annual application to the entire canopy. In many landscape situations, this spraying of tall trees will not be acceptable to clientele.

It is appearing that adult beetle mortality may be the most important control mechanism with annual application of systemic insecticides such as imidacloprid (Merit, Imicide, Xytect, others) and dinotefuran (Safari). Treated trees reveal reduced larval populations but few dead larvae in their feeding tunnels. Imidacloprid is effective when applied as a bare soil drench, soil injection, or trunk injection. Dinotefuran is applied as trunk surface spray application.

Emamectin benzoate, sold as Tree-Age, is still considered to be the most effective insecticide in the control of emerald ash borer. Continued research reveals apparently high beetle mortality resulting in fewer larvae combined with a high percentage of dead larvae in their feeding tunnels. Research continues to show

high levels of control with application every two years. This increased level of control over any other proven insecticide makes it the choice for active infestations involving heavy beetle attack.

Foliar sprays as well as imidacloprid and dinotefuran applications will provide acceptable control when beetle numbers are low. They are effective preventative control options as well as when the beetles are just entering the neighborhood and when most untreated trees have died in a neighborhood.

Azadirachtin, sold as TreeAzin 2, has been shown to be effective in controlling emerald ash borer when injected into trees up to two inches dbh (diameter breast high). The insecticide was found at effective levels in the leaves of injected ten inch diameter ash, but these trees were not evaluated for larval control. Azadirachtin is an insect growth regulator, being primarily effective against developing larvae. Even though it moves into the leaves of injected trees, it does not kill adult beetles feeding on the foliage. Even though TreeAzin 2 is promoted for application every two years, annual application appears most likely to provide the best control. Too little research has been conducted for it to be recommended as a control option for Illinois. However, with its source being the neem tree, it is the only organic insecticide available that has shown any meaningful control of emerald ash borer. (*Phil Nixon*)

### **New Disorder of Spruce in Illinois: Sudden Needle Drop of Spruce (SNEED)**

The University of Illinois Plant Clinic has received spruce samples from both cen-

tral and northeastern Illinois that have been diagnosed with Sudden Needle Drop (SNEED) caused by *Setomelanoma holmii*. While SNEED has been found in several surrounding states, this is a first find in Illinois. We are pursuing independent identification since this is a first find as well as proceeding with qPCR analysis for verification.

SNEED has been found on Norway, white and Colorado blue spruce trees. Symptoms of SNEED are yellowing and eventual browning of older needles. Typically, by the end of summer, all of the needles on affected branches fall off except the newest needles on the tips of the branches. Symptoms being noticed now in the spring are nearly defoliated branches that may still have a few brown or half brown needles attached or no old needles and just new bud growth. Branches affected by needle drop may be scattered throughout the tree or the entire tree may be affected.

Unlike our other common fungal needle cast diseases the fungus doesn't produce fruiting structures on the needles. While spruce needles don't show signs of fungal infection, the twigs will have numerous small black fruiting structures (pseudothecia). They are not lined up in any particular pattern. According to diagnosticians in Missouri, the fungus produces pseudothecia early in the season until about July. Then another type of fruiting structure called a 'pycnidia' produces small clear spores called 'micro-conidia'. We have found both pseudothecia and the probable micro-conidia on our samples in May.

Although, the fungus is found infecting symptomatic trees there is still a question whether it is a pathogen. It may indeed be

a pathogen or may simply be a fungus taking advantage of a tree stressed by drought, heat, poor planting or other environmental factors. Researchers at the University of Wisconsin are pursuing pathogenicity tests with the fungus to verify or negate it as a pathogen.

To help with field diagnosis for sampling, note that SNEED fruiting structures will not be on the affected needles. If you do see fruiting structures on the needles of a symptomatic spruce, you are most likely looking at either *Stigmina* <http://hyg.ipm.illinois.edu/article.php?id=31> or *Rhizosphaera* <http://hyg.ipm.illinois.edu/article.php?id=13> or another fungal needle cast. A tree can have just one of these needle casts or two or more.

Management recommendations are sparse; Bruce D. Moltzan of the Missouri Department of Conservation indicates that fungicides for control of *Rhizosphaera* needle cast can provide control in nurseries and smaller landscape trees.

For more information contact Suzanne Bissonnette, University of Illinois Plant Clinic 217-333-0519. (*Suzanne Bissonnette and Diane Plewa*)

## **Peach Leaf Curl**

Peach leaf curl seems to be prevalent this spring. Mike Roegge, Educator in Adams/Brown Unit has received several questions about this disease and I have confirmed an infection of peach leaf curl on a peach tree in Montgomery County. Reports of this disease are not surprising, as this pathogen favors cool, moist weather.

The causal fungi (*Taphrina deformans*) will over winter in buds and twigs, and if environmental conditions are favorable, will infect leaves and flowers anytime during bud swell to bud opening. It is possible that the recent, cool temperatures after budbreak, could have caused peach buds to take a longer time to open than usual, which allowed a larger window of opportunity for fungal infection.

Unfortunately, peach leaf curl is one of the most common and widespread disease of peaches or nectarines, but also can infect some ornamental *Prunus* species. Peach leaf curl can also occur, although rarely, on cherry and plum.

The good news is that this disease is not likely to kill the tree; however, leaf distortion and blister-like growths or puckering of the leaves are common. The leaves are often thickened and almost crisp; they turn downward and inward and may become red or purple. Infection can cause early leaf drop. Peach trees that show signs of leaf infection will have infection of fruit. Fruit growers are often concerned with reduced fruit quality due to this disease. If repeated infection to tree occurs, they can become weak, which may make them more susceptible to winter injury and other diseases.

Luckily, peach leaf curl is a monocyclic disease and secondary infection will not occur. The leaves will pucker and curl, spores will form on the leaves and fruit (peach fruit), and leaves will fall. Peach fruit will be shriveled and drop early. Then infected species will form new leaves that will not be infected.

If your tree is affected, it is too late for a fungicide application. If you are seeing

this disease in your peaches, mark your calendar next year to spray lime-sulfur (Dormant Disease Control) before buds swell in the spring. Please note that if you apply lime-sulfur to green foliage, it may cause severe burn. After previously consulting, on several occasions, with Dr. Elizabeth Wahle, Extension Specialist, Horticulture, I have learned that she strongly encourages anyone growing peaches in Illinois to follow a spray schedule. If you would like to have a copy of the U of I recommended spray schedule for peaches (nectarines, apricots, plums, and cherries), it can be found on Table 5, on page 146 of the Home, Yard, and Garden Pest Guide.

If you happen to have an infected ornamental *Prunus*, you can apply calcium polysulfides, chlorothalonil, copper, or copper sulfate before buds start to swell next year. For additional information, you can refer to RPD 805: <http://ipm.illinois.edu/diseases/rpds/805.pdf>

Growers and homeowners can help their trees by applying fertilizer now; however be careful not to over fertilize. This will help the tree produce new leaves and allow it to go into dormancy in late summer. (*Stephanie Porter*)

### **Storm Damage? Friendly Reminder about Moving Firewood**

The recent storms that have swept across the state have left destruction in their wake – including downed trees and limbs. I'm sure there will be lots of activity in yards across the area in the coming days. But, are you aware of the dangers associated with invasive species and moving this debris?

There are many invasive insects and diseases that are found in firewood-- gypsy moth, emerald ash borer, Asian Longhorned beetle, and thousand cankers disease are just a few. While they may not move far on their own, when people move firewood and debris, they can move hundreds of miles. This aided movement can spread these pests to areas where they were not present before.

By regulating the movement of firewood and forest products, we hope to prevent and slow the spread of these insects and diseases. The presence of emerald ash borer in the state of Illinois has changed how firewood and forest products can be moved within our state. State and federal quarantines regulate the movement of invasives in commercial forest products. The federal government has [quarantined the entire state of Illinois](#), making it illegal to move ash products (ash trees, parts of ash trees) as well as all hardwood firewood outside of the state without federal certification.

But there is also a quarantine within the state boundaries. This limits the movement of firewood and wood products between certain counties. The state of Illinois has [quarantined infested areas](#)

[within the state](#), making it illegal to move these materials out of those infested areas. Much of the public is unaware of the current boundaries of this quarantine. Remember, these laws are not in place to make things difficult, they are in place to help preserve our trees and natural areas! It often takes several years for infestations to be recognized. Trees may appear healthy, even though they are harboring harmful pests. By not moving them great distances, the chances of spreading invasive pests decrease.

Also, if you are cleaning up fallen ash trees, take a look for [signs and symptoms](#) of the emerald ash borer. Emerald Ash Borer Awareness Week is May 22-28, 2011. This invasive insect is continuing to be found in Illinois counties. Last fall, it was confirmed in Champaign County in the city of Rantoul. Adults begin emerging from ash trees at the end of May. EAB activity will soon begin in many areas of the state. Keep an eye out for [these metallic green beetles](#) that emerge from ash trees, leaving D-shaped holes.

Visit the [Illinois CAPS blog](#) for all the latest news on invasive pests in Illinois or contact Kelly Estes ([kcook8@illinois.edu](mailto:kcook8@illinois.edu)) with any questions. (*Kelly Estes*)