TPM/IPM Weekly Report for Arborists, Landscape Managers & Nursery Managers University of Maryland Cooperative Extension

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Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)
Weed of the Week: Chuck Schuster (Extension Educator, Montgomery County)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
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Please call us if you are a commercial horticultural business finding insect, disease, weed or cultural plant problems in the landscape or nursery. Send submissions to Sklick@umd.edu or call Stanton Gill at 301-596-9413.

Emerald Ash Borer Found in Northern Virginia

Scott Bates, Bartlett Tree Experts, called to let us know that Josh Darkow, a Bartlett Tree Experts technician, found a cluster of green ash trees at a condominium site they maintain in Springield, VA that had heavy damage from emerald ash borer. The adult beetles were emerging from holes in the tree. The Virginia Department of Agriculture and Ms. Adria Bordas, Fairfax County Arborist, were notified by Jeremy Hager. An announcement was made on the radio and printed in *The Washington Post* letting the public know of this new sighting last week. The radio broadcast mentioned that emerald ash borer was also found at a second site in Hernon, Virginia.

The Virginia Department of Agriculture and Consumer Services issued a news release: Virginia Quarantines Movement of Ash Trees and Products from Fairfax County. You can view it at http://www.vdacs.virginia.gov/news/releases-a/071608eab.shtml

White Marked Tussock Moth – *Orgyia leucostigma*

David Lubman, State Highway Administration, sent in this picture of a white marked tussock moth, *Orgyia leucostigma*. It feeds on apple, birch, black locust, elm and hackberry and several other species. They are beautiful looking but completely harmless and you do not need to control them.

Thank you to the Maryland Arborist Association, the Landscape Contractors Association of MD, D.C. and VA, the Maryland Nursery and Landscape Association and FALCAN for your financial support in making these weekly reports possible. Photographs by Suzanne Klick, Stanton Gill or Shannon Wadkins unless otherwise noted.

Leaf Crumpler – *Acrobasis indigenella*- Attacking Cotoneaster

Anne Brooks brought in a very interesting sample last week. She had a cotoneaster plant with strange-looking webbing made up of caterpillar silk, frass, and old plant material form the cotoneaster. This is a messy silk housing for the leaf crumpler – great name! Its Latin name is *Acrobasis indigenella.* This leaf crumpler was reported to be a pest in apple and cherry orchards before synthetic chemicals were used. It is mainly a problem on ornamental plants now. Cotoneaster is a common host for this pest but it can be found on crabapples, pears, hawthorns and pyracantha. We found pupal cases in the webbing and the adults are out and active this week in Maryland. They will lay eggs on susceptible plants in July. The early instar larvae will feed as skeletonizers while the older larvae will consume whole leaves. The larvae will construct silk webbing, like a miniature bagworm, and attach old leaves and frass to the bag. The bag is quite ugly looking. Examine cotoneaster and pyracantha for the small caterpillars that are skeletonizing the foliage in July and August. **Photo by David Clement**

Control: Bt applied when caterpillars are feeding or use Conserve.

Japanese Beetles

We are receiving more and more e-mails and calls reporting increasing Japanese beetle adult activity in different parts of the state this year. They have been mainly on favored crops such as roses, grapes, zinnias, little leaf linden (photo), goldenraintree, and ornamental plums. We continue to predict that Japanese beetles will be making an even bigger comeback in 2009.

Ambrosia Beetle- 2nd Generation in Nursery in Maryland

A nursery grower from central Maryland called in to report that they found fresh frass tubes projecting from a fringe tree this week. Unfortunately, he destroyed the tree before we could extract the beetles for identification. If you see frass projecting from trees please call and let us know. We are trying to determine if ambrosia beetle is a problem in nurseries with the second generation.

Gypsy Moth

Dave Keane, Howard County Government, reported that female gypsy moths were laying eggs on pin oaks in Libertytown this week.

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Puss Caterpillar

We received a report that puss caterpillars, *Megalopyge opercularis,* are defoliating American hollies on the Eastern Shore at a site in Dorcester County. Usually, in Maryland, this caterpillar is not a problem. However, we did have a report of a heavy infestation on the Eastern Shore in Kent County in 2006.
Monitoring: This caterpillar has long hairs which vary from yellowish to brown to a grayish color. These caterpillars are generalist feeders (polyphagous) and can be found feeding on elm, hackberry, oak, sycamore and American holly. Two generations are reported to occur annually.
Control: If found in significant numbers, you can use Spinosad (Conserve), Acephate (Orthene)

Indian Wax Scale

Last week while we were conducting the Salisbury IPM Pest Walk Paul Wolf found a blue holly with Indian wax scale that was just starting to produce crawlers. The Salisbury area is a few degree days ahead of central Maryland. This week I (Stanton) found Indian wax scale in Carroll County that were not producing crawlers yet but the females were loaded with eggs. Use a hand lens when looking for crawlers because they are very small. They are usually found on the twigs and not on the foliage. Monitor holly, camellia, barberry, and pyracantha.
Control: When this scale comes into the crawler stage, use the IGR Distance. Back in 2001 we conducted a trial using soil applications of imidacloprid for Indian wax scale. It takes 30 - 60 days to uptake, but long term it gave good control of Indian wax scale.

Aphids on Crape Myrtle

Dave Keane found aphids on crape myrtle in Libertytown. There is a species of aphid, the crape myrtle aphid, which is only found on the crape myrtles. This aphid is pale yellowish green in color and has black spots on the abdomen. Look on the foliage for sooty mold growing on the honeydew that is secreted from the aphids. Usually these aphids are not found in high enough numbers to warrant chemical control and predators such as lady bird beetles and lacewings are able to keep the populations down.

Two-Banded Japanese Weevils Adults

Wanda MacLachlan brought in adult Japanese weevils this week which were feeding on snakeroot (*Cimicfuga).* Adults feed on foliage and cause notching damage. The adults feed on several species of plants. The larvae feed on roots of plants.
Control: Acephate (Orthene) can be applied to the foliage. Imidacloprid can be applied as a soil drench.

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Rose Midge

We had a report of rose tip midge last week. It is a very difficult insect to control. Robin Rosetta, Oregon State University, and Janice Elmhirst, Elmhirst Diagnostics and Research in Canada, have done research on controlling rose tip midge. Robin Rosetta mentioned in an e-mail that the American Rose Society is reporting that the rose tip midge is increasing as a pest on roses. More information on this insect and the results of their work are available on Oregon State's website at http://oregonstate.edu/dept/nurspest/rose_midge.htm

Quince Rust

Steve Sullivan, The Brickman Group, brought in a plant sample with a great infestation of quince rust this week. It was one of the heaviest infestations we have seen this season. At the Salisbury IPM Pest walk one alert attendee found rust on the fruit of a Bradford pear. Rust is on a lot of plants this year since May was so rainy and ideal for disease transmission.

At the IPM scouts' session this week, a participant brought in a sample that from a distance looked like it could be a rust disease. On closer inspection, we could see that they were adventitious roots growing along the stem.

Comment on Tick Information from July 11th Report: Phil Normandy sent us the following information to show how Lyme's disease can follow different patterns.

I was bitten by a large tick (looked too big to be a deer tick but I didn't key it out) the 3-4th week of April while doing invasive removal in a park. I was wearing long pants but not tucked. I found it adjacent to my right knee the next day. It was only partially attached so I pulled it off, and made a mental note to check the site. The next day there was a faint red ring just at the border of the bite that looked strange, so a few days later I had the tests done. (There are two; the usual one has been known to give a lot of false negatives; ask for both). They came back negative so I thought nothing more about it. No bull's-eye developed and the ring went away in a few of days.

Four weeks later, I woke up in the middle of the night with a high fever that left me with heavy chills, sweats, and body aches all over. I took fever-reducers for 4 days and could function, but when they wore off in the night the fever returned quickly. The last night before going to the doctor it was at 103.5! But at no time during this was my appetite or digestion affected; I was

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baffled. The doctor asked a lot of questions, whose answers translated into 'normal', and then she asked about a rash. Thinking a rash would itch or burn, I said no. The she found the back of my right shoulder covered in the classic bull's-eye as shown in Steve's report! It was dramatic but painless. I got retested and it came back highly positive. I was prescribed the 3-week antibiotic treatment, and within 2 hours of the first pill the fever vanished.

Lessons learned: 1) Tests may not show anything until 4 weeks' incubation has occurred. Wait, if no serious symptoms; 2) Rash may not show up immediately, nor other effects. Rash may never show up, and can occur in a different place than the bite: 3) Don't wait when high fevers with aches occur; get tested and get meds: 4) Meds may make you even weaker than fighting the infection alone, and it may be a few days after you finish them that your energy returns: 4) Tests will remain positive for some time after the infection is defeated.

Beneficial of the Week, Brian Clark

The bald-faced hornet is another of our beneficial insects that have gotten a bad rap. I mean, when you drive a golf ball through their home, or come a few inches away with a gas powered pruning shears, why would they send out 200-300 angry workers?

The first photo is a nest near the main door of our office. The queen and her daughters have been busy since early May with no reported stings or harassing maneuvers…unless you stick a camera 6" from the nest and fire off flash photography. But hey, the good news is their stings are less likely to send you into anaphylactic shock than a bee sting, it just hurts more. Most people walk by and don't even know it's there until it's pointed out to them.

Bald-faced hornets not true hornets, but are actually a species of aerial nesting yellowjacket. They are generalist insect feeders that consume many pest insects. They occasionally feed on nectar and have the potential of being minor pollinators. Since these members of the Vespidae family are hunters and not scavengers, human contact is often limited to areas around the nest.

If control is necessary, use an approved chemical for colony elimination or work with a pest control company to have them "on call" to deal with nests hidden in the landscape. For work around buildings, I prefer carbaryl dust. For areas in the landscape, any of the synthetic pyrethroids work well. **Photos by Brian Clark**

***Dolichovespula maculate* worker "defending" nest**

***Dolichovespula maculate* nest hidden in Foster's holly near shrub being sheared**

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Weed of the Week, Chuck Schuster

This week, the weed of the week will take a new angle. What really is a weed? Generally speaking, a plant out of place, but in some cases even more. Many of us look to our gardens to find plants or fruits and vegetables that we can add to our meals. Many wonderful plants grow in our gardens and are enjoyed because of their freshness. In the last week one community had a scare that causes us to be concerned about some of the foods we eat.

Not everything that grows in the yard or garden can or should be eaten. In this case a cook selected some plants from the yard that potentially could have been fatal. Jimsonweed, *Datura stramonium*, is a summer annual found throughout much of the United States, more often in pastures and agronomic settings than in landscapes or nurseries. It will grow erect to several feet in height. This plant has an unpleasant and distinctive odor. The cotyledons will have a midvein, being as long as two inches in length and one half inch in width and will have an untoothed margin. The stem will be maroon or purple in color. Mature stems will be thick and smooth. Leaves after the first true leaves will have a toothed margin and will be up to eight inches in length and three to five inches in width. Each leaf will be attached to the stem with a stout petiole. The root system is a strong branched taproot system. Flowers are white to purple and horn or trumpet shaped. The fruit is egg shaped and has many spines. This plant is very poisonous, and can even have harmful effects when plants are cut using string trimmers and the plant juices get on exposed skin. This is only one of several plants that can be found growing wild in the landscape and/or garden areas. Another plant that in the nightshade family (Solanaceae) that can be harmful is black nightshade. Horse nettle, potato and common nightshade are in this family as well. These plants can often be found growing in landscape or other areas. Not to be mistaken for commonly used herbs, these can also be harmful to humans. Even some plants we know can be eaten have poisonous parts, like the rhubarb plant. While the stem can be eaten the leaves can be fatal.

Take time to know the plants that you are considering adding to your diet. Not all plants are good for us. When in doubt, ask or seek professional advice. A very good website to use is http://www.ansci.cornell.edu/plants/alphalist.html.

Photo Courtesy of Virginia Tech Weed ID Guide

pH and Potting Media, Andrew Ristvey

Questions about liming potting medium have come up recently. This is an important issue that needs to be addressed in your nursery if you are creating your own mix. Your potting soil or substrate is not really a true soil and apart from sharing a few physical traits like providing a place for roots to grow, there is very little chemically and physically that they have in common. I have always written about the importance of monitoring your substrate for electrical conductivity and pH. But what should you be doing about pH before you place your plant in the container? This is a complicated answer. Most important is that you have a goal for what ever plants you are growing. It is often recommended that your substrate have a pH of between 5.5 and 6.2. Why so

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low? Without getting too complicated, the organic materials you use to make your substrate are chemically different than a mineral soil. Your plants will rely on you supplying most if not all of the 14 essential mineral nutrients so not to limit growth. The availability of many of these nutrients is determined by the pH of the substrate. The recommended pH optimizes nutrient availability. Too high a pH and nutrients like iron and manganese are not available to the roots, causing a deficiency. Too low a pH and the same nutrients can become too available, causing toxicities or preventing the uptake of other nutrients.

Adjusting the pH of your home-made substrate before planting may or may not be necessary. The most commonly used substrate amendment apart from fertilizer is lime. Lime adds calcium carbonate and dolomitic lime adds a little magnesium with that calcium to your substrate. Apart from supplying calcium and magnesium to your plants, lime can increase the pH of your substrate and most importantly will act as a buffer, reducing the potential for large pH swings. Various recommendations have been cited by those who add lime to their homemade mix, but without knowing the whole story about your nursery, a blanket recommendation is hazardous at best. First and foremost, your irrigation water must be tested to determine the alkalinity or the amount of bicarbonates and carbonates. Without this information first, no recommendation should be made. A good level is between 50 and 80 ppm (1 ppm = 1 mg/l) with a little room for play. If your irrigation water has alkalinity of 120 ppm or greater, I would not recommend the use of lime in your substrate or I would be very sparing. However if your alkalinity is much below 50, then there are other factors to consider, like what type of fertilizer you are using, what plants you are growing, and what materials you are mixing for your substrate. Pine bark usually is relatively acidic, and the fresher it is the more acidic it is. Try to insist on a well aged or composted pine bark from you supplier, when the pH will have stabilized.

Interestingly, most of the recent research has shown that liming substrates decreases growth compared to adding just micronutrients or that adding more than 5 lbs of lime per yard of substrate reduces plant growth. Another recent recommendation is the type of particle size you use. Recent studies have shown that a long lasting granular lime is better than pulverized lime (which does not last long in your container). In one study, 5 lbs per yard of granular lime had the best affect on growth of juniper compared to pulverized lime, if lime was used. However in the same study, no lime addition also proved as effective as 5 lbs of granular per yard. Still other researchers are not convinced of the effectiveness of lime. In my opinion, each nursery will need their own recommendations based on the factors listed above. Your experience is the most valuable information you can use to determine the best course of action. If you are not having pH problems, then don't fix anything. However, if you are, then you must gather all the facts to determine your liming rates. I would recommend the use of granular lime (solely or mixed with pulverized) to give persistent and steady pH balance, but be careful of over-applying. You can contact me for more information on your situation.

Degree Day Information (as of July 17):

Baltimore, MD (BWI)	1776	Dulles Airport	1765
Hagerstown, MD	1633	Mechanicsville, MD	1664
National Arboretum	1939	Reagan National	2159
Salisbury	1706		

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