Commercial Horticulture

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Coordinator Weekly IPM report:
Stanton Gill, Extension Specialist, IPM for Nursery, Greenhouse and Managed Landscapes, sgill@umd.edu. 301-596-9413 (office) or 410-868-9400 (cell)

Regular Contributors:
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists)
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)
Fertility Management: Andrew Ristvey (Regional Specialist, Wye Research & Education Center)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

A New Address for the IPMnet Website
University of Maryland Extension made changes to its website this spring. Now, the IPMnet site is at a new address which is http://extension.umd.edu/ipm. The IPM alerts and conference information will be posted at this new location. The old address of ipmnet.umd.edu will be up for a little longer, but new information will not be added to it.

We’re Looking for Brown Marmorated Stink Bugs for Research
We are in need of large numbers (500 +) of live Brown Marmorated Stink Bug (BMSB) adults to collect for our on-going research projects. Please contact Nancy Harding at nharding@umd.edu or 301-717-9524 (cell) if you are seeing large numbers of BMSB and let her know where we could send out our team of collectors.

BMSB is hatching now...
Richard Chaffin, The Brickman Group, reported egg hatch on June 4 in Catonsville. Marie Rojas, IPM Scout, found her first batch of eggs hatching in Laytonsville this week.
Greater Peachtree Borer, *Synanthedon exitiosa*
Every year in June and July we get calls about cherry trees producing huge amounts of sap that harden on the trunk of tree. It is usually on the main trunk or at the base of the tree. One of the common causes of this sap oozing is from activity of the greater peachtree borer. The greater peachtree borer (Family Sesiidae-clearwing moths) is native to North America. It seems every other pest we report anymore is from areas of Asia, but this one is native. This borer usually is found infesting weakened native cherries in uncultivated areas.

The peachtree borer can cause serious damage to peach, cherry, plum, nectarine, and apricot planted in your customers’ landscapes. One other plant we commonly see damaged by peachtree borer is cherry laurel. This plant is everywhere in commercial landscapes and often the plants are stressed from growing in poor soils or soils that are not properly irrigated (either too much or not enough water). The damage is caused by the larval stage as the larvae feed in the cambial tissue of the tree. Larvae can tunnel into the roots and lower trunks of the hosts and feed on the growing tissue and inner bark. Young trees may be completely girdled, and older trees may have their crop-bearing capacity greatly reduced. Peachtree borer infested trees may turn yellow and eventually die as the larvae girdle the tree at the crown. If you can dig the larvae out of the trunk it will be a creamy white color with golden colored crotchets (hooks) in parallel lines on each of the prolegs. The insect has a one-year life cycle in the tree and adults emerge out around 570 degree days. Many areas have reached this benchmark at this point in the season.

**Prevention is Key to Control:** Keeping trees healthy and avoiding stressing trees is the best way to prevent problems with peachtree borer. Avoid wounding the base of the plant and certainly avoid removing sucker shoots at this time of year since this gives a wound site to attract the peachtree borer. Trees growing in heavy, poorly drained soil and extremely dry sights are more likely to have problems with peachtree borer infestations. If preventative insecticides are applied to the trunk then now is the time of year to apply them. There really is not much labeled for home fruit bearing trees to prevent borers. Ornamental cherry, plum, apricot and cherry laurel can be treated with bifenthrin (Onyx) or Permethrin (Astro).

**Japanese Beetles**
In digging in soil in Olney we found mainly late instar larvae present on June 2 and a few pupal stages of Japanese beetles. One adult was found on crabapple here at the research center in Ellicott City on June 6. We should start to see emergence of adults in the next week or so. If you find adult Japanese beetles (look for them on roses and grape vines), let us know. Send an email to sgill@umd.edu

**Progress in Biological Control of Emerald Ash Borer**
The Canadian Food Inspection Agency just approved release of two parasites of emerald ash borer in Canada. The two Asian wasp species now approved by the CFIA are *Tetrastichus planipennisi* of the eulophid family and *Spathius agrili* of the braconid family. The Eulopid wasp lays eggs into the larvae of emerald ash borer and acts as internal parasite. Both species have already been introduced in Michigan with favorable results. This biological control is probably one of the best long term control methods for dealing with this invasive borer.
Scale Updates

Oak lecanium scale (soft scale): Monitoring of oak lecanium scale on pin oak on Thursday in College Park found high populations where ~ 90% of the eggs had hatched, the majority of the first instars were crawlers, and a small proportion had settled onto the underside of the foliage. Degree days in College Park as of June 5 were 953 DD. Paula was also seeing parasitoid larvae under some of the females so there is natural enemy activity too. We received additional reports of crawlers: Richard Chaffin, The Brickman Group, found them on June 4 in Catonsville and Jeff Schwartz, Ashton Manor Environmental, found them in Howard County this week.

Monitoring: Check the degree day accumulations in your area. If they are close to 953 DD you should look (using a hand lens) for: active crawlers on the branches; active crawlers and settled first instars on the leaves; flip the female scale bodies over and determine if she still has eggs under her or if the eggs have hatched. If the majority of the eggs have hatched / are crawlers and settled firsts (as we are seeing in College Park) it is time to apply a pesticide. For optimal control, under these conditions, applications should be applied within the next 7-10 days.

Control: Distance or Talus (IGRs) are preferred, pyrethroids should work but are harder on natural enemies.

White prunicola scale (WPS, armored scale): Monitoring WPS populations on cherry trees on Tuesday June 4th in Laytonsville found settled crawlers (1st instars) and 2nd instar adults. Degree day (DD) readings in Laytonsville as of June 4th were 656 DD.

Control: Once all WPS scales reach the 2nd instar adult stage they are hard to control. Therefore, you should consider applying a control sooner than later.

Japanese maple scale (JMS, armored scale): Monitoring of JMS in Laytonsville on Tuesday June 4 found a lot of adult females with eggs, but NO crawlers at this time. Degree day (DD) readings in Laytonsville as of June 4th were 656 DD. We expect to see crawlers soon and will continue to monitor to let you know when they are active.

Juniper scale (armored scale): Monitoring of juniper scale found crawlers are in full swing this week in Keedysville. Crawlers are out and starting to settle at 706 DD. Of the 40 scales checked, 23 were alive and 13 were dead. (However, some dead female scale had a few live eggs under cover). There were 22 crawlers and 12 settled 1st instars observed, and four (4) scales were parasitized.

Indian wax scale (soft scale): Monitoring of Indian wax scale on June 3 in Columbia (590 DD) found seven samples pulled have eggs, but no crawlers yet. Three had no eggs and the females under the covers were dead.
Gypsy Moth Activity
Teri Batchelor, Maryland Department of Natural Resources, reported that Brian Young, Special Rivers Forester, verified there is a 2-acre severe gypsy moth defoliation site on Kent Island. It is the first in 19 years that she has seen them in Kent/Queen Anne’s counties. John Smithmyer, Bartlett Tree Experts, sent in a photo of a blue spruce in Elkton that was heavily damaged by gypsy moths.

Leafcutter Bees
On a rainy Friday morning, a person brought in an interesting sample. It was rolled up leaves that were rolled like a cigar. Inside the leaf tissue was packed with pollen and an egg. The egg was from a leafcutter bee. In June, we often get samples of roses that have perfectly scalloped cuts removed from the foliage which is usually from the activity of the leafcutter bee gathering leaf tissue to shape into its nest. Although they cut many types of leaves, leafcutter bees prefer certain types, notably rose, green ash, lilac and Virginia creeper. This injury often is only a minor curiosity. After the nest is selected the leafcutter bees collect fragments of leaves to construct individual nest cells. The bees cut leaves in a distinctive manner, making a smooth semicircular cut about 3/4 inch in diameter from the edge of leaves.

Leafcutter bees carry these cut pieces of leaves back to the nest and use them to make nest cells within the previously constructed tunnels. Then, they provision each leaf-lined cell with a mixture of nectar and pollen. The female lays an egg and seals the cell, producing a finished nest cell that somewhat resembles a cigar butt. A series of closely packed cells are produced in sequence. A finished nest tunnel may contain a dozen or more cells forming a tube 4 to 8 inches long. The young bees develop and remain within the cells, emerging the next season. This is an interesting insect in the landscape and one that does not need to be controlled. In fact it is a great pollinator.

Periodical Cicada Update – Brood II
The activity from Brood II cicada in St. Mary’s county is evidently winding down. We received this report from Peggy Milliman, Friendship Forest Christmas Tree Operation in Oaksville, Maryland (St. Mary’s County). She reported on June 5 that “it’s getting quiet and only a few dead bugs to pick off here and there. I imagine the season is wrapping up.”
Privet Rust Mite
You have to have good eyes to pick up these small mites feeding on the undersides of private foliage. What caught Steve Sullivan’s (The Brickman Group) eye was that the California privet in Catonsville was half defoliated. When you look at the undersides of the foliage with 20 - 30 magnification you will see a sausage-shaped mite called a privet mite. These mites are cool weather mites and have been feeding for the last couple of months on the foliage. The cool wet spring has been perfect for this mite. As we move into the heat of the summer, the activity of these eriophyid mites generally dies down. They will become active again when it cools down in fall.

**Monitoring:** Look for these elongated mites with four legs on the undersides of foliage. Use at least 20 X magnification to see the mites.

**Control:** Abamectin (Avid) or horticultural oil at 1 % summer rate will control these mites.

Spruce Spider Mite
We are also receiving reports of spruce spider mite activity. This mite is another cool season mite and has been active on junipers.

Wool Sower Gall
Wayne Noll, City of Rockville, sent a photo of wool sower gall which is caused by secretions of the grubs of a small gall wasp, *Callirhytis seminator*. Generally, wool sower gall is specific to white oak and only occurs in the spring. The galls contain seed-like structures. The gall wasps develop inside these structures. It’s harmless and you do not have to do anything.

Assassin Bugs
Jenn Rodriguez, Ruppert Landscape, and Crystal Mutzabaugh, Good’s Tree Care, sent in photos of recently hatched assassin bug nymphs. These bugs are general predators that feed on a variety of other insects and insect eggs in the landscape and nursery.
Camellia Leaf Gall
Bill Miller, The Azalea Works, sent in a series of photos of the camellia leaf gall on *Camellia oleifera* ‘Snow Flurry’. We reported on this gall in the May 24, 2013 report.

Camellia leaf gall on *Camellia oleifera* ‘Snow Flurry’
Photos: Bill Miller, The Azalea Works

Big Eyed Click Beetle (*Alaus oculatus*)
Craig Greco, Yardbirds, Inc., sent in a photo of an adult big eyed click beetle. The larvae of these beetles are predaceous and feed on wood boring larvae. Look for these beetles under logs and in other damp places. The adults feed very little, if at all.

Big eyed click beetle that is well camouflaged on bark
Photo: Craig Greco, Yardbirds, Inc.

Potato Leafhoppers
Marie Rojas, IPM Scout, is seeing a lot of potato leafhoppers on red maples in Montgomery County this week. Potato leafhopper feeding causes the tip growth on maples to curl over and harden which is typically referred to as ‘hopperburn’. The multiple generations keep damaging the new tip growth that flushes out on the maples. The leafhoppers migrate from the south and feed on new growth. Females will lay eggs on tip growth and the nymphs will be feeding in the next couple of weeks.

**Control:** Soil drench applications include Thiamethoxam (Flagship), Imidacloprid (Marathon and other trade names now that the patent has expired), Dinotefuran (Safari), and Cyfluthrin (Discus). You can also make foliar applications of Acephate (Orthene) but this would have to be repeated for the multiple generations that occur over the summer. Acetamiprid (Tristar), Discus and Kontos can also be applied as a foliar spray in nursery beds.
**Ambrosia Beetles**

We had the second spike in ambrosia beetles, mainly *Xylosandrus crassiusculus*, two weeks ago here at the research center in Ellicott City and at sites in Adamstown and Beallsville. Since then, we continue to pick up low numbers of adult ambrosia beetles as shown in the chart below. We received an email and call from a graduate intern of the Virginia Chestnut Society, Northern Branch, to let us know they were finding ambrosia beetles attacking several of their hybrid chestnuts during this last spike in adult activity. They had lost over 30 trees to the ambrosia beetle attacks at one planting site. Earlier, we had reported that several nurseries also saw damage on trees during this last spike of flight activity. The good news this week is that the adult population is staying low at the three sites we are monitoring. We should be getting late enough into the season in which we generally don’t see damage from the 2nd and 3rd generations of ambrosia beetles.

![Chart showing the population of ambrosia beetles](image)

**Beneficial of the Week, Paula Shrewsbury**

**Parasitic wasps attack armored and soft scales – signs of parasitism**

When I think of the key pests in our industry scales, both soft and armored species, are always near the top of the list. There is something about “managed” environments such as our production nurseries and landscapes that favor scale insects and / or disfavor natural enemies. This is clearly demonstrated by the many scale species we discuss in our weekly report. Even though scales can be very abundant and sometimes damaging things could be worse. For many scales there are natural enemies that attack and kill them. Things however could be better too. For example, the white prunicola scale that we have been monitoring had parasitic wasps that were attacking and killing them but I estimate they were attacking less than 10% of the population… not enough! That is why I promote conservation of natural enemies to increase their densities and impact on scales and other pest insects. For example, adding flowering plants can provide resources such as nectar, pollen, and refuge for natural enemies. Pesticides should be selected not only based on their efficacy against the pest but also for their impact on natural enemies. This is especially critical if there are “signs” of parasitoid activity on your scale populations. How do you know if parasitoids are attacking the scales on your trees and shrubs? It usually is NOT by seeing adult wasps – they are very tiny - making them difficult to see. Adults are fast moving and the immature stages often develop within its insect host making it difficult to monitor for parasitoid activity by watching for adults or larvae. You have to look for “signs” of parasitism. When some insects such as aphids or whiteflies are parasitized there is often a change in color and/or size of the insect. Think of aphid mummies where the parasitized aphid looks “bloated” and usually tan or darkened in color. Unfortunately most scales do not change in size and color. A more universal sign is a discrete circular hole in the cover of the armored scale (see images), or body of the soft scale. When wasps reach the adult stage within their host’s body, they then
chew their way out to freedom. This chewing results in a circular hole. So when you are monitoring your plants and find scales, be sure to look at the scale covers for circular holes which indicate parasitoids are active in your scale population. If you see natural enemy activity, which we commonly find, take this into account when you are selecting which pesticides to apply for scale suppression. Select products that have less detrimental impact on scales like oils or insect growth regulators.

Degree Days (As of June 6)

<table>
<thead>
<tr>
<th>Location</th>
<th>Degree Days</th>
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<tbody>
<tr>
<td>Baltimore, MD (BWI)</td>
<td>773</td>
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<tr>
<td>Dulles Airport</td>
<td>814</td>
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<tr>
<td>Martinsburg, WV</td>
<td>735</td>
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<tr>
<td>Reagan National</td>
<td>974</td>
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<td>College Park</td>
<td>974</td>
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<td>Frostburg, MD</td>
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<tr>
<td>National Arboretum</td>
<td>974</td>
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<td>Salisbury</td>
<td>931</td>
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To check degree day (DD) accumulations in your local area go to:
http://www.weather.com/outdoors/agriculture/growing-degree-days/USMD0100

Note: degree days reported in this newsletter for various pests use the Weather.com web site, a base temperature of 50 °F, a start date of January 1st, and the date of monitoring as the end date.

Plant Phenology: What is in bloom

<table>
<thead>
<tr>
<th>PLANT</th>
<th>PLANT STAGE (Bud with color, First bloom, Full bloom, First leaf)</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asclepias tuberosa</td>
<td>Bud</td>
<td>Ellicott City (June 7)</td>
</tr>
<tr>
<td>Coreopsis verticillata ‘Moonbeam’</td>
<td>First bloom</td>
<td>Ellicott City (June 7)</td>
</tr>
<tr>
<td>Penstemon ‘Husker Red’</td>
<td>Full bloom</td>
<td>Ellicott City (June 3)</td>
</tr>
<tr>
<td>Salvia officinalis ‘Berggarten’</td>
<td>First bloom</td>
<td>Ellicott City (June 3)</td>
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MDA Pesticide Container Recycling Program

MDA is once again conducting a pesticide recycling program. For a list of dates and locations of collection sites, go to
Upcoming Programs

**Eastern Shore Pest Management Conference**
Friday, June 14, 2013
Location: Wye Research and Education Center, Queenstown, MD
For more information: Ginny Rosenkranz, 410-749-6141, ext 106

**MNLA Nursery Field Day**
June 20, 2013
Location: Waverly Farm, Adamstown, MD
Contact: MNLA, 410-823-8684

**The Maryland Christmas Tree Association (MCTA)**
**Summer Christmas Tree Meeting**
June 22, 2013
Location: Jarrettsville Nurseries, 1121 Holy Cross Road, Street, Md 21154.
Topics include: irrigation practices, field preparation, field tours, advanced shearing, fertilizer programs, pesticide and IPM.
Agenda and registration: gavertreefarm@aol.com.

**Nutrient Management Plan Writing – Nursery and Greenhouse Production**
July 10, 2013, 9 a.m. to 3:30 p.m.
Location: CMREC, 11975 Homewood Road, Ellicott City, MD 21042
Contact: Andrew Ristvey, aristvey@umd.edu, 410-827-8056 x113

CONTRIBUTORS:

<table>
<thead>
<tr>
<th>Stanton Gill</th>
<th>Paula Shrewsbury</th>
<th>Karen Rane</th>
<th>Chuck Schuster</th>
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<tr>
<td><a href="mailto:sgill@umd.edu">sgill@umd.edu</a></td>
<td><a href="mailto:pshrewsb@umd.edu">pshrewsb@umd.edu</a></td>
<td><a href="mailto:rane@umd.edu">rane@umd.edu</a></td>
<td><a href="mailto:cfs@umd.edu">cfs@umd.edu</a></td>
<td><a href="mailto:rosnkrnz@umd.edu">rosnkrnz@umd.edu</a></td>
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<td>David Clement</td>
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<td>Brian Clark</td>
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<td>hgic.umd.edu</td>
<td><a href="mailto:aristvey@umd.edu">aristvey@umd.edu</a></td>
<td><a href="mailto:bpclark@umd.edu">bpclark@umd.edu</a></td>
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Thank you to the Maryland Arborist Association, the Landscape Contractors Association of MD, D.C. and VA, the Maryland Nursery and Landscape Association, Professional Grounds Management Society, and FALCAN for your financial support in making these weekly reports possible.

Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.

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