In This Issue...
- Weather update
- Ambrosia beetle update
- Sawflies on roses
- Pest walks
- Boxwood sample reminder
- MD invasive plants prevention and control
- Hydrangea leaffier
- Cottony camellia/taxus scale
- Pine needle scale
- Borer activity
- Boxwood psyllids
- Pine bark adelgids
- European pine sawfly
- Gymnosporangium rust
- Assassin bug egg hatch

Beneficial of the Week
Weed of the Week
Plant of the Week
Phenology
Degree Days
Announcements

Coordinator Weekly IPM Report:
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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)
Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

Weather This Spring - Good News
By: Stanton Gill

The last three springs have been rainy with perfect temperatures at bloom time for the spread of the bacterial disease fire blight. This year, with the warm, then cold, then warm, then cold sequence has resulted in less than ideal conditions for fire blight. Serviceberry trees have been hit hard by fire blight in several nurseries over the last three years, but this year they bloomed and made it past the major infection time unscathed. Pear trees were in full bloom two weeks ago during the cold period and apples trees were in full bloom last week with the sunny clear weather. These periods are generally two prime times for fire blight infection, but the weather was cool and dry. So far, we are not seeing a lot of fire blight activity which is one good thing with an otherwise wild up and down temperature spring weather.
Ambrosia Beetle Update
By: Stanton Gill

On Monday, April 25, I checked the alcohol baited Lindgren traps at CMREC. We had 36 *Xylosandrus germanus* present and 5 *Xylosandrus crassiusculus* in the trap. Activity remained high over the weekend. A grower called on Thursday, April 28, to report that figs were wiped out over the last week from ambrosia beetles. The grower is sending a sample so I can identify which species is present.

Sawflies on Roses
By: Stanton Gill

Knockout roses are in full leaf at this point. As we head into May, expect to see larvae feeding on the foliage. We received a report of feeding on roses in Olney on April 25. Several species of sawflies feed on roses, but the roseslug, *Endelomyia aethiops*, can be found skeletonizing rose leaves in late April and early May. This species, along with the bristly roseslug, *Cladius difformis*, which we find in later May to June, belong to the family Tenthredinidae. The bristly roseslug, has many hair-like bristles on the dorsal (upper) side of the body.

The roseslug larva is pale green with a light tan head capsule. Flip the larva over and look for the six “true legs” attached to the thorax. Then, follow the body to the abdomen and look for the prolegs (they look like large bumps and come in pairs). Since they are sawflies, there will be more than 5 pairs of prolegs present. They are small at this time of year so you will need a hand lens to see the prolegs.

Roseslug sawfly feeding creates a distinctive window-pane like damage. The damage will be evident as we move further into May. It usually starts on the lower part of the rose plant. One additional note is that the roseslug sawfly also feeds on raspberry and blackberry foliage at this time of year though the damage is not as evident as it is on roses.

Control: Spinosad products such as Conserve work well on sawfly larvae.

Improving Your Diagnostic Skills
By: Stanton Gill

More progressive IPM Practitioners always like to hone their disease and insect detection and diagnostic skills. We are going to help you in this area. Karen Rane, David Clement, Mary Kay Malinoski, Chuck Schuster and I will conducting two on-site diagnostic IPM Skill Building sessions at two locations in Maryland. The first session is on May 12 at Howard Community College in Columbia from 5:00 – dark. We will do a walk around the campus and diagnose insect, disease and weed problems in the landscape. A dinner is provided with this evening session. You can register by going to the MAA website.

The second session will be on May 19 at Hood College in Frederick with the same IPM crew. This session will be an afternoon pest walk from 2:00 – 4:00 p.m. Registration will be posted to the FALCAN website. This session is purely diagnostic and no food is provided.
A Reminder About Boxwood Samples
By: Karen Rane

Cool, moist weather favors the development of Boxwood blight, caused by the fungus *Calonectria pseudonaviculata*. This disease should be on every nursery grower and landscaper’s radar, especially since potentially infected boxwood plants were shipped to a number of large retail box stores last fall and many plants were sold and planted before regulators could get them off the shelves. Be on the lookout for dark stem cankers and dark leaf spots on otherwise green foliage. The disease causes defoliation of the lower leaves as well. Confirmation of the disease requires microscopic examination of the characteristic spore structures on infected leaves or stems, and we urge anyone who suspects they have infected boxwoods to seek a diagnosis from a plant diagnostic laboratory. So far we have confirmed this disease in six Maryland counties (Baltimore, Harford, Montgomery, Prince Georges, Wicomico and Worcester) as well as Baltimore City. We want to know the extent of this disease in our state, so we are happy to examine samples at the UMD Plant Diagnostic Lab. However, as for any plant problem diagnosis, the sample must be in good condition and show appropriate symptoms in order to get an accurate diagnosis. Boxwood twigs and foliage that died over the winter and are now completely brown and dry are not good samples for diagnosis. Many secondary microorganisms will invade dead plant tissue making it very difficult to detect a primary fungal pathogen. The best sample for boxwood blight diagnosis consists of several twigs with some green foliage still attached, showing various stages of symptom development (Figures 1, 2). Completely dead boxwood leaves and twigs like those in Figures 3, 4 are not adequate for diagnosis of boxwood blight or other disease or pest problems.
Maryland Invasive Plants Prevention and Control
From: Maryland Department of Agricultures

Maryland’s revised Invasive Plant Regulations were published in the April 1, 2016 Maryland Register. The regulations went into effect April 11, 2016. For details, visit MDA’s Invasive Plants Prevention and Control Web page, http://mda.maryland.gov/invasiveplants. Here is summary of the plants and restrictions, according to phase-in provisions in the regulations:

The following are designated as Tier 1 Invasive plants
Ficaria verna (formerly Ranunculus ficaria) (fig buttercup, lesser celandine, pilewort)
Geranium lucidum (shining cranesbill)
Iris pseudacorus (yellow flag iris)

Effective April 11, 2016 - A person may not acquire a new Tier 1 invasive plant.
Effective April 12, 2017 - A person may not propagate, import, transfer, sell, purchase, transport, or introduce any living part of a Tier 1 invasive plant in the State. Exemptions - A person may conduct a prohibited activity if they receive approval from the Secretary before conducting the activity; and the activity is for the purpose of controlling or disposing of the Tier 1 invasive plant, using the Tier 1 invasive plant for research or educational purposes, or exporting the Tier 1 invasive plant out of the State.

The following are designated as Tier 2 Invasive Plants
Euonymus alatus (burning bush)
Ligustrum obtusifolium (blunt-leaved or border privet)
Wisteria sinensis (Chinese wisteria)
Wisteria floribunda (Japanese wisteria)
Wisteria x formosa (floribunda x sinensis hybrids)

Effective July 12, 2016 - A person may not sell or offer for sale at a retail outlet a Tier 2 invasive plant unless the retail outlet posts in a conspicuous manner in proximity to all Tier 2 plant displays, required signage which can be found on MDA’s Invasive Plants Prevention and Control Web page. A person may not provide landscaping services to plant or supply for planting a Tier 2 invasive plant unless the person provides to its customer a list of Tier 2 invasive plants.

Hydrangea Leaftier
Jessica Frakes, Thrive, Inc., found damage from hydrangea leaftier caterpillars on plants in D.C. on April 26. The larvae use silk to tie leaves together which can make plants look unsightly. Manual control options include opening the leaves up to expose the caterpillars to predators, squishing the cateprillars within the tied leaves, or removing the leaf clusters that are infested.

Hydrangea leaftier caterpillars use silk to tie leaves together
Photo: Jessica Frakes, Thrive, Inc.
**Cottony Camellia/Taxus Scale**  
By: Stanton Gill

Paul Wolfe, Integrated Plant Care, reports that cottony camellia/taxus scale females are just starting to form their white eggs sack in the Bethesda area this week. Jessica Frakes, Thrive, Inc., found this scale with egg sacs on holly in D.C. on April 26. Richard Chaffin, The Brickman Group, sent in photos of adults, but no signs of egg sacs yet. We are still a couple weeks off from the time of egg hatch and crawler emergence.  
**Monitoring:** Look for yellowing of foliage and plant dieback in severe infestations. This soft scale produces large amounts of honeydew on which sooty mold will grow. The scale tends to accumulate on the undersides of foliage. There is one generation a year, but each female can produce over 1000 eggs so populations can build up quickly. Eggs hatch and crawlers are active in late May and early June.  
**Control:** Wait for eggs to hatch and then treat with pyriproxyfen (Distance) or buprofezin (Talus) mixed with 0.5 - 1% horticultural oil.

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**Pine Needle Scale, Chionaspis pinifoliae (armored scale)**  
By: Nancy Harding

Monitoring pine needle scale on *Pinus mugo* in Bowie on April 28 found first generation egg hatch (CRAWLERS)!. The accumulated degree days in Bowie were 285DD. If the degree day accumulations in your area are close to 285DD, you should closely monitor plants infested with pine needle scale. If crawlers are active and populations are high enough to warrant control, it is time to treat. Crawlers will seek feeding sites on the previous year’s foliage. Once they have inserted their mouth parts through a stoma, they remain at the site for the rest of their lives. Settled crawlers are
flattened and yellow (see photo on left 1st arrow). There are two generations of pine needle scale: the first generation eggs hatch is now at approximately 283DD (see pest predictive calendar) and can continue to hatch over a 7-10 day period; the second generation summer produced eggs begin hatching at approximately 1648 DD (July) and may hatch over a period of two to three weeks. We will continue to monitor this scale and report on its crawler activity.

**Control:** Many lady beetles and parasitic wasps feed on this pest; therefore, careful monitoring of predators and parasitoids (see image on right below) as well as using pesticides with little effect on beneficials, can allow biological control to suppress the population. However if control is warranted, use a summer rate of horticultural oil or an insect growth regulator (IGR) such as Distance or Talus to target crawlers.

**Borer Activity**

Nancy Harding, UMD, reported that ash/lilac borer (*Podosesia syringae*) adults were found on April 27 in baited wing traps placed in College Park on 4/20. Monitor host plants; lilac (*Syringa*), ash (*Fraxinus*), finge tree (*Chionanthus*), and other related species.

Nancy Harding, UMD, reported that black locust (*Robinia pseudoacacia*) was in full bloom in College Park on 4/27 and accumulated degree days were 317DD. Emerald ash borer adult flight activity starts when black locust is in full bloom.

Craig Greco, Yardbirds, Inc., found adults of redheaded ash borers this week. The coloration of this native beetle mimics some wasps. It is found on stressed and dying trees.

**Boxwood Psyllid**

Boxwood psyllids continue to be active this week. Connie Bowers, Garden Makeover Company, found a lot of the white, fluffy wax they produce on a group of Boxwood ‘Winter Gem’ on in Silver Spring on April 27.
**Pine Bark Adelgids**

Paul Thomas, Scientific Plant Service, found pine bark adelgids on white pine in Glen Arm on April 16. This adelgid overwinters as nymphs on the bark of its hosts. Pine bark adelgid has several generations per year.

**Monitoring:** Visually monitor the bark and larger branches of pines for fluffy white wax. It often starts at the base of needles. Black wingless adults will be within the wax along with yellow eggs. When populations are high, trunks of trees can be almost covered with white wax. Trees can generally tolerate relatively high levels of this pest. They are sucking insects so they remove plant sap.

**Control:** Pine bark adelgids are often kept at low populations by a number of different generalist predators (flower fly larvae, lady beetles). Horticultural oil can be applied now or at most times of the year to reduce populations of adelgids. The horticultural oil should help conserve the natural enemies that should prevent adelgid populations from returning to high levels. Wait for egg hatch if you decide to apply a chemical.

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**European Pine Sawfly**

Jeff Lavrusky, The Brickman Group, found pine sawfly larvae feeding on pine in Rockville. European pine sawflies spend the winter in the egg stage, inserted into needles.

**Monitoring:** Larvae are gray green. Look for them on two and three needle pines.

**Control:** Squishing works well or remove growth with clustering larvae. Conserve (spinosad) can be applied to foliage.

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**Gymnosporangium Rust**

Today, Mike Jackson found gymnosporanium rust galls on juniper in Owings that are producing the gelatinous tendrils upon which the teliospores are found. The cool, wet weather is ideal for the production of these tendrils. See the [April 1, 2016 IPM](https://example.com) report for more information.
Assassin Bug Egg Hatch
Marie Rojas, IPM Scout, found assassin bugs that just hatched on April 22 in Frederick and Montgomery Counties. These bugs are one of the species of assassin bugs that are effective predators on plant damaging insects.

Assassin bugs are generalist predators; they use their piercing and sucking mouthparts to consume their prey

Beneficial of the Week
By: Paula Shrewsbury, University of Maryland

What is that black dot?
By: Rebecca Waterworth and Paula Shrewsbury, UMD
My name is Rebecca Waterworth and I work with Paula Shrewsbury in the entomology department at UMD. For the past year, we have been working in two tree production nurseries to determine if adding beds of flowering plants (a.k.a. conservation strips) can increase populations of beneficial natural enemies and pollinators AND increase biological control of pest insects.

Conservation strips are within the turf alley adjacent to rows of trees and woody shrubs. The strips contain a diverse mix of annual and perennial flowering plants specifically selected because research has shown them to be attractive to natural enemies and/or pollinators, and to provide season long blooms, or floral resources, for beneficial insects. We are assessing the abundance and diversity of all beneficial insects that visit the conservation strips using multiple sampling methods, including yellow sticky cards. As many of you are aware, lots of insects, many of which are very small, become stuck to these cards. While examining the cards under the dissecting microscope in the lab, I have found a tremendous diversity of beneficial insects, nearly all of which were less than 0.4.” This “Beneficial of the Week” is the first in an occasional series of natural enemies that were detected in nurseries with yellow sticky cards and a series that I would like to subtitle “What is that black dot?”

Flowering plants do not only benefit pollinators! Many parasitoids and predators need supplemental nutrition in the form of nectar or pollen to successfully lay eggs (or oviposit) as well as for day-to-day survival. Believe it or not, some flies (Order: Diptera) are considered beneficial insects. In both nurseries, one fly stands out as the most abundant in the conservation strips. It is a species of dance fly (Family: Empididae). Most dance fly species are predacious and have very interesting mating behaviors. For dance flies, and many insect groups in general, it is the female that “chooses” the male. While I am uncertain about this particular species (see photo inset), some species of dance fly have elaborate mating rituals. Females are not known to hunt for food. They
Weed of the Week
By: Chuck Schuster, University of Maryland Extension

Rain has been helping with the dry season we have been in. This rain helps with pre-emergent herbicides and also gets things growing that have been lagging behind. April 23 had soil temperatures in the upper 50 °F range, on April 25; temperatures were down to the upper 40 °F range, with a 10 degree change during the next 24 hours. Temperatures have slowly declined this week with today’s reading at 48 °F in one location and another location being as high as 55 °F. The cloudy conditions have cooled things off, and the rain is a real help with everything growing as well as activation of herbicides.

I have seen quite a bit of purple deadnettle, Lamium purpureum, in recent weeks. It has been in bloom, and is often mistakenly identified as henbit. Using the photos below, Photo B is an example of purple deadnettle. It is a commonly fall germinating, winter annual in the mint family. Henbit shown in Photo A, is also a fall germinating weed that can be found in turfgrass and landscape settings throughout the United States. Purple deadnettle has square hollow stems, no basal leaves, and the leaves will be found on a short petiole (Photo C), which distinguishes it from henbit, whose upper leaves are sessile or attached to the stem itself. Petiole length of the lower leaves will be longer than that of the upper leaves. The leaves of purple deadnettle are opposite, slightly pubescent (occurring with hairs) triangular to round in shape with a toothed margin but are less deeply lobed than henbit. Uppermost leaves can be triangular in shape. Leaf color is dark green, with the upper leaves becoming purple or red. The stems are square in shape and can grow up to sixteen inches in height branching from the base of the plant.

The name deadnettle comes from the fact that it will not sting you as opposed to stinging nettle, Urtica, which will. The two plants are not closely related but they are similar. Urtica produces that formic-acid wielding that zaps you with little stingers. Purple deadnettle can be eaten.
Flowers occur in whirls of three to six in the upper leaves and are purple. The root system is fine and fibrous, and the plant produces a small berry about two mm in diameter. Purple deadnettle spreads by seed.

Cultural control of purple deadnettle includes proper use of fertilizers to build a strong turf, aeration of the soil to prevent compaction, and in most cases use of mulch to act as a weed barrier to prevent light from reaching the soil for germination. This is an easy weed to pull. It is not a difficult weed to control in most settings. Soil disturbance in the fall will help this weed germinate, and monitoring at this time can help with removal.

Control of purple deadnettle can be accomplished using post emergent products which include using the organic products pelargonic acid (Scythe), and synthetic products including Imazaquin (Image), Metribuzin (Sencor) turf only, and 2,4 D + MCPP. Fall application of Dichlofenteril (Barrier) (pre emergent) can help prevent this weed from being an issue in the spring.

Amelanchier x grandiflora ‘Autumn Brilliance’ is a cross between two native trees, *A. arborea* (downy serviceberry) and *A. laevis* (Allegheny serviceberry) and is noted for its disease resistance to leaf spot and fire blight. Like most understory trees, ‘Autumn Brilliance’ grows only 15 – 25 feet tall and wide and will bloom best with full sun but thrives best with afternoon shade. It is tolerant of many soil types. It is slightly drought tolerant but does best in moist, well drained acidic loams and is cold hardy from USDA zones 4-9. The silhouette is created by multi-stems to a single stemmed large shrub or small tree with a rounded crown. The silver gray smooth bark is part of its winter charm. In the spring the pure white 2-4 inch flowers clustered in a small bouquet, emerge just before the foliage expands, and will last for about 2-3 weeks depending on the weather and the cool temperatures. ‘Autumn Brilliance’ flowers are almost twice as large as the species and begin with a hint of pink but expand to pure white. By June, the fruit matures from green to red and finally to a purple–black color. The fruit has a taste similar to

*Amelanchier x grandiflora* ‘Autumn Brilliance’ is noted for its resistance to leaf spot and fire blight
Photo: Ginny Rosenkranz, UME
blueberries, some say even better than blueberries, and can be used to make jams and pies. The berries do not stay on the tree long as the native birds discover them quickly. The alternately arranged serrated leaves are medium to dark green in color and, as the name suggests, turns a brilliant red to red-orange in the fall. *Amelanchier x grandiflora* ‘Autumn Brilliance’ can be used in woodland landscapes, alongside streams or in a bird and pollinator garden. Diseases include rust, witches broom, fire blight, powdery mildew, fruit rot and insect pests include aphids, leaf miners, borers, pear leaf blister, pear slug sawfly and willow scurfy scale.

### Plant Phenology Indicators

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<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><em>Podophyllum peltatum</em> (mayapple)</td>
<td>First bloom</td>
<td>Ellicott City (April 25)</td>
</tr>
<tr>
<td><em>Viburnum rhytidophyllum</em> (leatherleaf viburnum)</td>
<td>Full bloom</td>
<td>Columbia (April 18)</td>
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### Degree Days (As of April 27)

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<th>Location</th>
<th>Degree Days</th>
<th>Location</th>
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<td>Baltimore, MD (KBWI)</td>
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<td>College Park (KCGS)</td>
<td>317</td>
<td>Dulles Airport (KIAD)</td>
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<td>Fairfax, VA (D4092)</td>
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<td>Greater Cumberland Reg (KCBE)</td>
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<td>Martinsburg, WV (C1672)</td>
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<td>St. Mary’s City (St. Inigoes, MD-KNUI)</td>
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<td>Westminster (KDMW)</td>
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</table>

**Important Note:** We are now using the [Online Phenology and Degree-Day Models](https://phenology.calnet.umd.edu/) site.

**Use the following information to calculate GDD for your site at the Online Phenology and Degree-Day Models site:**

- Select your location from the map
- Model Category: All models
- Select Degree-day calculator
- Thresholds in: Fahrenheit F
  - Lower: 50
  - Upper: 95
- Calculation type: simple average/growing dds
  - Start: Jan 1

Once you know the GDD and/or plant phenological indicators (PPI, what plants are blooming) in your location, you can go to the [Pest Predictive Calendar](https://phenology.calnet.umd.edu/) to determine what pests you can expect to be active soon in that location.
Commercial Horticulture Conferences

Pesticide Recertification Conference (Eastern Shore)
June 3, 2016
Brochure will be posted soon

US DOT Forum
June 8, 2016: 8:00 a.m. to noon
Location: 6772 Rockawalkin RD, Hebron, MD
Contact Ginny Rosenkranz, Extension Educator, 410-749-6141 to sign up for this free US DOT Forum

Pesticide Recertification Conference
June 10, 2016
Location: Montgomery County Extension Office, Derwood, MD
Brochure is posted online

Maryland Christmas Tree Association Summer Meeting
Saturday June 25, 2016 at Thomas Tree Farm, 3501 Hanover Pike, Manchester, MD
For info: wayne@thomastreefarm.com

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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.

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