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)
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Good News for Weekend Sales
By: Stanton Gill, UME

Several nurseries and garden centers reported strong buyer activity on April 11 and April 12. The weekend was perfect with warm weather and sunshine. Let’s hope we get a couple more of these excellent weekends to keep sales strong. It is needed after a terrible March.
Ambrosia Beetle Update  
By: Stanton Gill  
I thought we would have tons of beetles in our traps at CMREC on Monday morning, but there was just one beetle in the trap and it was Xyleborinus alni, which is not a major problem for nursery and landscape trees. The Chestnut Society sent in samples from their traps on Monday and they had several Xyleborinus saxeseni and two Xylosandrus crassiusculus. So far, I have not seen the swarms of Xylosandrus species that I anticipated. It might take a couple of really warm days to get the activity going this season. Our traps on Friday morning had one X. germanus and the rest were Xyleborinus saxeseni. Marie Rojas is finding wet areas indicating the drilling of females into yellowwood, styrax and redbud in Montgomery County.

White Pine Weevil  
By: Stanton Gill  
Forsythia has come into full bloom which is a phenological indicator for activity of white pine weevil. The adult female weevils overwinter and become active when temperatures first warm up in spring. The 2015 season is very late this year and normally we would see activity of this pest in March. This species kills the terminal leader primarily of white pine in most nurseries and in the landscape. Colorado blue, Norway, and Serbian spruces, Scots, red, pitch, jack, and Austrian pines, and occasionally Douglas fir are also attacked.  

Monitoring: The adult is a small rust-colored weevil that is about 4-6 mm long. It has irregularly shaped patches of brown and white scales on the front wings. Near the apex of the front wings is a large white patch. Like most weevils, the adult has a long snout-like beak from which small antennae arise. The larval stage, which lives beneath the bark, is white with a distinct brown head. When mature, the larva is approximately 7 mm long, legless, and slightly C-shaped. On warm spring days the adult females fly or crawl to the leaders of suitable hosts, usually during the period from mid-March through April. Most feeding by adults is done within 25 cm of the terminal buds. Observations of resin droplets on the leader in early spring may be an indication that adults are feeding.  

Control: Application of a registered formulation of an insecticide should be made in early to mid April when droplets of resin are first detected. Only the terminal leader needs to be sprayed. Insect parasitoids and predators as well as birds feed on this pest. The effect of these natural enemies is not significant enough to prevent damage. One of the safest and best materials to apply is Dimilin.

Eastern Tent Caterpillars  
Eastern tent caterpillars continue to hatch throughout the region. Monitor trees for signs of newly hatched caterpillars and tents in branch forks. The tents will be small at this time. Preferred hosts of ETC include wild cherry, crabapple, and apple. They will also feed on a range of other deciduous trees.  

Control: Physically destroy tents as they form in branch forks. This action disturbs the caterpillar’s habitat and exposes them to natural enemies. Treat foliage with a product containing Bacillus thuringiensis (Bt) labeled for caterpillars. Confirm (Tebufenozide), an insect growth regulator, may also be used.
Boxwood Mites
By: Stanton Gill
We received samples from a nursery in Baltimore County this week with old damage from boxwood mite. I examined the samples and they are loaded with clear colored boxwood mite eggs. The boxwood mite is a cool weather mite and overwinters as eggs on the leaves and branches. The eggs remain clear color until just before hatch out when they start to become amber. I did not see any indication of hatch from these samples.

**Control:** Now is a good time to apply horticultural oil to reduce the mite population this spring. When they hatch, which should be in the next couple of weeks, you can use the mite growth regulator called Hexygon. In our trial it has been very effective in controlling the immature stages of boxwood mite. It gives a relatively long period of control in the spring, but wait until they hatch out to apply this material.

European Pine Sawfly
Chris Erb, Complete Lawn Care, found European pine sawfly feeding and causing damage on pines in Bethesda on April 15. 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.

Pollinator Activity
We are seeing a lot of activity from carpenter bees, bumble bees, and ground bees this week as more plants come into bloom. Ground bees are excellent pollinators and should be left alone. These bees are not generally aggressive and people only get stung if they start bothering the nesting sites.

Boxwood Leafminer
Jessica Frakes, Thrive Landscapes, is finding late instar larvae and developing pupae in boxwood in D.C., and Mark Schlossberg, ProLawn Plus Inc., is finding them in plants in Hunt Valley. We should see adult emergence in late April through early May. As the larvae pupate within the leaves, they become a bright orange instead of yellow.
Pine Needle Scale, Chionaspis pinifoliae (armored scale)
By: Nancy Harding, UMD
This native armored scale is a key pest of pines in landscape, nurseries, and Christmas tree plantations. Preferred host plants include white pine, Scotch pine, mugo pine, and Austrian pine; but other pines, spruces, firs, and Douglas firs, are frequently attacked. Pine needle scale overwinters as deep reddish colored eggs protected under the female’s wax covering; however some females may survive winter and lay eggs in spring. The adult female cover is white, elongate and tapers at one end (oyster shell-shaped) and is ~3 mm long. The male cover is smaller, white and more slender and about 1mm long. There are two generations a year and the overwintering eggs usually hatch when the degree day accumulations are approximately 255 DD (mid-May) and the second generation at approximately 1648 DD (late July). The eggs may hatch over a period of two to three weeks.

Monitoring: We are monitoring pine needle scale on *Pinus mugo* in Bowie, Prince Georges County, and as of Thursday April 16 found eggs under the female waxy covering along with some surviving females. The degree day accumulations in Bowie as of April 16 were 80 DD. We will continue to monitor this scale and let you know when crawlers are active.

Damage: Light infestations do not cause serious damage. Heavy infestations may cause yellowing of needles, stunting and dieback.

Tuliptree Scale
Marie Rojas, IPM Scout, is finding the black overwintering immature stage (2nd instars) of tuliptree scale on ‘Jane’ magnolias in nurseries in Montgomery and Frederick Counties. Paul Wolfe, Integrated Tree Care, is finding this scale insect on magnolias in the landscape. The scale will swell up through the spring and summer and become mature in late summer. Crawlers are produced in this area in September. Marie is also finding twice-stabbed lady bird beetles. These beetles prey on scale insects.
**Cottony Camellia Taxus Scale**

Marie Rojas, IPM Scout, is finding high levels of overwintering cottony camellia taxus scale immatures along the midribs on the undersides of the leaves of ‘Nellie Stevens’, ‘Dragon Lady’, and a Red Holly hybrid in a landscape in Chevy Chase. Ellen Nibali, Home and Garden Information Center, found them on sweetbox plants in Howard County.

**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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**Now is the Time for Action for Apple Scab**

**By: Stanton Gill, UMD**

Kari Peters, Plant Pathologist, Penn State, put out a disease alert today for high incidence of apple scab activity. The wet weather overnight combined with the warm weather today is making conditions perfect for spore germination from apple scab which overwinters on old leaves and twigs. If you are taking care of your customers’ apple and pear trees, then make sure an application of Captan and Manzate is applied to the foliage very soon. The fungicides work best as preventative applications before the fungi colonizes the leaves.

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**Gymnosporangium Rysts**

We included information on these rusts in last week’s report. Marty Adams, Bartlett Tree Experts, Craig Greco, Yardbirds, Inc., and Marie Rojas submitted photos of the stages of spore development they are finding.
Deer Damage
Mark Schlossberg, ProLawn Plus, Inc., sent in a photo of deer damage on laurels.

Beneficial of the Week
By: Paula Shrewsbury

More predators that hunt in lawns
Last week we discussed ants as major predators of insects in turfgrass environments. Rove beetles are another common predator group in turf. Rove beetles (family Staphylinidae) are common and abundant predators not only in turf but also in landscape beds, nurseries, agricultural and natural environments. Staphylinidae is the largest family of beetles with over 58,000 species worldwide. They are also a very ancient group of beetles with fossils dating back 200 million years ago in the Triassic period. So not surprisingly, rove beetles are very diverse in their ecology and morphology. Rove beetles are easily distinguished from other families of beetles by their short elytra (front wings) that result in more than half of their abdomen exposed. They range in size from
1/16” to 1.5”, are elongate in shape, and their colors range from yellow to red to brown to black.

Rove beetles are found in many types of habitats but are most commonly found foraging at the ground level on the soil surface and under leaf litter and stones and in mulch. They are also found under flaking bark of fallen decaying trees, in carrion (dead stuff), and in other moist environments. Some climb up on plants at night in search of prey. Rove beetles have very diverse diets and are known to feed on fungi, decaying organic matter, and dead and live arthropods. A majority of rove beetle species are predators of insects and mites. They feed on mites, soil inhabiting nematodes, aphids, beetles, collembola, and fly larvae. One genus of rove beetle, *Stenus*, are specialist predators of collembola. They have a specialized mouthpart, the labium, that the beetle can shoot outward from its head using blood pressure. The labium has a pad covered with bristly hairs with hooks and glands that excrete a glue-like substance that results in prey becoming “stuck” to the rove beetles mouthpart – a bad place to be I would say! Interestingly, a few species are parasitoids of insects such as fly pupae. Rove beetles are reported to suppress populations of pest insects and mites in numerous agricultural and horticultural systems. Rove beetles are diverse and contribute to ecosystem function in many ways, including biological control of plant feeding insects and mites that attack ornamental plants and turf.

**Weed of the Week**

**By: Chuck Schuster**

Soil temperatures are slowly warming up this year. On Thursday morning (4/16/2015) at 8:00 a.m. the temperature at the site checked was 52 °F. It is time to be monitoring many of our spring germinating annual grasses and looking at the timing of applying pre-emergent products if that is part of the weed control plans.

Lesser celandine, *Ranunculus ficaria L.*, also known as fig buttercup and pilewort, is a perennial flowering herbaceous plant that is now flowering in many locations. Mark Schlossberg, ProLawn Plus, Inc., sent in a photo of it in a landscape. This spring ephemeral arises early in the season, often near forest fringe areas and creates a dense carpet thus preventing native ephemerals that include bloodroot, wild ginger and others from surviving. The dense growing pattern makes this plant an invasive weed that competes and eliminates native understory plant species. It also grows in moist, sunny areas. This plant may be misidentified as marsh marigold *Caltha palustris*, which does not produce the tuber found on lesser celandine. Lesser celandine will also compete quite well with desired species of turf and will need to be controlled.

This plant has a basal rosette of dark green and shiny stalked leaves heart- to kidney-shaped. The flowers arise above the leaves on a delicate stalk, are yellow, and occur with eight petals (rarely more). The center of the flower is slightly darker in color. Most flowering occurs in this region from March through May. The plant has pale cream colored bulblets that occur along the stem axils that will become noticeable with close observation after the flowering period is complete. These bulblets make mechanical removal difficult. Lesser celandine spreads primarily by vegetative means through abundant tubers and bulblets.
Control of lesser celandine is difficult. Manual methods can achieve success with small patches, but will take careful removal of all bulblets and removal from the site to either a landfill or other means of destruction. Chemical control can be achieved using glyphosate (Rodeo is labeled for wetland areas) products early in the season, Mid February to early April, as long as the air temperature is 50 °F and no rain is anticipated within 12 hours. Waiting beyond this period of time may cause damage to many native wildflowers that share some sites. In this area it is recommended to wait until half the plants are in bloom to start control. In turf/lawn settings products containing at least two of these herbicides have been found effective. The herbicides to look for are MCPA, triclopyr, dicamba, that will remove many broadleaf weeds. Use caution with these products near ornamentals and the potential for volatilization does exist. Glyphosate products are non-selective and will destroy desired species. This process will take seven to fourteen days.
Phenology

<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>Camellia japonica ‘Jerry Hill’</td>
<td>First bloom</td>
<td>Ellicott City (April 15)</td>
</tr>
<tr>
<td>Cercis canadensis (redbud)</td>
<td>Bud</td>
<td>Columbia (April 16)</td>
</tr>
<tr>
<td>Lindera benzoin (spicebush)</td>
<td>First bloom</td>
<td>Columbia (April 12)</td>
</tr>
<tr>
<td>Podophyllum peltatum (mayapple)</td>
<td>First leaf</td>
<td>Ellicott City (April 13)</td>
</tr>
<tr>
<td>Sanguinaria canadensis (bloodroot)</td>
<td>Full bloom</td>
<td>Columbia (April 12)</td>
</tr>
<tr>
<td>S. canadensis ‘Multiplex’</td>
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<td>Silver Run (April 13)</td>
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Degree Days (As of April 16)

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<td>St. Mary’s City</td>
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<td>138</td>
<td>152</td>
</tr>
</tbody>
</table>

To check degree day (DD) accumulations in your local area go to: http://www.yourweekendview.com/outlook/agriculture/growing-degree-days/. Note: degree days reported in this newsletter use a base temperature of 50 °F, a start date of January 1st, and the date of monitoring as the end date.

Maryland Day 2015
April 25, 2015
10 a.m. to 4 p.m.
Location: University of Maryland, College Park, MD
marylandday.umd.edu

Great Looking Lawns Using Bay-Friendly Practices
Saturday, May 2, 2014
10:00 am – 12:00 pm
Learn about lawn care at the National Arboretum from University of Maryland Experts
Free, but space is limited and registration is encouraged. Call 202-245-5965 to register
Upcoming Conferences:

**MAA Pest Walk**
May 20, 2015
Location: Irvine Nature Center, Owings Mills, MD

**Eastern Shore Pest Walk**
June 3, 2015
Location: Salisbury, MD
Contact: Ginny Rosenkranz, 410-749-6141

**MNLGA Nursery Field Day**
June 17, 2015
Location: Clear Ridge Nursery, Union Bridge, MD

**Greenhouse Tour and MNLGA Picnic**
June 25, 2015
Location: Greenstreet Growers, Lothian, MD

**Summer Meeting of the Maryland Christmas Tree Association**
June 27, 2015
Location: Pine Valley Christmas Trees, 342 Blake Road, Elkton, MD 21921
Meeting includes a 60th MCTA Anniversary celebration.
For more information: GaverTreeFarm@aol.com or http://www.marylandchristmastrees.org/

**Alternative Greenhouse Crops Conference**
August 5, 2015
Location: Brookside Gardens, Wheaton, MD

**LCA Hands-on Training Seminar**
September 16, 2015
Location: Johns Hopkins University, Montgomery County Campus

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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 FALCANT for your financial support in making these weekly reports possible.

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