



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

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Coordinator of the electronic weekly IPM report:

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Regular Contributors:

Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialist)

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 Ctr)

Design, layout and editing: Suzanne Klick and Shannon Wadkins (Technicians, CMREC)

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.

INSECTS NEEDED FOR RESEARCH (Please contact Paula Shrewsbury at pshrewsbury@umd.edu OR 301.405.7664):

CLEAR-WINGED BORERS – Peach tree borer adult moths should start flying in the next few weeks. The borers are common on cherry laurel and other *Prunus* species, feeding / boring at the crown of the shrub. Lilac borers could also be used if you have a site with numerous plants. If you think you have an infestation contact me.

SOFT SCALE – If you are nursery and have soft scales on your trees (ex. oak, dogwood, ornamental fruit trees, *Taxus*, maple, zelkova) contact me. Soft scales produce honeydew and crawlers of many species should be active around now.

BAGWORMS – Eggs should be hatching and caterpillar activity starting in the next week or so. If you had a site with bagworm problems last year please contact me.

WHITE GRUBS – We don't predict significant white grub problems this year following the last few years of summer drought. However, if you have irrigated turf you are more likely to have grub activity. If you had grub problems last year contact me.

Emerald Ash Borer

Black locust blooms are fading in College Park and are in full bloom in central Maryland this week. When the black locust blooms the adult emerald ash borer should be out and flying. The adults will feed on the foliage of the ash before mating and dispersing. Their feeding creates shotholes in the foliage of the host ash. Be on the lookout for adult emerald ash borers over the next couple of weeks.

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Boxwood Spider Mite, *Eurytetranychus buxi*

The boxwood mites started hatching this week in central Maryland. They overwintered as eggs. The mites are small and clear to light yellow in color and you will need a hand lens to see them. As they mature they will be light yellow to yellowish-brown. They are on the undersides of the foliage. The feeding of the mites will cause stippling to the foliage and heavily infested leaves will turn yellow and drop.

Control: Japanese boxwood appears to be less susceptible, but we found boxwood mite on several cultivars of Japanese boxwoods growing in full sun in 2007. The common boxwood such as the English and European types tends to be very susceptible. Columnar forms of boxwood appear to be very susceptible. We have used the mite growth regulator Hexagon and obtained season long control if applied early in the season. Other materials that work well include Floramite, Akari, Avid, and horticultural oil (directed at the undersides of the foliage).



Bronze Birch Borer, *Agrilus anxius*

When ninebark and multiflora rose come into bloom we should start to see adult activity of the bronze birch borer adults. They will attack European and Asian species of birch. The larvae of this buprestid beetle have been overwintering under the bark and the emerging adults will make a D-shaped exit hole in the bark.

Control: Imidacloprid can be applied to the soil but it will take 30 - 60 days to uptake, but this treatment should still be in time to kill young larvae that hatch in later June. Bidrin can also be injected using the Mauget Injection system.



Steven Katovich, USDA Forest Service, United States,
www.forestryimages.org

Potato Leafhopper

The adult potato leafhoppers continue to be active in Maryland nurseries this week. The adult females will be ovipositing eggs into foliage over the next couple of weeks. When the nymphs hatch and start to feed tip growth on the maples will start to curl over and become hardened. Steve Black reports finding potato leaf hoppers on *Acer truncatum* this week in the Frederick area.

Control: In a trial we conducted in 2007 we obtained excellent control with Flagship applied through the drip irrigation system. Other options are soil applications of imidacloprid (Marathon) or Dinotefuran (Safari). 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.



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Minute Cypress Scale

John Speaker brought in a sample of arborvitae with minute cypress scale in the crawler stage in Salisbury. We are not seeing crawlers in central Maryland yet.

Control: Oil and distance.

Redheaded Ash Borer, *Neoclytus acuminatus*

The redheaded ash borer is out and mating. Steve Algeier, University of Maryland Cooperative Extension, shot this great picture of a male and female mating on a *Cercis* (redbud) tree. Females will lay eggs on weakened trees which we have plenty of since we went through two years of extended droughts. Females do lay eggs in ash trees, but we have also recovered them from zelkova in the Frederick area. They are reported to attack fruit trees and several species of hardwood trees.

Control: Normally, I would not worry about this borer since it attacks weakened trees and in the natural selection process this is ok. This year if you have a valuable tree and you find adults active in your area you might consider a protective spray on the trunks of trees that have been stressed but are too valuable to lose. Astro or Onyx would be applied now.



Gypsy Moth Update

Gypsy moths are in the 2nd and 3rd instar stages this week and are shot hole feeding. In the next week or so they will start migrating down the trunk of the trees and seek places to hide during the day. They then migrate back up the tree during the night to feed.

Azalea Whitefly

Derrick Bender sent us a photo of sessile stages of whitefly on rhododendron from Allegheny County. They are most likely the azalea whitefly, *Paelius azaleae*, because this whitefly tends to be specific to certain species of rhododendrons. They are also common on the hairier leaved varieties of azalea.



Clover Mites

Clover mites are active this week crawling on decks and on walls, usually on the sunny sides of buildings. Marty Adams, Bartlett Tree Experts, brought in samples of clover mites this week that were invading his customer's deck area.

Control: None is necessary. They do not bite or spread disease and control is not warranted.



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Rose Slug Sawfly

Steve Sullivan, The Brickman Group, sent in this photo of a rose slug sawfly feeding on roses last week. He noted that it was a heavy infestation and the damage to the plant was more severe than he usually finds. Look closely at your plants – they camouflage well.

Control: Conserve



Aphids on River Birch

John Speaker, Speaker's Garden, is seeing high numbers of spiny witchhazel gall aphid on river birches in Gaithersburg this week. Jeff Schwartz is also seeing these aphids and the damage caused on weeping Heritage river birches in western Howard County.

Monitoring: The aphids start on witchhazel early in the season and then move to river birch. The aphids are in a colony on the undersides of the foliage. Heavily infested leaves will drop off.

Control: Next year you can apply a soil drench of imidacloprid in April to the river birch. The aphids are a nuisance but if you chose not to control them they will still be fine. Foliage will drop but new foliage develops later in the season. Predacious insects have significantly reduced this aphid on the river birch here at the research center over the last few years.



Honeylocust Plant Bug

Marty Adams found plant bugs on honey locust this week in Glenwood. Honeylocust plant bug causes stippling and distorted foliage. With heavy infestations, trees can be defoliated. There is only one generation per year.

Control: 1% rate of horticultural oil or apply soil applications of dinotefuran (Safari). Large valuable trees can be injected with imidacloprid or dinotefuran

Watch out for Ticks

The Baltimore Sun published a story on ticks and Lyme disease this week. In the State of Maryland the number of cases of Lyme disease jumped from 1,248 in 2006 to over 2,876 in 2007. The number of cases of Lyme disease tripled in Howard County from 2006 to 2007. When you are out in high grass or at the edge of woods then you have the greatest chance to make contact with ticks. Check yourself closely after being in these types of areas and remove any ticks before they have a chance to insert their mouthparts and start to engorge. Repellents can be applied before going into high grass or wooded areas.

Scott Bauer, USDA Agricultural Research Service, United States, www.forestryimages.org



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Fireblight

We are receiving many reports of fireblight this spring. Jessie Smith, Royal Greens, reported it on Bartlett pear in Laytonsville; Judi Moline, Master Gardner, found it on Bradford pear in Germantown; Kathy Hodges is reporting it on Bradford pears in Anne Arundel County; and Mark Scafide, City of Gaithersburg, is seeing a lot of damage, mostly on Aristocrat pears. He noted that some trees are 60 to 70 percent infected.

Fusarium

Marty Adams reported fusarium on liriopie in Ellicott City. The diagnosis was confirmed by the Bartlett Tree Experts' Lab. Fusarium is a soil-borne fungus that is highly host specific.

Management: Maintain healthy plants to reduce the spread of this disease and move plants to a new area if possible.

Diplodia Tip Blight

Marty Adams found diplodia tip blight on Norway spruce in Columbia which was also confirmed by their in-house lab.

Anthracnose

Steve Allgeier, Maryland Cooperative Extension, is receiving reports of anthracnose on white oaks and ash in Carroll County in the areas of Westminster and Silver Run. At a pest walk earlier in the month, several arborists reported problems on oaks this year. Kevin Nickle, ProLawn Plus, brought in a sycamore sample with anthracnose symptoms. The rain is creating the conditions for high incidence of certain diseases this year.

Monitoring: Symptoms of anthracnose include necrotic spots, leaf and twig blight, or defoliation. When the weather is cool and wet, look for symptoms on lower portions of the tree first.

Control: Increase air circulation in the crown by thinning and removing dead twigs that may harbor the pathogen. Since anthracnose pathogens overwinter in dead twigs and on fallen leaves, removing leaves in the fall can also help reduce pathogen inoculum. If needed, apply chemical sprays multiple times as new leaves emerge to protect them from the pathogen until they harden off. Common fungicides used are chlorothalonil, mancozeb, propiconazole, or thiophanate methyl.



Cicadas

We've received a report of periodical cicada activity this week from Lyndall Dickson, Brookside Nature Center, who found one emerging in Wheaton this week. Tina Stachura, also with Brookside Nature Center, sent us a photo of the cicada.



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Lecanium Scale

Lecanium scale was found on pin oaks in central Maryland on May 23. Eggs were found under the scale covers. Watch for crawlers over the next week.

Beneficials of the Week (by Paula Shrewsbury)

The aphid attack team – Lady beetles, Syrphid flies, and parasitic wasps

The cool weather and abundance of rain this season has provided optimal conditions for many species of aphids that attack ornamental plants such as roses, spirea, or crape myrtle. Most importantly in response to these high levels of aphids their predators and parasitoids are also showing up in great numbers. This is referred to by entomologists as a numerical response of natural enemies to their prey. Last week I was at a landscape site where there were roses and spirea that were infested with aphids. Upon examination I quickly realized that natural enemies were busily at work. On any given branch there were 2 or more lady beetle adults or larvae eating up aphids, and of those there were different species of lady beetles such as the Multi-colored lady beetle and the 7-spotted lady beetle. Also working the aphid populations were syrphid flies. Adults (also known as hover or flower flies) were busy feeding on pollen and laying eggs amidst the aphids, while their legless maggots were busy eating up the aphids. Looking more closely I noted that numerous aphid mummies (bloated-looking tan colored aphids) were present on the plant. These are aphids that have been parasitized by tiny wasps – wasp larva were developing inside the aphid and killing it. Although all of this was very interesting and exciting to watch, the bottom line was that there was hardly an aphid left to find on the roses, although clearly based on the abundant shed skins there had been many. There were still a high number of aphids on the spirea but my guess is these populations will be crashing shortly. I would describe this as an economically feasible form of pest management. So not only should you take time to stop and smell the roses but be sure to take time and watch the multitude of interactions in our landscape ecosystems.

To learn more about these natural enemies visit:

<http://www.ars.usda.gov/is/AR/archive/mar95/001030.beetlemagstory.htm>

<http://www.nysaes.cornell.edu/ent/biocontrol/predators/harmonia.html>

http://creatures.ifas.ufl.edu/beneficial/hover_fly.htm



Lady beetle adult with aphids (image by Mike Raupp, UMD)



Lady beetle larvae with aphids (image by Mike Raupp, UMD)

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Syrphid fly egg oviposited where there is abundant food (image by Mike Raupp, UMD)



Legless Syrphid fly larva feeding on aphids (image by Mike Raupp, UMD)



Aphid with a parasitic wasp developing inside known as an aphid mummy (image by Mike Raupp, UMD)

Weed of the Week, Chuck Schuster

Indian mock strawberry, *Duchesnea indica*, is a shade loving perennial found in landscapes and turf throughout the southeastern United States. Each leaf is trifoliate, or made up of three leaflets, is longer than it is wide, being up to three inches in length and up to one and one half inches wide. The leaflets are attached to the main petiole by way of small petiolules. The petiole is hairy. Indian mock strawberry will spread by stolons, which will be hairy. Flowers are on the ends of long stalks called peduncles, with a flower having five yellow pedals with large sepals below. The fruit is a fleshy berry similar to that of strawberries purchased or commercially raised. This is similar to wild strawberry, which has leaflets with pointed teeth on the upper majority of the leaflet, and have white flowers instead of the yellow flowers found on Indian mock strawberry.

Control of this weed in turf can be obtained using 2, 4-D and Triclopyr and in landscape settings using a non-selective product containing glyphosate.



Photo courtesy of Clemson University

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Plant of the Week, Ginny Rosenkranz

Mountain laurel, *Kalmia latifolia*, is in full bloom now, filling the shady areas with billowing flowers and shiny evergreen leaves. Although mountain laurels bloom best with full sun, the plants themselves do best in shady areas with moist, well drained acidic soils. The native mountain laurel flowers are borne in clusters and open up like miniature umbrellas in colors of pure white, white with pink or purple splashes or pink and purple. Many of the foliage on new cultivars is bright red rather than green, adding even more color to the landscape. Some cultivars have a band of color on the inside of the flowers rather than colorful spots and some cultivars have darkly colored buds that open to softer colored flowers. Mountain laurel plants grow slowly to 7 -15 feet tall and have a rounded outline if planted with room to grow. Leaves become a dark glossy evergreen. Leaf spot is often found on plants grown in the denser shady areas. Whitefly and lace bugs are the most common insect pests. **Photo by Ginny Rosenkranz**



What's in Bloom

Plant	Plant Stage (Bud with color, first bloom, full bloom, first leaf)	Location
<i>Azalea</i> 'Martha Hitchcock'	Full Bloom	Silver Run
<i>Chionanthus pygmaeus</i>	First Bloom	Silver Run
<i>Chionanthus virginicus</i>	Full Bloom	Silver Run
<i>Clintonia umbellulata</i>	First Bloom	Silver Run
<i>Kalmia latifolia</i> 'Olympic Fire'	First Bloom	Silver Run
<i>Laburnum x watereri</i>	Full Bloom	Westminster
<i>Magnolia tripetala</i>	Full Bloom	Silver Run
<i>Salvia</i> 'May Night'	Full Bloom	Silver Run
<i>Sorbus reducta</i>	Full Bloom	Silver Run

Degree Day Information (as of May 21):

Baltimore, MD (BWI)	421	Dulles Airport	444
Hagerstown, MD	358	Mechanicsville, MD	455
National Arboretum	521	Reagan National	626
Salisbury	469		



Stanton Gill



Chuck Schuster



Paula Shrewsbury



Ginny Rosenkranz



Karen Rane

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