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A New Address for IPMnet
Integrated Pest Management for Commercial Horticulture
extension.umd.edu/ipm

If you work for a commercial horticultural business in the area, you can report insect, disease, weed or cultural plant problems found in the landscape or nursery to sklick@umd.edu

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 (Regional Specialist, Wye Research & Education Center)
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Mushrooms
With the frequent rains this July, several landscape managers are reporting that mushrooms are cropping up on dead tree stumps, in lawns, and in mulch in the landscape.

Cut Flower Tour - University of Maryland Extension

August 6, 2013
Locations: Long Season Statice Farm, Salisbury, MD, and Seaberry Farm, Federalsburg, MD

Our cut flower farm tour on August 6th offers the unique opportunity for current and potential cut flower growers to learn about new growing methods and unusual cultivars to help develop and diversify their own operation.

A brochure is available at https://www.extension.umd.edu/ipm/conferences
**Lawn Fertilizer Law Manual - Now Available**

From Debby Freburger, MDA Nutrient Management Program:

The following link provides information in a press release of today’s date that the Professional Lawn Care Manual is now available on our website:


For those of you who would like to skip directly to the website of the manual follow this link:


The requirement for certification is October, 2013; however, there are no examination dates set at this point in time. Please review the Urban Nutrient Management website for those updates as they occur. If you have further questions regarding the subject, please contact Dr. Jo Mercer at jo.mercer@maryland.gov; and/or our Urban Nutrient Management Specialist, Judy McGowan at judy.mcgowan@maryland.gov.

**Spider Mites**

We are seeing increasing activity of two spotted spider mites and southern red mites this week. Look for fine, yellow stippling damage on foliage. The mites are usually found on the undersides of the leaves. Monitor by placing a piece of light colored paper on a clip board and tap the branches over the paper. Look for the mites using a 10 – 12X hand lens.

**Control options:** 1% horticultural oil, insecticidal soap, Abamectin (Avid), Sanmite, Floramite, Hexagon, Tetrasan.

**Looking for mites for research:** Paula Shrewsbury is looking for shrubs (15 - 20) with a “good” spider mite outbreak for a product trial on spider mites. Please contact Paula Shrewsbury at 301-405-7664 if you have a site for a trial.

**Spruce Spider Mites**

Spruce spider mites have been very active on spruce and junipers for the last two months, but we are mainly finding eggs in July. Untreated dwarf Alberta spruce were heavily damaged in May and June. This mite should become active again when the temperature drops down in late summer.
**Scale Update**

**White prunicola scale** (WPS, armored scale): Second generation of CRAWLERS are active this week in Laytonsville. Monitoring of WPS on Yoshino cherry on July 9 in (Degree days were 1508 DD) found 5% crawlers, 69% 3rd instar females with eggs and 26% without eggs. Based on our monitoring, there is a short period for the majority of the crawlers to emerge. Therefore, if degree day accumulations in your area are near 1508 DD you should closely monitor plants infested with WPS. If crawlers are active it is time to treat.

**Monitoring:** WPS has 3 generations per year. The most common host plants to monitor are *Prunus* species, lilacs, and privets. Look for white male and female “covers” on the bark of branches and trunks. In addition, to monitor crawler activity, you can apply tape (i.e. electrical or blue painters tape) with the sticky side out around the trunk/branch of the plant. White peach scale looks very similar to white prunicola scale but they have different host plants.

**Control:** When crawlers are out, apply pyriproxyfen (Distance) or buprofezin (Talus) mixed with 0.5 - 1%.

**Japanese maple scale** (JMS, armored scale): Monitoring JMS populations in Laytonsville on July 9 found 18% 3rd instar females with eggs, 12% 1st instars, 48% 2nd instars, 18% 3rd instar females without eggs and 4% pre-pupa males. We will continue to monitor for the second generation of crawlers. Degree days in Laytonsville were 1508 DD.

**Control:** At this point it is best to wait on applications of Talstar or Distance until the next crawler emergence which should start in August sometime. We will keep you posted.

**Indian wax scale:** Monitoring for Indian wax scale on July 8 in Columbia found all were early settled stages at this point. Degree days were 1570.

**Euonymus Scale:** Crawlers and settled 1st instars of euonymus scale is out in the central Maryland this week.

**Control:** Distance or Talus

**Foliar Nematodes:** Rearing their ugly stylets in hostas this week

Look for symptoms of foliar nematodes in hostas and ferns – we’ve had our first sample this year in the UMD Plant Diagnostic Lab. The recent wet weather has been favorable for movement of these microscopic roundworms from the soil and plant debris to leaf surfaces. Foliar nematodes (genus *Aphelenchoides*) will swim in films of water along petioles and foliage and invade leaves through stomates and small wounds. These plant parasites will move and feed within leaf tissue by piercing plant cells with their straw-like mouthpart called a stylet. Typical symptoms of foliar nematode infection are yellow to brown lesions that are bordered by main leaf veins; the ultimate lesion shape depends on the plant host. In hosta, the lesions are elongate “stripes”, while in ferns, anemones, begonia, chrysanthemum, heuchera and peony, the lesions are more angular or wedge-shaped. Sanitation is key to managing foliar nematode problems in the landscape as there are no effective products that will control nematodes in the landscape. The best management tactic is to avoid introducing this pest – carefully examine plants and avoid purchasing those with typical symptoms. If you already have foliar nematodes in the landscape, remove and destroy all infected plants, making sure to remove any old leaf debris as well.
**Miscanthus Blight**

Miscanthus blight is caused by the fungus *Stagnospora* sp. (*Leptosphaeria* sp. sexual stage). The symptoms usually start with tip dieback. Reddish or purple colored spots and streaks appear along the rest of the leaf and leaf sheaths below the blighted tips. On variegated cultivars the reddish streaks can occur in the white areas on the leaf. Miscanthus blight can be confused with other leaf diseases and can be mistakenly called rust, however, miscanthus also gets a true rust disease that has orange colored spores. Rust diseases can be easily diagnosed by rubbing a white tissue along the leaf and looking for the orange stain left by the spores.

**Cicada Killers**

While visiting a cut flower operation in Montgomery County, we found that cicada killers are active this week. These wasps usually do not harm people, but can cause a painful sting if bothered. Adults feed on flower nectar. An adult female will find a cicada, sting it and bring it back to her nest. She lays an egg on the cicada. The egg hatches and the developing wasp larva will feed on the cicada. If your customers are asking about these wasps, tell them that it is best to leave them alone.

**Rose Rosette Disease**

We are receiving pictures of roses with distorted new growth- clusters of shoots (like a witches’ broom) that are often reddish in color, and stems with excessive thorniness. Many of the plants are in commercial plantings and the roses are bush type landscape roses. These are the symptoms of rose rosette disease. Rose rosette has been around for several decades, but the causal agent, a virus, was only recently described. The virus is spread by an eriophyid mite. The disease was once thought to be an excellent biocontrol agent for the invasive multiflora rose, but we know now that many cultivated roses are also susceptible. Infected plants do not generally recover and plants found to be diseased should be removed from the landscape. Rose problems that can sometimes be mistaken for rose rosette include early infections of powdery mildew and injury from the herbicide glyphosate. If you find a plant that you suspect has rose rosette disease, please submit a sample of symptomatic shoots enclosed in a plastic bag (do not add moisture!) and ship via 1 or 2 day courier to the University of Maryland Plant Diagnostic Lab, 4112 Plant Sciences Building, College Park, MD 20742. Include information on type of rose and cultivar name, if possible.

The lab submission form can be downloaded from the following link: https://www.extension.umd.edu/plantdiagnosticlab/sample-submission-forms.
Caterpillars feeding on flower buds, petals, and heads
From: Paula Shrewsbury, University of Maryland, Department of Entomology

It has been a great year if you are a caterpillar. It started with very high densities and damage from cankerworms and now continues on to the flowers of many herbaceous plants. We have noticed damage to flowers by caterpillars that feed on or consume the flower petals or other flower parts, and others that bore into flower buds or heads. We have seen damage on plants in landscapes and in cut flower production. Some of these are easy to identify and others are more difficult. In addition, for many of these caterpillars there is little information on the biology and management of the pests. We will share what we have seen and know, and management recommendations.

On coreopsis and coneflower I am seeing a geometrid caterpillar known as the camouflaged looper, *Synchloara aerata*, that puts “trash” or bits of plant parts on its body. This camouflage provides excellent protection from predators. The adult of this looper is the wavy-lined emerald moth. The camouflaged looper is known to feed on a wide range of host plants including many composites such as ageratum, aster, black-eyed susan, boneset, goldenrod, ragweed, and yarrow; other hosts include birch, blackberry, chestnut, raspberry, rose, sage, and St. John’s wort. The camouflaged looper feeds mostly on the flower petals and other flower parts. There are two to four generations per year so caterpillars are active most of the season. The best way to monitor for this caterpillar is to look for pieces of “dead plant” moving on the plant. If you look closely you can make out the caterpillar under its camouflage.

On *Monarda* (bee balm) a caterpillar becomes active just as the buds are formed and continues for quite a while (I can still find them in the flower tissue). This caterpillar is a light green-yellow color and feeds on the bud by somewhat burrowing into them. If you pull apart the buds you can usually find one or two caterpillars. You usually see the black frass droppings scattered in the bud first and then notice the flowers produce far fewer petals or none. I am not sure which this caterpillar is.
On shasta daisy I just noticed a caterpillar this past week that webs the flower petals together and onto the flower center. If you pull apart the webbed petals you will notice an orange colored caterpillar tunneling through the center or head of the flower. The caterpillar moves fast when disturbed so watch closely. This caterpillar might be in the family Torticidae but I am not positive.

**Monitoring:** Visually search for damage to flowers and buds, frass, and the actual caterpillars. Catching the caterpillars early before they cause much damage is critical.

**Control:** Regardless of which caterpillar species is present, the management options are going to be similar. It will be the timing that will differ. Monitor closely for the first signs of damage and that is when control measures should be applied or initiated. Physical controls are best if you are in a situation where this is practical. Search for the caterpillars and squish them or put them in a container of soapy water. Prune off and get rid of infested buds or flower heads. If you have large numbers of plants that are being attacked you will likely need to apply chemical controls. A major issue of importance is to **apply product types and at times that will prevent negative impacts on pollinators! Read the product labels!** Apply products in the evening when pollinator activity is reduced. We recommend products with *Bacillus thuringiensis* (Bt for caterpillars) or spinosad for control of caterpillars. Note that young caterpillars will be better controlled than late instar caterpillars. Applications may have to be repeated for optimal control.

**One More Caterpillar...**
Mark Schlossberg, ProLawn Plus, Inc., emailed a photo of a caterpillar found on dogwood for identification. It was the paddle dagger moth caterpillar. It feeds on a wide variety of woody plants. It has bright yellow spots and black hairs on the body that end in a paddle shape.

**Redheaded Pine Sawfly**
Bob Nixon, Master Gardener, spotted his first cluster of redheaded sawfly larvae on mugo pine on June 9 which he noted is more than two weeks later than last year—and the larvae are much smaller in size. The larva has a reddish head and yellowish white body with six rows of irregular black spots. Larvae feed gregariously and strip the needles from the top terminals and branches. This native sawfly has two generations per year in this area. Trees growing on shallow soils, wet or dry sites, or under other stressful conditions are most often attacked.

**Control:** For isolated trees prune out branches where sawflies are aggregated. If numerous trees are infested, treat with Conserve or a synthetic pyrethroid.
**Brown Patch Disease**

Brown patch disease is active in fescue lawns now. The hot, humid weather with evening thunderstorms has been very favorable for this disease. Brown patch starts as circular spots and spreads out to turn whole areas brown. You may see grass blades with foliar mycelium in the early morning if it is warm and humid in the early stages of the infection process. Look for brown margins with tan centers on infected foliage. Although lawns turn brown they do recoup when the weather cools down.

To reduce the incidence of brown patch in tall fescue lawns avoid applying nitrogen in the spring. Nitrogen promotes soft, succulent growth that is more susceptible to infection by the brown patch fungal pathogen, *Rhizoctonia solani*.

For fungicide information, view the fact sheet, TT-38 Maryland Turfgrass Disease Control Recommendations.

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**White Grubs**

**White grubs of Scarab beetle: Japanese beetles, Oriental beetles, Masked chafers, and green June beetles**

The immature stages of scarab beetles are white grubs. Scarab white grubs live in the soil and feed on plant roots (ex. turf) and/or organic matter depending on species. We are seeing increased activity of scarab beetle adults this season which raises the question “how bad will the white grubs be this season?” Eggs of scarab beetles are laid in the soil and need moisture to develop and hatch. Irrigated turf will be optimal habitat for all these adults for egg laying. If we are in a drought in late June / July when scarabs are laying eggs then there should be high mortality of eggs and lower white grub populations. However, so far we are having lots of rain and the soil is optimal for egg hatch. So if we stay on this path, I “predict” white grubs densities will be high in late summer / early fall, along with their associated damage. White grubs can be a problem in lawn, golf, and nursery turf, and container and B&B nursery stock. I recommend you monitor your turf and nursery stock closely for white grub damage and activity. Most damaging to turf are Japanese beetle and oriental beetle grubs. Masked chafers and green June beetles tend to feed more on organic matter, so turf can usually tolerate pretty high densities of these species.
**Monitoring:** If you see high densities of adult scarab beetle activity you should monitor now and continue to monitor turf to determine if grubs are present. White grubs will be small, likely 1st instars now. Dig soil cores or cut 1 sq. ft. sections of turf in areas for white grubs in the soil where adult scarab beetle activity has been high and/or irrigated turf appears drought stressed. Identify which species of grubs you have in your turf. White grub species can be identified by the raster (hair) pattern on the underside of the abdomen. For help in grub identification go to: http://ohioline.osu.edu/hyg-fact/2000/pdf/2510.pdf

**Control:** If you have high scarab activity and / or have had historical problems with white grubs NOW (into the next month) is an optimal time to treat. If white grub control is warranted in turfgrass many of the neonicotinoids such as imidacloprid, clothianidin, and thiamethoxam are labeled and give good control. Mach2 is an insect growth regulator that provides good control of grubs. Acelepryn is a newer class of chemicals that has shown excellent control of grubs. Acelepryn has very low toxicity (no signal word required by EPA in MD). Once you get past mid-September the effectiveness of these products on the larger grubs goes down. Remember to rotate the class of control products that you use to reduce the likelihood of insect resistance.

**Beneficial of the Week, Paula Shrewsbury**

**Spiders are jumping for food**

There are over 4000 species of jumping spiders (family Salticidae) with more than 300 described in the U.S. These spiders gain their name because not only do they crawl or run quickly, but they often move by making short jumps from one location to another, jumping as far as 10 – 50 times their body length. Jumping spiders are recognized by their somewhat rectangular or box-like cephalothorax (front part of the body) which has 1 row of 4 very distinct dark eyes, with the center 2 eyes being quite large, along the front edge of the cephalothorax and 2 more pairs along the top (=8 eyes total). These spiders range in size from 3 to 12 mm, and vary in colors that camouflage against tree bark to bright metallic colors. Jumping spiders are not web builders. They actively hunt for their prey by foraging on the leaves and branches of plants. They usually hunt during daylight, will stalk to within a few body lengths of their prey, crouch, crawl slowly forward, and then lift their front legs and pounce to capture the prey. Once captured the spider releases proteolytic enzymes into or onto the prey which liquefies the tissue allowing the spider to suck up its food (Mmmm). Most jumping spiders are considered to be generalist predators, meaning they will feed on a broad diet of different types of insects. Jumping spiders have been seen eating stink bugs, lace bugs, flies, caterpillars, beetles, moths, and other mobile insects. Spiders make up a significant part of the natural enemy assemblage in our ornamental and turfgrass systems helping to prevent plant feeding insects from reaching population levels that cause economic or aesthetic damage. Be sure to look for these jumping spiders in your landscapes and nurseries and take advantage of the benefit they provide.
Jumping spiders also have some very interesting behaviors. In many species the male performs complex courtship displays in which he moves his body up and down and waves his front legs in a highly specific manner to impress a female. There are specific sound effects (ex. drumming on the substrate) associated with this courtship behavior. If the female “likes” or accepts the male they will then mate. After mating, the female lays her eggs in shelters lined with silk under stones or bark, or on the surface of plants. The female will often guard the eggs and the newly hatched spiderlings until they are old enough to forage on their own.

To see a video of this interesting mating behavior go to:  http://www.liveleak.com/view?i=322_1185412350
To see a salticid spider jumping and capturing prey go to: http://www.liveleak.com/view?i=42b_1183098607

**Weed of the Week, Chuck Schuster**

Marestail is being found in landscapes now. Marestail, *Conyza canadensis*, is also known as horseweed. It is an annual weed that has a short taproot, erect stout stems that are unbranched at the base, with a bushy-branched upper portion. It will grow from 1 to 6 feet in height. The leaves are alternate, numerous, and narrow with coarse white bristles about four inches in length and a quarter inch in width. Marestail reproduces by seed and can be found in both turf and ornamental settings. The seed is smaller than dandelion and can travel up to three-quarters of a mile. Prevention becomes difficult when surrounding areas allow it to go to seed. Fertility management in turf to promote thick turf and proper mowing helps keep this weed under control. Marestail will respond to pH management when keeping the soil in the desired range for most cool season turf. It prefers a lower pH. Dicamba, Dimension and 2,4-D are all very effective in turf settings. In landscape beds, post-emergent non selective herbicides (glyphosate) can be effective if used when the plant is small and actively growing. Resistance to glyphosate is being found in many regions in the US including in Maryland. Use the maximum label rate to prevent resistance when possible. Other options for control of this weed in landscape and nursery settings include pre-emergent use of dichlobenil (casoron), oxyfluorfen and oryzalin (Rout) has shown good control.

**Plant of the Week, Ginny Rosenkranz**

American hop hornbeam, *Ostrya virginiana*, is a small tree with thin but extremely sturdy leaves that are medium green on top and almost a yellow green on the bottom. They have very pronounced straight veins and double serrated or toothed margins. It is in the Birch family and grows only 15-30 tall and 12-25 feet wide. It is pyramidal when young but matures into a more rounded shape. It prefers moist, fertile, rocky or sandy loam soils with a pH of 5-7.5 and is intolerant to salt. American hop hornbeam is cold hardy in USDA zones 3-9. This tree can be used as a deciduous windbreak or as a source for food for wildlife. The plant is named for the attractive seed heads that look surprisingly like the hop vine used to create good beer. As the wood is very tough, it is used to create yokes for oxen or horned beasts. Leaf spot and mildew are the only pests.
### Degree Days (As of July 11)

<table>
<thead>
<tr>
<th>Location</th>
<th>Degree Days</th>
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</thead>
<tbody>
<tr>
<td>Baltimore, MD (BWI)</td>
<td>1687</td>
</tr>
<tr>
<td>Dulles Airport</td>
<td>1721</td>
</tr>
<tr>
<td>Martinsburg, WV</td>
<td>1599</td>
</tr>
<tr>
<td>Reagan National</td>
<td>1973</td>
</tr>
<tr>
<td>College Park</td>
<td>1973</td>
</tr>
<tr>
<td>Frostburg, MD</td>
<td>1072</td>
</tr>
<tr>
<td>National Arboretum</td>
<td>1973</td>
</tr>
<tr>
<td>Salisbury</td>
<td>1910</td>
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</tbody>
</table>

To check degree day (DD) accumulations in your local area go to: [http://www.weather.com/outdoors/agriculture/growing-degree-days/USMD0100](http://www.weather.com/outdoors/agriculture/growing-degree-days/USMD0100)

Note: degree days reported in this newsletter for various pests use the Weather.com website, 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>
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<tbody>
<tr>
<td>Monarda fistulosa</td>
<td>Full bloom Ellicott City (July 8)</td>
<td></td>
</tr>
<tr>
<td>Veronicastrum virginicum (culver’s root)</td>
<td>First bloom Ellicott City (July 8)</td>
<td></td>
</tr>
</tbody>
</table>

### Upcoming Programs

**Flower Trial Field Day - Penn State Extension**  
July 25, 2013  
**Location:** Manheim, PA  
http://agsci.psu.edu/flower-trial

**Mid-Season Aronia Twilight Tour**  
July 31, 2013 (5:00 p.m. to 7:30 p.m.)  
**Location:** Wye Research and Education Center, Queenstown, MD  
Contact: Andrew Ristvey, 410-827-8056 x113  
More information is available at: extension.umd.edu/ipm/conferences

**2013 FALCAN Truck and Trailer Safety Seminar**  
August 14, 2013  
**Location:** Frederick Fair Grounds  
Registration information:  
http://www.falcanmd.com/Forms.html

**Summer Cut Flower Tour**  
August 6, 2013  
**Location:** Salisbury and Federalsburg  
For the brochure: [extension.umd.edu/ipm](http://extension.umd.edu/ipm)

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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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