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**Integrated Pest
Management for
Commercial Horticulture**

www.ipmnet.umd.edu

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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Euonymus Leaf Notcher Caterpillar

Damian Varga, Scientific Plant Services, reported that the euonymus leaf notcher caterpillar was feeding heavily on evergreen euonymus in Severna Park (Anne Arundel County) last week.

Control: The damage may look bad, but it is so early in the season that generally the euonymus plant recoups without suffering too much. There is one generation per year.

The caterpillars will migrate in the landscape by the end of May and will be a small nuisance for people that do not like to see insects wandering about their landscape. If your customer must have control, then there are several options. Conserve, Talstar, and Orthene will all provide control of the caterpillars in early May. The caterpillars are getting a little big to obtain control with Bt at this point.



Ambrosia Beetle – Expands Its Plant Host Range

A nursery owner that started growing container produced pawpaw called Monday to report that they had 7 trees infested with ambrosia beetles. He destroyed the trees over the weekend so there was not a chance to see which species attacked the trees. It might have been an *Xylosandrus* species.

Birch Leafminer, *Fenusa pusilla*

Adult birch leafminers are emerging this week as lilacs reach full bloom. The adult sawfly is emerging from pupal cases in the ground. The adult female will cut into the leaf surface and lay eggs. The larvae will hatch in mid to late May and the leaf mines will show up in June.

Control: Generally river birch and cultivars such as ‘Duraheat’ and ‘Heritage’ can have small amounts of damage but they are fairly resistant. Gray birch and paper birch are highly susceptible. For the highly susceptible plants applying imidacloprid back in March would have helped. At this point a faster acting material such as ground application of dinotefuran (Safari) or a foliar application of TriStar or Orthene would control the young larvae when they hatch in the leaves.

Cherry Aphids

Cherry aphid, *Myzus cerasi*, is starting to show up on cherry stems this week. The adults are shiny and black which makes them easy to identify since no other aphid of this color attacks cherry. While it will infest and feed on tart cherry, it greatly prefers sweet cherry varieties. ‘Napolean’, ‘Black Tartaria’, ‘Lapin’, ‘Schmidt’, and ‘Windsor’ are the most susceptible varieties to injury from this insect, while ‘Dikeman’ and ‘Yellow Spanish’ are not seriously injured. Tart cherry varieties such as ‘Montmorency’, ‘Early Richmond’ and ‘English Morello’ are attacked less frequently, and when attacked the injury is slight. Alternate summer hosts include water cress, peppergrass and other members



Black cherry aphids

Photo: Whitney Cranshaw, Colorado State University, Bugwood.org

of the mustard family. This aphid overwinters as an egg on the bark of small branches. The eggs start to hatch as soon as the buds begin to open (April in most years, but in 2011 it is occurring in early May because of the cool wet spring). The young female aphids move into the buds to feed on any exposed foliage and can quickly establish colonies on the new growth. By mid summer (early July), winged females develop and migrate to alternate hosts, mainly of the mustard family, but a few aphids will remain on cherry during the entire season. Keeping these alternative host weeds down in the area will help control this aphid.

Control: Horticultural oil applied in March at a dormant rate helps in controlling this pest. At this point you could use a 1% horticultural oil as a relatively safe control measure.

Wool Sower Gall

Wool sower gall was found on white oak this week in Washington D.C. It is an oak gall that is commonly reported each year. This gall is caused by the tiny cynipid wasp, *Callirhytis seminator*. This gall is specific to oaks and is only found in the spring. The galls drop from the tree after the adult wasp emerges. They are seldom abundant enough to cause significant damage to the oaks. Control is not necessary.



Mayapple Rust

This week we received reports of rust on mayapple in the Potomac area and in Ellicott City. Mayapple is a native woodland plant used in lightly shaded moist naturalized landscapes. A common spring disease is caused by a rust fungus called *Puccinia podophylli*.



Rust on topside of mayapple leaf (left) and on underside of leaf (right)

The first symptoms are yellow spots on the upper leaf surfaces. The lower leaf surfaces reveal the orange rust spores that have infected the leaf tissues. Later in the season the spores will turn black and become the overwintering spore stage. This rust does not require an alternate host and so it remains on mayapple.

Management: Carefully inspect plants at installation to avoid introduction into the landscape. Since no alternate hosts are involved, removal of infected plants will help to prevent spread.

Jack-in-the-Pulpit Rust

Jack-in-the-pulpit is a native woodland plant used in naturalized landscapes. It occasionally gets a rust disease in the spring caused by the fungus *Uromyces caladii*. The initial symptoms are light spotting on the upper surface and under closer inspection when the leaf is turned over will reveal many orange colored rust pustules. No alternate hosts are required for this rust.

Management: Carefully inspect plants at installation to avoid introduction into the landscape. Since no alternate hosts are involved removal of infected plants will help to prevent spread.

Emerald Ash Borer

Emergence of emerald ash borer adults coincides with the full bloom of black locust. Black locust is starting to bloom in Washington D.C.. Dick Bean, MDA, is reporting that the pupae are at a stage that it will be about another 10 days to 2 weeks before emerging.

Press Release - April 29, 2011 (from Rebecca A. Bech, Deputy Administrator, Plant Protection and Quarantine)

Effective immediately, the Animal and Plant Health Inspection Service (APHIS) is adding the entire Commonwealth of Pennsylvania to the list of quarantine areas for the emerald ash borer (EAB), *Agilus planipennis*. Prior to this action, APHIS established quarantine areas in 43 Pennsylvania counties and the Pennsylvania Department of Agriculture established and enforced an equivalent State-level quarantine. However, on April 15, 2011, Pennsylvania rescinded its EAB quarantine. For this reason, APHIS is establishing the entire Commonwealth of Pennsylvania as a quarantine area in order to prevent the spread of EAB to other states.

Gypsy Moth Update

Craig Kuhn, MDA, is reporting that an inspector checked out an egg mass in Baltimore County (Back River Neck area), and it was completely hatched out with no larvae observed near the egg mass. He noted that most likely they hatched out a few weeks ago (mid to late April) in that part of the state. MDA's survey counts were low throughout the state last fall/winter, so MDA is not expecting any defoliation this spring/summer. Any reports of gypsy moth damage would greatly be appreciated so MDA can stay ahead of the problem if possible. He noted that the last population decline (also probably due to *Entomaphaga*) in 2003-2005 was quickly followed by outbreak years which peaked in 2008 with more acres needing treatment than they were capable of handling.



Early instar gypsy moth caterpillars (top) and late instar caterpillar (bottom)

English Ivy Leaf Spots

There are two diseases of English ivy that cause leaf spots – anthracnose and bacterial leaf spot. The symptoms of both diseases can be similar – brown or black spots and blotches on the leaves. Spots due to the bacterial pathogen *Xanthomonas campestris* p.v. *hederae* may appear greasy or have a yellow ring or border around them. Anthracnose lesions will often be tan or grayish, and sometimes the small, black spore-bearing structures of the causal fungus (a *Colletotrichum* species) will be visible with a hand lens in the tan or gray areas. Early infections of both diseases can look very similar, and in fact, both pathogens can be present in the same spot! Wet weather favors the development of both diseases - initial spots may run together and the entire leaf may become blighted and chlorotic, or covered with dark blotches. Infected leaves may die and drop off causing severe defoliation.

Management: Both diseases can be managed using similar cultural practices. When starting a new ivy bed, choose healthy plants with no evidence of leaf spot. If possible, avoid overhead irrigation, or water early in the day to allow leaves to dry off quickly and minimize leaf wetness. Rogue out infected leaves and vines, removing the debris from the planting. Thin out plantings periodically to increase air circulation and promote faster leaf drying. The use of copper fungicides has shown some efficacy in managing both diseases, but only when coupled with the above sanitation procedures.

Brown Marmorated Stink Bug

We are getting in several calls from garden centers asking about using floating row covers or netting to protect vegetable plants in customers' gardens this year. Blocking out the BMSB is probably a good idea if the customer can secure the netting around the plants without reducing light or air circulation too much around the plants. If the protective cover holds moisture around the plants, disease incidence may increase around the vegetable plants they are trying to protect. The floating row cover or netting may also block larger pollinators which would reduce their vegetable yields. This said, there are a couple of floating row cover options and netting sources. We do not endorse one over the other and your customers will have to experiment to find one that works the best for them.



Brown marmorated stink bug with mouthpart inserted into flower head of celosia

Floating row covers: Typar has a floating row cover that is made of polypropylene and allows 75% light transmission. It can be obtained in 94" wide lengths to 50' to 100' lengths. Covertan 19 I is a floating row cover that allows 85% light transmission. Varying widths and lengths are available. Both products have multiple suppliers, but one source is Wood Creek Farm and Supply online.

Netting with fine mesh: Smart Net has a netting that has a mesh that they say blocks Japanese beetles, stink bugs and cabbage butterfly size insects, but should allow smaller pollinators to enter and exit. They have netting available in 7', 12' and 15' widths and 300 ft lengths. They did not have pricing available when contacted this week but should have it soon. You can visit Smart Net at www.smart-net-systems.com. Tipper Tie Net (www.tipper.tie.com) has several nettings available. Many garden centers sold tipper tie nets when we had the 17-year cicada outbreak a couple of years ago. Various length and widths are available. Select a netting with small openings to block the stink bugs.

Asparagus Beetles

Many of your customers have planted vegetable gardens and asparagus is very popular for these home gardens. We received a sample of asparagus spears from Frederick County with asparagus beetle eggs attached to the spears. The eggs are black and very obvious on the spears. The gray-green larvae with black head capsules will hatch in the next week or so and will feed on the stems and foliage of asparagus. Monitor and remove spears with eggs to reduce the population.

Winged Carpenter Ants

John Speaker brought in winged (alate) carpenter ants this week. Winged alates are out at this time of year mating and looking for a site to set up a new colony. They will lay eggs in wood with high moisture content. The presence of winged carpenter ants inside the home during the summer, does not by itself, mean you have a carpenter ant nest in your home. Carpenter ants are one of the largest and most common species of ants in Maryland. Unlike termites, they only nest

in wood and do not eat it. Outdoors they nest in hollow trees, old stumps, and other wet, wood situations. Winged ants are the reproductive forms. They drop their wings soon after mating and begin to search for a suitable nesting site. They commonly enter structures but only rarely do they succeed in finding a nest site and most winged forms die before establishing a nest. If you have not seen carpenter ants in the home during the winter months, then you probably don't have much to worry about. When they do nest indoors, they prefer wood that is wet and areas by leaky pipes and drains, under leaky roof shingles, but they have been found in dry areas such as hollow doors and false beams. The presence of ants in the house during late fall, winter and early spring is usually a sign of a nest indoors.

Cottony Camellia/Taxus Scale, *Pulvinaria floccifera*

Norm Brady, Bartlett Tree Experts, sent in samples of cottony camellia/taxus scale from the St. Michael's Island area this week. The second instar females were swelling and several were forming their white waxy ovisac. Todd Franklin, The Brickman Group, also found this scale in Washington D.C. on May 4. Damian Varga, Plant Scientific Services, reported that John Fitzpatrick, Blue & Green LLC, found it on on Villa Santa camellia. There are no crawlers active at this point.



Cottony camellia/taxus scale on holly
Photo: Todd Franklin, The Brickman Group



Cottony camellia/taxus scale on Villa Santa camellia
Photo: John Fitzpatrick, Blue & Green LLC

Shadbush (*Amelanchier*) with Fireblight

While visiting a nursery this week I (Stanton) viewed several shadbush trees with fireblight. Unfortunately the shadbush was in bloom when we had warm and rainy weather making perfect conditions for fireblight. Other nursery managers may see dieback on shadbush in their nurseries this year. Prune out the tissue 18-24" below the dieback area. Prune in dry weather to avoid spreading the disease.



Sawfly on Ash

Slaven Ramic, The Brickman Group, found sawfly larvae on green ash in Waldorf on May 2.

Control: If necessary, control options include spinosad, acephate or a permethrin.



Sawfly larvae on ash that have recently molted
Photo: Slavin Ramic, The Brickman Group

Sawfly On Rose

Anthony Barbarino, McHale Landscapes, found early season sawfly damage on roses this week.

Control: Orthene or a pyrethroid (Talstar or Pymethrin).



Sawfly damage on roses
Anthony Barbarino, McHale Landscapes

Winter Dieback

Redbuds look good at this time of year, but several nursery managers and landscape managers are reporting an unusual amount of winter damage on redbuds this season. I have seen several trees with many dead branches and epicormic growth coming off main branches and the trunk. The severe drop in temperatures back in early December caused a lot of winter damage since the plants were not able to harden off gradually.



Columbine Sawfly

Gaye Williams, MDA, reported that Shelley Hicks, also with MDA, collected several full-grown larvae of columbine sawfly, *Pristiphora aquilegiae* (Vollenhoven), on May 1-2, 2011 in Galesville (Anne Arundel County). She noted that the larvae had defoliated leaves of one columbine down to the midveins. Larvae began pupating on May 3-4. These small green caterpillar-like larvae are easily overlooked among host leaves until damage is severe. To see photos, go to bugguide.net and search for 'columbine sawfly'.

Boxwood Leafminer

Adult boxwood leafminers have emerged this week on boxwood here at the research center in Ellicott City. The adult leafminers have a bright orange body. The pupal cases may also still be found on the undersides of the foliage where the adults emerged.

Control: Systemic insecticides such as imidacloprid should provide 2 – 3 years of control of this pest. Applications of dinotefuran (Safari) should provide one season of control and is uptaken into the plant faster than imidacloprid. If you are on a budget an application of a synthetic pyrethroid such as bifenthrin or permethrin will kill adults, but it will also kill many beneficial organisms in the process.



Cheap Energy

As part of our push to help the green industry be more sustainable we have been encouraging you to adopt alternative energy. We mentioned that GE was moving into solar panel production. There was recent article about a company called First Solar that has been leading the way with thin film solar panels. In 2008-09 they were able to obtain 10.9 % efficiency. They have also been able to lower the cost of its product from \$3 to \$0.85 per watt (close to half the cost of crystalline modules). First Solar is aiming to obtain 15% efficiency over the next 4 years and decreasing the costs to \$.52 per watt. If they can obtain this it will make PV power as cheap as power from fossil fuel. If oil prices keep going up this will not be hard to do.

Ichneumon Wasp

Marty Adams, Bartlett Tree Experts, brought in an ichneumon wasp that he found on a stump of a silver maple. These predaceous wasps have been covered in the 'Beneficial of the Week' sections such as March 21, 2008 (<http://ipmnet.umd.edu/landscape/LndscpAlerts/2008/08Mar21L.pdf>).



Beneficial of the Week, Paula Shrewsbury

Natural enemies vs. aphids: Who wins?

There is a coffee shop that I visit frequently in the morning that is bordered by landscape beds filled with roses and spirea, along with other plants. I can't help but to observe these plants close up to see if there is anything "cool" going on. I am seldom disappointed at this time of year. Two or three weeks ago the aphids on the roses, especially on the new growth, were starting to build up to some pretty high densities. This week I needed aphids for a research project and none were to be found on the roses! I did however find very high densities of spirea aphid on the spirea. I predict that when I go back next week and check the spirea most of those aphids will be gone too. These plants were not sprayed with pesticides. The aphids were suppressed by natural enemies that moved into the landscape planting in response to "food" being available. The

natural enemies started on the rose aphids and now have moved over to the spirea aphids. There is a suite of natural enemies that are very efficient at finding populations of aphids and knocking back their numbers to near zero. In observations this week, flower (or syrphid) fly larvae and multi-colored Asian lady beetle adults and larvae were found in abundance on the spirea plants happily feeding on the aphids. There were also numerous “aphid mummies” which are aphids that have been parasitized (and killed) by tiny wasps. Particularly abundant were the flower flies. The adults, although they are true flies, are bee mimics and feed on the nectar and pollen of flowers. They cue in on branches infested with aphids and lay small white eggs individually on the leaves. Once the eggs hatch the maggot-like larvae voraciously search for and consume aphids. It is quite exciting to watch these little guys in action (to see a video clip go to: http://www.raupplab.umd.edu/?BugOfWeek_18F.html). So the take home message is: wait, don't spray, and the natural enemies will come – and they will win over the aphids. Natural enemies will often provide biological control of herbivores if we give them a chance.



Flower or syrphid fly larvae are voracious predators of aphids
Photo: M. J. Raupp, UMD



Flower or syrphid flies feed on nectar when they are adults. These true flies mimic bees.
Photo: M. J. Raupp, UMD

Weed of the Week, Chuck Schuster

Meadow fescue, *Festuca pratensis* or *Schedonorus pratensis*, is a perennial grass often used as a cut forage or pasture material in the United States. An introduced species from Europe, it prefers acid soils where soil fertility has not been maintained. Recently brought in for identification, it was showing up in a turf setting and was not the typical fescue that most have noticed. Meadow fescue will develop a dense creeping root system; will have smooth leaf blades on the underside, rough on the top. This plant can grow to a height of five feet but will survive regular mowing and produce seed. Leaves are four to five inches in length and produce panicles that are narrow and contracting to slightly spreading. Flowers occur in groups of six to twelve from each spikelet, and will be greenish to purple in color. This grass will



Meadow fescue
Photo: Chuck Schuster

grow into thick clumps and compete with other turf. In a landscape setting, it can reach heights of several feet and spreads quickly by seed. It starts early in the spring and will produce a seed spikelet in May.

Control in a landscape setting can be obtained using non selective products that will include glyphosate products in landscape settings. it is not specifically called out on turf labels currently for any selective products.

Is it a weed or isn't it? If it is out of place it helps to know what it is as we attempt to control it.



Meadow fescue
Photo: Chuck Schuster

Plant of the Week, Ginny Rosenkranz

Woods geranium, *Geranium maculatum*, is a native perennial wild flower that grows in both moist and dry shade. A deciduous ground cover, woods geranium will also grow well in open woods, around the edges of a wood and can be found in the wild along roadsides as well. *Geranium maculatum* has a number of creative names including spotted geranium, wild geranium, alum root, alum bloom and old maids nightcap. It will grow 8-12 inches tall with un-branched stems and leaves that are palmately lobed with 5 or 7 deep lobes. The slightly fragrant flowers, which start blooming in April and continue through early summer, are arranged with 5 petals and come in pale pink, rose lavender and purple. The seed capsule is shaped like a cranes beak and when ripe, the capsule explodes to scatter the seeds. After the plants have gone to seed, they usually go dormant during the heat of summer. They are hardy from USDA zone 3-9 and are considered deer resistant. When in flower, the plants will attract many native butterflies and skippers. No pests were listed.



***Geranium maculatum* 'Espresso'**
Photo: Chuck Schuster

PLANT	PLANT STAGE (Bud with color, First bloom, Full bloom, First leaf)	LOCATION
<i>Asimina triloba</i>	Full bloom (May 2)	Silver Run
<i>Fraxinus pennsylvanica</i>	First leaf (May 3)	Waldorf
<i>Neviusia alabamensis</i>	Full bloom (May 2)	Silver Run
<i>Pieris floribunda</i>	Full bloom (May 2)	Silver Run
<i>Rhododendron nudiflorum</i>	Full bloom (May 2)	Ellicott City
<i>Robinia pseudoacacia</i> (black locust)	First bloom (May 1)	Washington D.C.
<i>Staphlea trifolia</i>	Full bloom (May 2)	Silver Run
<i>Trillium luteum</i>	Full bloom (May 2)	Silver Run
<i>Trillium grandiflorum</i>	Full bloom (May 2)	Silver Run
<i>Viburnum prunifolium</i>	Full bloom (May 2)	Ellicott City

Degree Days (As of May 5)

Baltimore, MD (BWI)	373
Dulles Airport	366
Frostburg, MD	159
Martinsburg, WV	303
Mechanicsville, MD	412
National Arboretum	434
Reagan National	417
Salisbury	422

Upcoming Programs:

May 18, 2011 Pest Walk

Location: Eastern Shore

Contact: Ginny Rosenkranz, 410-749-6141

May 26, 2011

Taking Care of Trees: Top to Bottom Organic Turf Care - Opening Pandora's Box

Location: Gwendolyn E. Coffield Community Recreation Center, Silver Spring, MD

June 2, 2011 Pest Walk

Location: Carroll County Extension Office, Westminster, MD

Contact: 410-321-8082

June 10, 2011

Procrastinator's Pest Management Conference

Location: Montgomery County Extension Office, Derwood, MD

June 23, 2011

MNLA Field Day

Location: Priapi Gardens, Cecilton, MD

Contact: 410-823-8684

June 25, 2011 (Saturday)

Summer Maryland Christmas Tree Association Meeting

Location: Sewell's Tree Farm, Taneytown, MD

Contact: 410-452-9793

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