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TPM/IPM Weekly Report

for Arborists, Landscape Managers & Nursery Managers

September 16, 2011

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AGNR Open House
October 1, 2011
http://agnropenhouse.umd.edu

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

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Regular Contributors:
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists) and Brian Clark (Extension Educator, Prince George's County)
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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Alternative Energy and Labor Saving Conference Set for Oct. 20th

Brent Rutley, Capitol City Contractors, has generously opened up his farm on October 20, 2011 for green industry professionals. We will start the morning with demonstrations of solar arrays, high efficiency wood burning stoves, hot water solar systems, and wind turbines. This program provides a great opportunity to see this equipment up-close and ask questions of an owner who has a couple years of experience with saving money at his nursery and landscape operation using alternative energy sources. Chuck Schuster, University of Maryland Extension, will have equipment at this site that will demonstrate energy saving technology with live demonstrations.

In the afternoon we will travel up to Falcon Ridge Farm in Westminster, where there will be a catered lunch, followed by a talk by Jonathan Kays, University of Maryland Extension, on the new high efficiency wood burning stoves that can be used to heat office buildings at your operation. We will also discuss the benefits of a solar array which was installed in January at the farm. A representative from BGE Home will talk about a newly installed geothermal system that is being installed at Falcon Ridge Farm the week of October 10, so you will be looking at a recently installed system. The BGE representative will walk you through the steps in installing geothermal and answer all your questions on costs, efficiency and energy savings. It should be a great day and we highly encourage you to take advantage of these various views of alternative energy sources that can help you save money in the long haul.

Details on registering for this program will be coming soon.

Leaf Spot on Walnut and Nut Trees

The week of September 9 was rain, rain and more rain. This weather made perfect conditions for leaf spot diseases that show up late in the season on walnuts and other nut bearing trees. *Cercospora* and other leaf spot diseases disfigure the foliage in September, making foliage yellow with many brown spots. It is generally too late in the season to do any preventative sprays.

Leaf Spot on Cherry Trees

As a cherry orchard owner, I (Stanton) am very aware of late season leaf spot diseases because of the damage I have experienced over the years on my own fruit bearing cherry trees. We were lucky this season in that we had a very dry July and August (if you want to call a drought being lucky), which is when leaf spot diseases moving into the crop can be devastating to the next year's crop. We are moving into mid-September and this is considered the cutoff point by many fruit pathologists. If the leaf spot diseases move in after mid-September you might get early defoliation, but it is late enough in the season that next year's fruit s generally not impacted.

George Sundin, Plant Pathology, Michigan State, had these comments about leaf spot of cherry trees:
Cherry leaf spot is the most important fungal disease of tart and sweet cherry. The leaf spot fungus Blumeriella jaapii infects leaves with symptoms first appearing on upper leaf surfaces as small purple spots. As spots accumulate on leaves, the leaves turn yellow and defoliate. The amount of lesions required to cause leaf yellowing and drop is variable. Late summer (August, early September) defoliation reduces the ability of trees to store photosynthate in roots leading to an overall loss of vigor and leaving trees more susceptible to killing by winter injury. Early-defoliated trees also typically exhibit reduced flower bud formation and often set less fruit the following season.

Symptoms of cherry leaf spot infection are typically first seen in the tops of trees with the observance of yellow leaves. Infection usually occurs in the tops of trees first, because this foliage may not be covered effectively by airblast fungicide application, and also because newly-growing, unprotected leaves occur in the tops of trees as well. Since the leaf spot fungus sporulates out of the underside of leaves, and these spores are carried downward via rain and wind, the fungus can very quickly infect all of the leaves on a tree and leaves on adjacent trees.

Each new infection results in the production and spread of additional spores (termed a secondary cycle of the disease). These secondary cycles will continue throughout the rest of the growing season. Leaf loss through defoliation is what is critical. The earlier leaves fall, the more profound impact on tree health and winter hardiness. The first appearance of yellow cherry leaf spot-infected leaves usually results in initial defoliation within four to six weeks and significant defoliation within six to eight weeks, depending on the season.

Thus, trees that currently contain large numbers of yellow leaves are at risk of becoming defoliated before the beginning of September. We usually regard mid-September as kind of a magic target date for tart and sweet cherry trees in terms of holding their leaves. If trees retain a significant number of green leaves by September 10-15, they should be in good shape entering the winter because they should retain an adequate amount of leaves into October and beyond. However, if trees are defoliated prior to this time, they are at risk of significant winter injury, including tree death, again depending on winter conditions.

Banded Ash Clearwing Borer

The first adult males were found in pheromone traps in Westminster on September 11. The rains probably were suppressing earlier flight activity. The activity just started, so we are still a week or so away from peak flight activity. Generally the males find the females, mate and the females start laying eggs on susceptible ash trees within 2 – 3 weeks after mating.
Control: Protective sprays of Permethrin (Astro), bifenthrin (Onyx) or Acelpryn (from Du Pont Company) can be applied in the next week or two.

Premature Leaf Drop

We've received additional reports of premature leaf drop this week. Eric Wenger, Complete Plant Health Care, Inc., noted premature leaf drop on both Norway maple and red oak in Laytonsville two weeks ago. He noted that leaf drop actually occurred after some decent rains, but was not caused by storms or wind etc… Marie Rojas, IPM Scout, noted that one particular hawthorn, *Crataegus laevigata* 'Superba' (crimson cloud hawthorn), was also almost devoid of leaves just like she saw on the Yoshino cherries and the *Tillia* last week. Marie had seen that they were dropping leaves during previous site visits, but noted that what is so interesting is that on her visit to the site on September 14, the trees had actually begun to push new leaves out here and there.

Bob Nixon also noticed early leaf drop five or six weeks ago on some of the Yoshino cherry trees in Clarksville. He noted that one group has lost an estimated 75-80% of their leaves. The remaining leaves are yellowish. There is some leaf litter along the sides of the road even though the grass is mowed weekly and fallen leaves removed. This group looks to be all Yoshino cherry. Except for several small replacement trees, another group of cherries in the same area have retained most of their leaves. A third group are replacement cherry trees that were planted in about 2009. All leaves are dark green and he does not see evidence of leaf drop. He is not sure which type of cherries are in this group.

Phil Normandy, Brookside Gardens, is reporting that once again he is seeing a lot of leaf drop, nearly total defoliation on some *Prunus subhirtella* which was the same as in August 2010…he noted it looked like the tree was checking out but it came back fine. Not all are doing it. He and Carlos Iraheta, Pope Farm, noticed some early leaf drop on many different honey locust varieties, *Gleditsia triacanthos inermis* ('Imperial', 'Shademaster', and 'Skyline'), at Pope Farm Nursery. Phil is also seeing a lot of leaf drop on birches, *Betula populifolia* 'Whitespire' and *Betula papyrifera* Renaissance Reflection™.

Various levels of leaf drop in one local area
Photos: Bob Nixon

BMSB and A New Insecticide

Back in June we mentioned that a new formulation of a pyrethroid that has an ester, rather than chlorine on the molecule, was going to receive a Section 18 use for brown marmorated stink bugs and bedbugs. The label will allow it to be sprayed in homes on open surfaces. The product from Syngenta was listed on the web this week under the name Demand CS and Demand EZ. The products will probably be very popular as BMSB moves back into residential homes this fall.

Imprelis Information

V. Bruce Steward, DuPont Inc., sent an email to make sure people are aware of three new Imprelis herbicide documents that were released on September 6, 2011 and posted to http://www.imprelis-facts.com/letters-and-statements/. The three documents are:

1. Letter to Lawn Care Professionals
2. Letter to Golf Course Superintendents
3. Photography Instructions Before Removing Trees

Galls on Oak (That look like strange acorns)

Melissa Gildea, LOTUS Design and Consulting, LLC, found an interesting growth on a swamp white oak near the Potomac. Melissa noted that the individual pieces seemed like plant tissue and that this was growing right on the end of the branch at the bud. Marie Rojas, IPM Scout, is also seeing the same thing in Frederick on *Quercus* x *robur* (English oak). We have received photos and samples of these 'acorn-like' galls in recent years. The galls are caused by a cynipid gall wasp, *Adleria strobilana*. The galls develop after the wasps hatch and begin feeding along the stem. The galls start out yellow, then pink to red and eventually turn brown.

Galls caused by cynipid wasps on English oak (left, photo by Marie Rojas) and found on swamp white oak (right, photo by Melissa Gildea)

Lace Bugs on Hawthorns and Oaks

Marie Rojas, IPM Scout, is still seeing very high populations of lace bugs both on *Crataegus crusgalli* var. *inermis* 'Cruzam' (crusader thornless cockspur hawthorn) and several species of oaks (*Quercus* x *robur* and *Q. acutissima*). Lace bugs cause white stippling on the upper side of the foliage and leave black fecal spots on the undersides. There are several generations a year.

Control: Feeding activity is finishing up for the year. A systemic such as imidacloprid can provide season-long control. Treating with horticultural oil when lace bugs are found is also effective. When using hortcultural oil, be sure to get thorough coverage of the plant for good insect control.

Heavy lace bug damage on oak (left) and lace bugs on underside of oak leaf (right)
Photos: Marie Rojas, IPM Scout

Oak Slug Sawflies

Marie Rojas found oak slug caterpillars feeding on *Quercus coccinea*, scarlet oak. Look on the foliage for slug sawfly larvae that are slimy, have shorter legs and more than five pairs of prolegs.

Control: Usually not necessary to control this sawfly but Conserve would kill the caterpillars if control is needed. The caterpillars are not usually found in significant numbers to warrant control.

Oak slug sawflies on scarlet oak
Photo: Marie Rojas, IPM Scout

Bees and The Goldenrain Tree

We received several comments in response to last week's article on bees around goldenrain trees:

Gaye Williams, MDA, noted that she observed the same phenomenon under two *Vitex agnes-castus*, chaste trees, which are in a raised bed behind a low brick retaining wall. The small trees overhang a wide brick entry-way, so everything that falls collects on the brick surface. Gaye repeatedly saw many dead bumble bees on the ground among the fallen spent flowers which continued during the entire flowering period. She never saw walking or writhing bees, only dead ones. No pesticides are used on these plants.

Phil Normandy, Brookside Gardens, pointed out that the report refers to a different species than is grown here. *K. bipinnata* is marginally hardy here. Aside from its foliage differences, it can be separated from our own *K. paniculata* by blooming around Labor Day (vs. first and second week of June) followed immediately by very showy peach-colored 'lanterns'. Has anyone noted dead bees under *K. paniculata*?

Ambrosia Beetles

Glenn Gladders, Delaware Forest Service, sent photos taken on August 3 in Delaware of beetles and frass projections on a wound from a lightning strke on a large *Liriodendron tulipifera*.

Frass from ambrosia beetle in crack of tree created by a lightening strike
Photo: Glenn Gladders, Delaware Forest Service

Leopard Moth Caterpillar

We received a sample of a leopard moth caterpillar, *Zeuzera pyrina*, boring into a dogwood branch. This species was introduced from Europe into the northeastern United States prior to 1879 and has a range extending from Maine to Maryland. The adult, which is out in summer, is a highly distinctive species with a very furry white thorax marked with six black spots and heavily spotted white wings. The moth flies from June to September depending on the location. The caterpillar feeds on various deciduous trees and shrubs. It feeds internally for two or three years in the stems and branches before emerging to pupate under the bark. It can be a pest of fruit trees such as apple and pear.

Leopard moth caterpillar in dogwood stem

Control: Woodpeckers are the most important natural control. Squirrels have been observed feeding on larvae. Removal and destruction of infested branches is recommended, and heavily infested trees should be destroyed. The impact of injury may be reduced by maintaining trees in a vigorous condition. A preventative spray of bifenthrin (Onyx) or permethrin (Astro) can be applied in early May, but healthy tree should not have a problem with this borer. The best advice is keep plants healthy and growing vigorously.

Beneficial of the Week, Paula Shrewsbury

A giant web and a giant black and yellow garden spider

An adult female black and yellow garden spider & the stabilimentum of the web. Photo: Ted C. MacRae http://beetlesinthebush.wordpress.com

An egg sac of the black and yellow garden spider. Photo: Jerry Armstrong, bugguide.net

Web building garden spiders belong to a family known as Araneidae, the orb weavers. The black and yellow garden spider, *Argiope aurantia* is very common and quite noticeable, although some individuals may be unpleasantly surprised if they walk into a web unexpectedly. Webs of the black and yellow garden spider are circular in shape, may span up to two feet, and are often connected to tall vegetation on either side of an open area, such as a walking path. The spider itself is quite large (females are 3/4 to 1" in size plus legs) and has beautiful black and yellow coloring on its abdomen and very long legs. Females are more colorful than males. The black and yellow garden spider builds a large band of a zigzagging silk in the center of her web. This extra heavy band of zigzagging silk is called the stabilimentum. The adult female spider can often be found sitting in the web on the stabilimentum. Some of the students from my lab found a beauty in a nursery and brought her back to the lab as a pet. We have had quite a lot of fun watching our spider as she captures and consumes the many stink bugs we feed her. When a prey item lands in the female spider's web she begins to rhythmically flex and extend her abdomen and legs which gets the large web swaying, almost like a child on a swing. This common behavior of orb weavers is referred to as web-flexing and is believed to cause prey to become further entangled in the web. This behavior likely has other purposes too. The spider then touches several stands of her web with her legs which seems to help her locate the prey. The spider then quickly runs to the prey and with amazing speed she spins and wraps her prey in silk that shoots out of spinnerets at the end of her abdomen, completely immobilizing the prey item. For those of you who are Lord of the Rings fans you immediately think of the wicked spider that captured and wrapped Frodo as he was on his journey to return the ring. Sometimes the spider will bite and consume the prey right away, other times she will return to the center of the web and go back later, collect the prey, and bring it back to the center of the web where she devours it. The black and yellow garden spider has some impressive fangs to assist in this process. After a week or so of a eating stink bugs, our very pregnant "pet" spider deposited and hung an egg case over an inch in diameter in the corner of her cage. Don't worry… we placed the egg case in a protected location outside so come spring the thousands of baby black and yellow garden spider that emerge from the egg case can continue in life eating stink bugs and anything else that happens into their webs.

For more information on black and yellow garden spiders and a video of a female eating a brown marmorated stink bug go to: http://www.bugoftheweek.com/ (Sept. 12, 2011 episode)

Weed of the Week, Chuck Schuster

Virginia buttonweed, *Diodia virginiana*, has been identified recently in a landscape setting. This difficult to control perennial weed, prefers moist to wet areas such as near downspouts or other moist sites. This spring and with the recent rains, it is doing well. Leaves are opposite, on slightly hairy stems, with lance-shaped leaves that are one to two inches in length, by one inch in width. Leaves join the stem with a thin membrane which may have up to three stipules that may appear to be long hairs. Stems will root at the nodes, usually growing along the soil, but can grow upright. Flowers have four white petals, and will occur in the area between each leaf axil. The fruit is a small capsule, usually hairy, that will contain two seeds. This weed will often have a yellow

mottling later in the season as a result of a virus. This plant reproduces by seed and by stem pieces. It is similar to common buttonweed, but common buttonweed will have a narrower leaf, an upright growth habit and will be much more hairy.

Virginia buttonweed
Photo: Virginia Tech Weed ID Guide

Cultural control includes removal of all plant parts - hand digging will be difficult. Attempting to provide a dry area where moisture pools will also help. Monitor irrigation to prevent excess moisture in turf and landscape settings. Chemical control will require more than one application. Atrazine has been used to prevent seed germination in some settings, but this would not include sites that have been exposed to this weed, and plant material has been removed. In turf, use of 2, 4D, dicamba (Banvel, Clarity, and Vanquish), fluroxypyr (Spotlight) sulfosulfuron (Certainty) has been successful, but use caution with some of the more sensitive turf varieties. In landscape settings, products that contain glyphosate have been effective, but caution needs to be considered near exposed surface roots, suckers and wood stems. Repeated applications may still be necessary in many cases.

Plant of the Week, Ginny Rosenkranz

Passiflora incarnata, passion flower vine, also known as maypop, is a native deciduous vine that grows 8 - 12 feet long using axillary tendrils to hang on to trees or structures. The dark green leaves are palmately veined with 3 to 5 deep lobes and a silvery underside. The flowers have purple petals and the sepals, which are also purple, are fringed and crimped, giving the flowers a light and airy look. The pistils and stamens are light colored and contrast with the purple flower petals. The edible fruit is large, oval and yellow-orange that is hollow inside and when crushed, makes a popping sound. *Passiflora incarnata* grows best in full sun to shade and light, evenly moist soils. It is hardy in USDA zones 6-9, often dying back in the winter to the roots, then growing back in the spring. As a native plant, it attracts many varieties of butterflies including the zebra longwing and the gulf fritillary. Pest diseases include bacterial spot, root rot, fusarium wilt and anthracnose. Native caterpillars feed on the foliage.


Passiflora incarnata
Photo: Ginny Rosenkranz, UME

Degree Days (As of September 15)

Baltimore, MD (BWI)	3747	Dulles Airport	3662
Frostburg, MD	2462	Martinsburg, WV	3392
National Arboretum	4095	Reagan National	4148
Salisbury	3918		

College of Agriculture
and Natural Resources
Open House

October 1, 2011
10:00 a.m. to 3:00 p.m.

Location: Central Maryland Research and Education Center, Clarksville Facility, 4240 Folly Quarter Road, Ellicott City, MD 21042

agnropenhouse.umd.edu

Upcoming Programs:

Green Industry Energy Tour
October 20, 2011
Locations: Capitol City Contractors (Woodbine) and Falcon Ridge Farm (Westminster)

Greenhouse Conference
November 18, 2011
Location: Chesapeake College, Wye Mills, MD

Association of Specialty Cut Flower Growers National Conference
November 7-10, 2011
Location: Reston, Virginia
www.ascfg.org

Pest Management Conference
December 1, 2011
Location: Carroll Community College, Westminster, MD

Advanced Landscape Plant IPM PHC Short Course
January 3-6, 2012
For registration information contact: Avis Koeiman, Department of Entomology
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