TPM/IPM Weekly Report for Arborists, Landscape Managers & Nursery Managers
University of Maryland Cooperative Extension
Central Maryland Research and Education Center

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Go to www.agnr.umd.edu/IPMNET to view past issues of this IPM report and to find about upcoming classes and seminars. Please call in if you are finding insect, disease, weed or cultural plant problems. Send submissions to Sklick@umd.edu or call Stanton Gill at 301-596-9413.

Fall Webworm, *Hyphantria cunea*

The larvae of fall webworm were found in the Westminster area on June 17 creating small webbing of tip growth on cherry and hawthorn. Damian Varga, Scientific Plant Service, reported them on mulberry on June 15 in Sykesville. Fall webworm can be found on birch, cherry, elm, sweet gum, and over 90 other species of hardwood plants. The larvae are small at this time and are white with a black head capsule. There are long setae (hairs) covering the body. This is the first generation of this pest. There will be a second later this summer.

Monitoring: Look for slight webbing on the tip growth of plants.
Control: The webs are small enough at this time of the year so the easiest thing to do is prune off the tents. A product with *Bacillus thuringiensis* (Bt) for caterpillars, a biological control, will control the larvae.

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Bagworms

Start examining Leyland cypress, spruce, and arborvitae this week for the presence of small green to brown colored bags with the small bagworm larvae inside. We are receiving reports of activity across the state this week.

Control: Bt product (biological), Conserve (biorational), Confirm (insect growth regulator), Orthene (systemic), synthetic pyrethroids (these work but will take down a lot of beneficial organisms).

Japanese Beetles

More reports of Japanese beetles are coming in this week. Mating pairs of beetles were reported on spruce in Adamstown. Japanese beetles have also been spotted in Westminster (feeding on cherries), Olney, Columbia, Ellicott City, Beltsville, and Wye Mills and Ridgely on the eastern shore.

Control: Treating Japanese beetle preferred host trees with a neonicotinoid insecticide now should provide control. Acephate (Orthene) or pyrethroids (Astro) work well for adult control. For those who prefer a more biorational approach, use Azadirachtin (a neem product) when beetle populations get high. Repeated applications will be necessary.

Thrips

The hot weather is generating huge populations of western flower thrips and other flower thrips this season. Hot dry weather is great for thrips populations and we are having ideal weather conditions in June for them to thrive. We are seeing damage on several species of bedding plants including marigolds, sunflowers, lisianthus, and verbena. They use their piercing mouthpart to pierce the plant tissue and extract plant sap.

Monitoring: Examine foliage of plants for stippling damage to foliage. Look at the undersides of foliage for the round, green to black fecal droppings from thrips. Flower thrips tend to feed out in the open whereas the western flower thrips tend to be more cryptic and can be found in unopened flowers, in leaf axils and small crevices. Examine the flowers of the plants since the larvae and adults thrips will feed on flower pollen.

Control: With the increased temperatures, the numbers of predatory insects such as the minute pirate bug are also being found in high numbers and will help control the thrips' populations. You can treat with Conserve, Mesurol, or synthetic pyrethroids.

Photo of the minute pirate bug, *Orius insidiosus*, by John Ruberson, University of Georgia, Bugwood.org

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Winged Euonymus Scale, *Lepidosaphes*

I examined the winged euonymus scale at CMREC on Sunday evening and we had the first crawlers emerging.
Monitoring: Place a light colored sheet of paper under foliage and rap it sharply to dislodge crawlers for examination with your hand lens.
Control: Distance, Horticultural oil. Note - Use oil on plants that are not under drought stress to avoid injury. We are conducting a trial this summer at CMREC to evaluate use of Safari applied as a soil drench for control of this scale.

White Pine Weevil in Spruce

Marty Adams brought in a sample of white pine weevils feeding on spruce last week. This weevil has one generation per year. At this time larvae are feeding within the terminal branches.
Monitoring: Look for flagging of terminal branches. Prune off terminals about 6" below dieback and cut open to check for weevil larvae (legless, creamy white color).
Control: Prune out and destroy infested terminals NOW before the weevils turn into adults and move to litter under trees to overwinter. If a problem now consider targeting protection from adults in the early spring (~March / April)

Two-Spotted Spider Mites, *Tetranychus urticae*

Besides being the year of the thrips it is also the year of two-spotted spider mites. We are getting reports of spider mite activity this week on a wide range of landscape plants on everything from perennials to woody plants such as juniper and winged euonymus, to annuals. Adults, nymphs and eggs are all present this week throughout Maryland.
Monitoring: Examine plants growing in exposed, hot dry areas first. If you are growing nursery plants in containers examine the plants commonly damaged by mites since container grown plants appear to be more likely to see early mite population build-up. Use the same method covered under thrips for examining for spider mites, using the paper and rapping method.
Control: Many choices including Avid, Kelthane, Akari, Floramite, horticultural oil or insecticidal soap on non-drought stressed plants, and Hexagon (only controls immatures and not adults).,

Scale on Leyland Cypress

Recently we received a sample of Leyland cypress infested with scale. John Davidson identified the scale as *Lepidosaphes pallida*, (Maskell Scale). This scale has 2 generations / year.
Monitor: First instar crawlers are still emerging this week but many have settled at this point. There is also a second generation of crawlers in August.

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Potato Leafhopper

Steve Dubik reports seeing potato leafhopper damage showing up in the Laytonsville area. Nymphs and adults are present now. Potato leafhopper is very active and causing significant damage to susceptible hosts. The potato leafhopper is generally only a problem in nurseries (especially on red maples) and rarely a major problem in the landscape.

Control: Treat susceptible plants now. Acephate (Orthene), TriStar, Imidacloprid, or soil application of Flagship (nurseries only)

Leafminer on Salvia

Marty Adams reported leafminer on *Salvia* 'Darwin's Blue' on June 13 in Westminster.

New Invasive Moth Species Threatens Grapes on the West Coast

The California Department of Food and Agriculture is reporting that a new exotic moth has been discovered in portions of the San Francisco Bay Area earlier this year. The larvae of the light brown apple moth, *Epiphyas postvittana* (Walker) will feed on 250 species of plants including pear, apple, peach, cherry, oak, willow, walnut, poplar, cottonwood, pine, camellia and chrysanthemum. This new invasive species is just another example of what we can continue to expect in the United States with all of the importing and introductions of new exotic plant insects. This moth is about the size of a nickel and is a major threat to the California wine industry. For photos and additional information, go to http://www.cdfa.ca.gov/phpps/pdep/LBAM_profile.htm

Assassin Bugs

We are seeing and receiving reports of a lot of assassin bug nymphs in the landscape. These bright red and black predators feed on caterpillars and other insects. One of the common assassin bugs in this area is the wheel bug.

Assassin bug nymph

An adult assassin bug – the wheel bug

CORRECTION: Last week mealybug was incorrectly reported on magnolia. What was thought to be mealybug (a pest) was actually a ladybeetle (a predator). See "Beneficial of the Week" below for further information.

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Beneficial of the Week **(**by Paula Shrewsbury**)**

Don't kill that "mealybug" on your magnolia! A case of mistaken identity! At this time of year we often get reports of "mealybugs" on magnolia trees. However, this small, white, wax covered insect couldn't be more different. Mealybugs are phloem feeding insects that often reach damaging population levels, especially on many greenhouse grown and interiorscape plants. There are only a few species of woody plants that are attacked by mealybug and magnolia is not one of them. Mealybugs excrete clear sticky honeydew which collects on foliage and branches, where ultimately a black sooty mold develops on the honeydew. Whereas the small, white, waxy "mealybug" mimic that is common on magnolia is actually the larval stage of a *Hyperaspis* ladybeetle, a predator that commonly feeds on soft scale. So what's going on? Magnolias are frequently infested with one of two soft scale species, tulip tree scale and magnolia scale. Soft scale produces honeydew. When scale populations begin to increase *Hyperaspis* lady beetles move onto the magnolias to feast on the soft scale. The adult of this lady beetle is black with 2 distinct red spots on its back. It just so happens the larvae are white, covered with wax, and an oval shape quite similar, at first glance, to mealybugs. The honeydew produced by the soft scale adds to the confusion because mealybugs also produce honeydew. There are also other species of lady beetles that have wax covered larvae. Actually lady beetles (family Coccinellidae) come in many different sizes and shapes as adults and larvae. So it is important to know how to distinguish between lady beetle larvae and mealybugs. Remember, mealybugs have sucking mouthparts (fine clear stylets coming out the underside of the head area) and relatively short legs (they are not very mobile insects). Whereas beetles have chewing mouthparts (mandibles for chopping up their prey), and predatory beetles make a living foraging for food so they have relatively long legs and move around the plant readily. So be sure not to suffer from a case of mistaken identity, you don't want to be treating your predators with pesticides to kill "mealybugs". If you see predatory lady beetles on your magnolia, search more closely because you likely have tulip scale developing on the twigs, producing honeydew, and being cared for by ants.

Wax covered larvae of *Hyperaspis* lady beetle. Note the early instar tulip tree scales on the branch that the lady beetle is likely feeding on (*Photo by M. Raupp, UMD*)

Adult stage of Hyperaspis lady beetle (*Photo by M. Raupp, UMD*)

Tulip tree scales (reddish - brown, mound shaped insects on stems) and black sooty mold built up on the branches (*Photo by M. Raupp, UMD*).

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Anthracnose and Wilt Diseases Active Recently
Rich Anacker, Plant Disease Specialist, MD Dept. Agriculture

Anthracnose
The pathology lab at MDA has received several anthracnose samples this past week. Anthracnose is a common disease caused by various fungi. Symptoms of anthracnose vary with hosts and range from discreet brown (necrotic) spots, blighting of leafs and twigs, or defoliation. Anthracnose diseases are more common during cool wet weather, on new growth, and usually found on the lower portions of the tree first.
Control: Control strategies include elevating trees to increase air circulation at the base of the tree, thinning tree to increase air circulation in the crown and to remove 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. On sites with a history of problems chemical sprays may be used. Fungicides are applied 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.

More information and images can be found at the following websites:
http://ohioline.osu.edu/hyg-fact/3000/3048.html

http://plantclinic.cornell.edu/FactSheets/anthracnose%20trees/anthracnose%20trees.htm

Wilt Pathogens
A dry fall and a dry spring have made it a good time to see vascular wilt pathogens. The past few years these pathogens have been growing unnoticed and are now expressing themselves. The two most common wilt pathogens in our area are Dutch elm disease and Verticillium wilt. We have received samples of both this spring. When diagnosing wilt diseases culture confirmation is usually recommended since similar symptoms may be a result of a root pathogen or construction injury. It is common when symptoms are noticed with wilt diseases that it may already be too late.

Dutch Elm Disease (DED)
This disease has been well studied in our area and many control strategies have been developed. Also, the US National Arboretum has recently developed new elm varieties such as 'Valley Forge' that are resistant to DED. More information on identifying and managing DED can be found at the following site: http://www.na.fs.fed.us/spfo/pubs/howtos/ht_ded/ht_ded.htm

Verticillium Wilt
Verticillium wilt is a disease that may affect many different plants. We received a sample of a Japanese maple this week. Below are photos from the bugwood network of severe symptoms of Verticillium wilt. When half the tree is already dead it is time to think about replacement trees. It is important not to replace the site with a species susceptible to Verticillium wilt. A good fact sheet listing replacement species on Verticillium may be found at the following site:
http://ohioline.osu.edu/hyg-fact/3000/3053.html

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Symptoms of Verticillium in the landscape
Photo by: Joseph O'Brien, USDA Forest Service, Bugwood.org

Signs of the pathogen: vascular streaking
Photo by: Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org

Plant of the Week:

Mountain Laurel, *Kalmia latifolia,* is a native evergreen that thrives in the shady areas of the landscape as long as the soils are acidic, moist but well drained and cool. Wild specimens can grow as tall as 15 feet, but most of the cultivars stay within a 4 to 8 foot height. The foliage is a beautiful dark glossy green, and new foliage can be light green or a bronze-red depending on the cultivar. The unusual flowers, which look a bit like popcorn, attract many gardeners to the plant when it is in bloom. The flowers come in pure white, white with pink, pink and pink with red. Some cultivar flowers are dark when in bud and turn light colored or pure white when fully opened and some cultivars have bands of cinnamon color on the flowers. 'Bravo' is an excellent dark pink flowering cultivar, 'Hearts of Fire' has red buds that open to a deep pink, and 'Shooting Star' is an excellent white flowering cultivar. There are a few serious disease and insects that pester this native and they include a leaf spot, blight, flower blight, whitefly, scale, lace bug and a borer. (Photo by Ginny Rosenkranz)

Weed of the Week

Wild Mustard, *Brassica kaber*, is mostly a winter annual, though it can occur as a summer annual. Found throughout the United States, it is a weed often found in nurseries, and around newer homes located on previous farm land. Easy to identify, this weed has its yellow mustard flower growing to 5 feet tall. This plant has a deep taproot, often surrounded by a diffuse root system. Leaves are ovate in shape, alternate, long and narrow, up to 7 inches in length. Leaves will become smaller as they are produced up the stem. Leaf edges will be smooth but lobed. Usually found with a very short

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petiole, they can be found without one. Flowers are produced on a long branch, usually with yellow 4 petals.

Control of Wild Mustard can be obtained using pre emergent herbicides that include Surflan, and Kerb, and post emergent herbicides would include Kerb and Dimension as early post emergent and Glyphosate as a non selective post emergent herbicide.

(Photo courtesy of Virginia Tech)

Announcement: New Plant Lab Diagnostician – Fall of 2007

The University of Maryland Cooperative Extension has hired someone to fill Ethel Dutky's position. The new member of our team will be Dr. Karen Rane. She will start early this fall. Karen will be stationed in the Department of Entomology on the College Park campus and will diagnose plant problems.

What's in bloom?

Plant	**Plant Stage** (Bud with color, first bloom, full bloom, first leaf)	**Location**
Albizia julibrissin (Mimosa)	First Bloom (June 21)	Catonsville, Ellicott City
Campsis radicans (Virginia creeper)	First Bloom (June 18)	Ridgely
Liatris spicata	First Bud (June 13)	Silver Run
Salvia 'Darwin Blue'	First Bloom (June 13)	Silver Run
Clematis'Westerplatte'	Full Bloom (June 13)	Silver Run
Galax aphylla	Full Bloom (June 13)	Silver Run
Stewartia pseudocamellia	First Bloom (June 13)	Silver Run
Castanea mollissima	Full Bloom (June 13)	Silver Run

Degree Day Information (as of June 21):

Baltimore, MD (BWI)	1238
Dulles Airport	1318
Hagerstown, MD	1177
Mechanicsville, MD	1284
National Arboretum	1379
Reagan National	1423
Salisbury	1050

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