**Commercial Horticulture**

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### BENEFICIALS OF THE WEEK

**Weed of the Week:**
- **Beneficial Insect Information:**
  - Stanton Gill and Paula Shrewsbury (Extension Specialists)
  - Nancy Harding, Faculty Research Assistant

**Disease Information:**
- Karen Rane (Plant Pathologist)
- 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 (Extension Specialist, Wye Research & Education Center)

**Design, Layout and Editing:**
- Suzanne Klick (Technician, CMREC)

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**Hottest Month?**

**By: Stanton Gill, UME**

We made it to the month of the Lion (Leo), August. July is usually a tough month, plant health-wise, but we got through it without experiencing excessively hot weather. So far, this summer has not been too bad. We are seeing huge growth on many nursery trees this summer with the frequent rains. That said, with all of the rains we are seeing increased foliar leaf spot diseases as well.

**Main Peachtree Borer – Adult Activity**

**By: Stanton Gill, UME**

The number of adult males in my baited pheromone traps for peachtree borer dropped in the last week. I believe we are moving into the end of the flight activity for this borer. I am receiving e-mails with pictures of cherry and ornamental plums attacked by the larvae of peachtree borer. There is not much we can do this late in the season. In a future August weekly report, I will discuss some alternative methods that we have been investigating for dealing with peachtree borer.
Boxwood Blight
Steve Sullivan, The Brickman Group, brought in a sample of boxwood last week that was confirmed with boxwood blight. A pest alert on boxwood blight is available on our publications page.

Powdery mildew is infecting dogwood trees in landscapes and can cause areas of leaves to turn purple
Photo: David Clement, UME-HGIC

During the dry weather, powdery mildew is also causing scorching symptoms on dogwood foliage

Note the characteristic black lesions of boxwood blight along the stem
Photo: David Clement, UME-HGIC

For comparison: Volutella is infecting the leaf on the left and boxwood blight is infecting the leaf on the right
Photo: David Clement, UME-HGIC

Mark Schlossberg, ProLawn Plus, Inc., sent this photo of cherry laurel with shot hole damage; some weevil damage is evident on the edges of the leaves. A fungus causes dead spots on the leaves. These dead areas drop out leaving holes that look like insect feeding damage.
Mosquitoes in the Landscape

By: Stanton Gill, UME

I got a call last week from a landscape manager who was having major problems with mosquitoes in several customers’ landscapes and in his own landscape. I visited the landscape manager’s home to see about his mosquito problem. He said the mosquitoes were so bad they got into his house when the kids left the back door open. His wife was being attacked by mosquitoes in her kitchen and needless to say she was not a happy person.

He had a beautifully landscaped yard with two shallow (under 18” deep) ponds. When I netted the pond water I found “oodles” (lots) of mosquito larvae. He had fish in the pond for the last couple of years, but the severe winter had frozen the ponds completely and killed all of his fish and he was so busy this spring he did not replace the fish. Ornamental ponds with moving water rarely have big problems with mosquito larvae building up, but these were “still” ornamental ponds which are major breeding sites for mosquito larvae.

He also had a couple of containers full of adult mosquitoes that his customers had caught in their landscapes. The adult mosquitoes were black in color with distinctive white stripes. They also had black and white striped legs. This color pattern is the basis for the name “tiger”. These specimens were Asian tiger mosquitoes (Aedes albopictus).

The information below is on the Maryland Department of Agriculture website at: mdad.maryland.gov/plants-pests/Pages/asian_tiger_mosquito_md.aspx

The Asian tiger mosquito (Aedes albopictus) is an exotic species introduced to North America from Asia and has become a major pest and threat to public health in Maryland. From an initial discovery in Baltimore City in 1987, the tiger mosquito has extended its known range to all Maryland counties except Allegany and Garrett.

Tiger mosquitoes are persistent, moderately aggressive biters. They prefer to feed on the lower legs. Female tiger mosquitoes are the sex of most concern to humans because, as in the case for all mosquitoes, only females bite. The reason for the particular lust for blood by the female mosquitoes is the drive to reproduce. The tiger mosquito is very agile and can be difficult to kill with a casual slap.

Female tiger mosquitoes seek water-holding containers in which to lay their eggs. In the case of the landscape manager this was his two ponds. Any container from a bucket to a tree hole is a possible breeding site, but this mosquito has preferences. Outdoor containers are greatly preferred over indoor containers and outdoor containers in the shade are preferred over those in full sunlight. Containers holding dark stained water high in organic content are preferred over containers holding clear, clean water.

Eggs are deposited along the sides of a container, just above the water surface. The rate of hatching success increases if the eggs remain unflooded for a few days after being laid and the eggs can remain viable for long periods before flooding, such as during prolonged droughts. The eggs are stimulated to hatch when the water level in the container rises and floods the eggs, provided the water temperature is above 60 F. After hatching, mosquito larvae live in the water for one to several weeks, depending on water temperature and the amount of food present.

The most promising predators of tiger mosquito larvae are mosquitofish (Gambusia spp.) and cannibal mosquitoes (Toxorhynchitus spp.). Fish are very effective when stocked in rain water barrels and ornamental ponds, but many of the breeding sites of tiger mosquitoes are so small and cryptic as to make the use of fish of limited to ornamental ponds. Stanton’s note: I have bought these fish at fish hatcheries and you can find them on-line.

Tiger mosquito larvae are susceptible to the toxic spores produced by the bacteria Bacillus thuringiensis israelensis (Bti). The insect juvenile hormone mimic methoprene does not kill tiger mosquito larvae, but prevents maturation to adult mosquitoes. The problem of controlling tiger mosquitoes with Bti and methoprene
is how to deliver the products to the breeding sites. Due to the large number and cryptic location of breeding sites, application of larvicides is labor intensive.

The most effective method of controlling tiger mosquitoes is reducing or eliminating the containers which are the source of the problem. Draining or removal of water holding containers, even on a localized basis, will produce remarkable long-term reductions in mosquito annoyance. The list of breeding sites is extensive and includes any water holding containers, but the primary sites in residential areas include clogged rain gutters, buckets, cans, bottles, boats, flower pots, bird baths, outdoor statuary, ornamental pools, plastic or canvas tarpaulins, children’s toys, rain barrels, and pet food and water dishes.

**Sawfly on Black Walnut**

A cool sawfly larva that showed up on a small black walnut here at the research center is the butternut woolyworm sawfly (*Eriocampa juglandis*). It has long, waxy filaments on its body to help protect it from predators. It is not considered a problem insect, but at times it can show up in large numbers in specific locations. Butternut and hickories are also reported hosts.

**White Grub Management**

*By: Paula Shrewsbury, UMD*

It has been a great year for scarab beetle adults and a challenging year for you to manage them. We have seen great numbers of Japanese beetles in addition to oriental, Asiatic garden, and other scarab beetles. The somewhat depressing news is that we have had optimal environmental conditions for the eggs and larvae of these beetles to survive. Most scarab beetle eggs are laid in the soil during late June and throughout July. The eggs need soil moisture to survive. So if there is a drought during these months there is high scarab egg mortality. In years like this one where we have had a good amount of rain there will likely be very high egg survival. This translates to an abundance of white grubs feeding on the roots of turfgrass and significant damage to the turf late this summer and fall. Note that healthy, non-drought stressed turf can tolerate greater white grub densities. Given this I still predict grub abundance is going to be great enough to cause significant damage.

NOW through about the 3rd week of August is the time to monitor and apply control materials if you have high white grub numbers. If you wait until late August or September you will have more turf damage and product efficacy declines. Refer to the article on “White Grub Management” that was in an earlier IPM Report for more details on monitoring and management options (go to: [http://extension.umd.edu/ipm/white-grub-management](http://extension.umd.edu/ipm/white-grub-management)). Also see the “Beneficial of the Week” in this report where I discuss a new biological product containing a Bt toxin for grub control.
Red-humped Caterpillar
Chrissy Moore, U.S. National Arboretum, found this red-humped caterpillar on July 31 defoliating a red buckeye. This caterpillar has a wide woody plant host range. Most often, it does not occur in high numbers to be a problem, but in some years, populations can erupt and cause significant damage. As the caterpillars mature, they become solitary feeders.

Emerald Ash Borer
By: Stanton Gill, UME, and Paula Shrewsbury, UMD
Tony Murdock, Fine Pruning, reports one of the first infestations of emerald ash borer in downtown Frederick this week. Emerald ash borer infested ash trees were found in College Park (Prince Georges County) this past week as well. These ash trees have been infested with banded ash clear wing borers for several years. The banded ash clear wing caterpillar larvae made the trees look bad with lots of branch dieback. However, in two different parking lot plantings of ash several trees are now dead due to EAB infesting the trees. Control information is available on our publications page: Check out ‘Hard Decisions When Managing Ash Trees’. The Maryland Department of Agriculture website and its associated links at: http://mda.maryland.gov/plants-pests/Pages/eab.aspx

Rose Rosette Disease
Bernie Mihm, Fine Earth Landscape, is reporting rose rosette disease on Knock Out roses. He noted that the planting of 10 roses all have it and will be removed. The causal agent is a virus which is spread by an eriophyid mite. Look for distorted new growth and clusters of shoots that are often reddish in color, and stems with excessive thorniness.
New biologically-based product for white grub management

There have been biologically-based products (also referred to as bio-pesticides) with Bacillus thuringiensis (Bt) strains as an active ingredient on the market for many years. For example, the most commonly used products contain Bt kurstaki which target early instar caterpillars, and Bt israelensis which target fly larvae such as mosquitoes, black flies, and fungus gnats. Bt’s are usually not considered “true” biological controls since they use toxins that are produced from the bacterium, rather than the microbe itself. It is the toxin that is present in products sold commercially. The latest Bt to come to the market is Bacillus thuringiensis galleriae which targets scarab beetle adults and white grubs. Stanton Gill and colleagues have been evaluating Bt galleriae against adult Japanese beetles this summer and will inform you of its efficacy once the trials are completed. Several entomologists throughout the country have evaluated Bt galleriae against Japanese beetle and other species of white grubs. The product on the market is named “grubGONE” and is manufactured by Phyllom BioProducts Corp.

Researchers have found that Bt galleriae successfully controlled white grubs of Japanese beetles and masked chafers (applications were made from late June through late-August). I have not seen data for other white grub species but the “grubGone” label states it also controls Asiatic, June, oriental, green June, and May/June beetle white grubs. Other beetles on the “grubGone” label include some weevils and flat headed beetles (borers). This product is labeled for use on a wide range of turfgrass areas (landscape, recreational, and commercial). Bt’s in general, and Bt galleriae, are very specific for a target group of insects and found not to be toxic to pollinators or natural enemies of insects.

It is nice to have an additional “tool” in the pest management tool box for managing white grubs, especially one that is insect specific and less toxic to non-targets. For more information on white grub management see the article on white grubs above (in this newsletter) and go to: http://extension.umd.edu/ipm/white-grub-management

Weed of the Week

By: Chuck Schuster

It has been a challenging 12 months from many different aspects for those responsible for maintaining lawns and landscapes; a long cold winter, a spring that never wanted to warm up, and moisture that never seemed to stop. This challenging period has caused some concerns with the way certain products are working.

Crabgrass control is an issue each year. A great deal of effort and product is expended in an attempt to keep this and other annual grassy weeds under control. This year seems to be presenting a great deal of challenges keeping these weeds under control. The question that many are asking is why.

Timing of product application is critical. Most of the crabgrass pre-emergents are just that, pre-emergent products and they will not do anything to the plant after it has started to germinate. Even with some products having an early post emergent ability, conditions were not always proper for success. This spring the soils warmed up very slowly. If normal timing was used for application, the product may have degraded by now. These products can have an applicable life of up to 120 days. If application timing was started in early March, and germination did not start until mid to late April, more than 45 days may have been lost in efficacy. On April
24, 2015, soil temperatures just peeked into the low 50 °F range in central Maryland. By early May we had reached temperatures that were well in crabgrass germination zones. Many of these herbicides are broken down by microbial activity, and while it does not work as quickly below 55 °F, it does still happen. This year with the prolonged cool spring, and soils not warming up to the key temperature, these products had ample time to start the breakdown well before crabgrass seed even started to germinate.

Another issue of concern for successful weed control is moisture. If after the application of the pre-emergent product we did not have rainfall or irrigation the potential for product loss does occur. Rainfall or irrigation will activate the product, and until these events occur the pre-emergent properties are not working. If heavy rainfall occurs after application, then the potential exists for product movement laterally off-site with excess water. In one research article from Cornell, it showed the concern of greater than normal rainfall moving the herbicide just below the weed seed zone, thus preventing it from being able to do its job. Soil type can be part of this issue as well.

Many turf managers apply pre-emergent products with a split application which allows a longer period of time for weed seed suppression. Most homeowners do not do it this way, but many turf managers will as a way to extend herbicide activity. Even with this management method, the season did not work well with the products.

In summary there are many reasons we are seeing less than stellar weed control on many sites. It is not for a lack of product being applied or from poor quality product. The spring was long and cool, which lengthened the time during which the weeds of all types germinated. Timing is always critical for application of product, and using the typical calendar this year did not work. We then had a longer dry spell and if product was not watered in with irrigation, was not activated and then did not start to prevent weed growth as it would have if .5 inches of moisture occurred.

**Plant of the Week**
**By: Ginny Rosenkranz**

*Vernonia noveboracensis* or New York ironweed is a native late summer blooming herbaceous perennial that grows 4-8 feet tall with a spread of 3-4 feet wide. It prefers full sun and moist, rich, slightly acidic well drained soils but tolerates drought conditions well. The slightly toothed deep green leaves are alternately arranged on the strong stem. New York ironweed flowers are tiny, tubular in shape and cluster together to create a fluffy ball of deep violet purple. The flower heads are on loosely branched flat-topped clusters that can be up to 6-8 inches across and are created with 30-50 flowers which last from August into September. The flowers attract many species of butterflies, including the monarch butterfly. It is cold hardy from USDA zones 5-9. The name ironweed is due to its tough stems and the rusty color of the fading flowers and rusty colored seeds. If the height of the plant is too tall for the garden, trimming it back in late spring will shorten the height and create a denser plant. *Vernonia noveboracensis* is native on the East Coast from Massachusetts to Mississippi and was collected in the 1700’s in Maryland. They are excellent background plants and naturalize well in meadows, wildflower gardens, rain gardens and cottage gardens. There are no serious insect or disease pests.
The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by University of Maryland Extension is implied.

CONTRIBUTORS:

Stanton Gill
Extension Specialist
sgill@umd.edu
410-868-9400 (cell)

Paula Shrewsbury
Extension Specialist
pshrewsb@umd.edu

Karen Rane
Plant Pathologist
rane@umd.edu

Chuck Schuster
Extension Educator
cfs@umd.edu

David Clement
Plant Pathologist
clement@umd.edu

Andrew Ristvey
Extension Specialist
aristvey@umd.edu

Ginny Rosenkranz
Extension Educator
rosnkrnz@umd.edu

Nancy Harding
Faculty Research Assistant

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Degree Days (As of August 6)

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To check degree day (DD) accumulations in your local area go to:
http://www.yourweekendview.com/outlook/agriculture/growing-degree-days/ Note: degree days reported in this newsletter use a base temperature of 50 °F, a start date of January 1st, and the date of monitoring as the end date.

Upcoming Conferences:

FALCAN Truck and Safety Seminar
August 19, 2015
Location: Urban Fire Hall, Urbana, MD
http://falcanmd.com

LCA Hands-on Training Seminar
September 16, 2015
Location: Johns Hopkins University, Montgomery County Campus

Interiorscape Conference
October 1, 2015
Location: Rawlings Conservatory, Baltimore, MD

Community Forestry Workshop
October 2, 2015
Location: Carroll Community College, Westminster, MD
http://www.westgov.com/182/ForestryWorkshop

4th Annual TreesMatter Symposium
November 4, 2015
Location: Silver Spring Civic Center, Silver Spring, MD

Degree Days (As of August 6)

Baltimore, MD (BWI)     2525 2280 2391  Dulles Airport     2483 2169 2419
Frostburg, MD       1704 1421 1522  Martinsburg, WV  2360 2198 2242
National Arboretum  3099 2787 2752  Reagan National    3099 2787 2752
Salisbury           2486 2515 2672  St. Mary’s City    2595 2368 2547