UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report
for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **October 8, 2021**

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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 **(include location and insect stage)** found in the landscape or nursery to sgill@umd.edu

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Regular Contributors:
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists) and Nancy Harding, Faculty Research Assistant
Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)
Weed of the Week: Chuck Schuster (Retired Extension Educator)
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)

Something Different

By: Stanton Gill

Callery pear growing in a parking lot island

At the MAC-ISA conference this week, I was sitting in on a presentation about invasive species and the subject of callery pears came up. Callery pear is designated as a Tier 2 Invasive Plant by the Maryland Department of Agriculture. The most famous of the callery pears is the cultivar, 'Bradford', whose hybrid offspring with other cultivars have escaped and now over populate several locations in the United States. *Pyrus calleryana*, or the callery pear, is a species of pear tree native to northern China and northern Vietnam, in the family Rosaceae.

The callery pear that we know as 'Bradford' actually came from a part of China called Manchuria. The original trees came from the Northeast, provinces (sheng) of Liaoning (south), Jilin (central), and Heilongjiang (north). I looked up the climate in these areas and the main features of the climate in Heilongjiang Province are that it is cold and dry in winter, hot

and rainy in summer, and the weather is changeable during spring and autumn. The highest temperature reaches 40 °C (103 °F) in Mohe County, and the lowest temperature is -52 °C (-61 °F) in Mohe County. These callery pears are still found in these Northern provinces growing in poor soil and surviving through extreme winter cold and high summer temperatures. Native callery pear trees grow very slowly and evidently do not have weak branches like we see with *P. calleryana* 'Bradford' grown in American nurseries and planted in American landscapes.

Callery pear with dead tip branches from a fire blight infection

So, the question is why was this plant brought to the United States originally. It had to do with the disease, fire blight, caused by the bacteria *Erwinia amylovora*. Fire blight wiped out large pear orchards in Maryland, mainly found in the 1920 – 1930s on the Eastern Shore, and cultivated pears in many other fruit producing states.

Plant explorers reported that *P. calleryana* in Manchuria appeared to be resistant to fire blight. The intent of plant breeders of fruit was to breed in the resistance to fire blight from this pear species into cultivated, edible pear species. This was done in the 1950-1960s. During the early years of breeding, it was noted that *P. callerayana* was actually a very attractive tree that had beautiful spring flowers, nice shiny foliage, resistance to fire blight and tolerance of poor soils in urban environments. Most importantly, unlike its more wild cousins, this one didn't have long thorns. After testing them in a D.C. neighborhood, they were released to the nursery trade in 1960 under the name Bradford Pear. Many trees were planted in the College Park area in the early 1970s. It was an easy leap to popularity, and many nurseries started growing the trees. Callery pears were used extensively in urban landscapes.

In the nursery, growers did what they do best – grow trees rapidly with generous fertilization and irrigation creating a saleable tree in 3 – 5 years. A rapid turnover of plants in the nursery proved to be very profitable. By the early 1980s, we had several severe summer storms, which resulted in many of these ornamental pears dropping branches. The callery pear was declared a weak wood tree. The seminar discussed how to properly prune the trees to create less upward branching to reduce the branch breakage. This pruning helped to a small degree, but still they tended to break up in severe storms.

'Bradford' is self-sterile, which is common in many cultivated pears. Plant breeders made a huge mistake and introduced new cultivars with better branch structures, but this provided pollen sources that resulted in callery pears bearing fruit. The fruit was carried by animals to new sites and hybrid pears, with many reverting to their thorn bearing cousin species, popped up in places people did not want them.

Many *P. callerayana* 'Bradford" trees were planted in the parking lot surrounding the Holiday Inn where the MAC-ISA meetings were held. Every tree I examined had hits of bacterial fire blight on flower spurs, but it did not progress beyond this tip damage. It is not immune, but is still resistant to the disease. The interesting thing is the trees were growing in a hot parking lot in poor quality soil, and the trees were growing very slowly. It did not appear that any of the slow growing trees showed any indication of large branches breaking off.

Keep in mind in the Manchurian area where these trees grow natively, the trees grow very slowly and do not push out larges amount of growth each year. This tree species is really adapted for what we would call poor

growing conditions. The way the trees are being grown in the nursery, and sometimes, in the landscape may be creating some of the branch breakage problems. The pears do respond to watering and fertilization with growth of weak wood that is more susceptible to storm damage.

We cannot easily correct the problems that have developed with this ornamental pear that has now grown into the category of invasive species. We can use this tree as example of what not to do with a new species of plant brought into the nursery industry. Look at what environment it has evolved to grow in and do not over stimulate growth in reproducing the plant. Also, be aware of what happens when you bring in additional cultivars that can cause heavy fruit and seed set that can grow to be a problem.

Crapemyrtle Bark Scale

By: Stanton Gill

Chris Ward, John B. Ward & Co., found a heavy infestation of crapemyrtle bark scale in Newtown Square, PA on October 5. Chris noted that he has only seen this scale once before in this area. This scale has become established in central Maryland and the Eastern Shore of Maryland. Monitor landscapes closely for this scale. It spreads rapidly among plants in a neighborhood.

Crapemyrtle scale can spread quickly in an area if left untreated
Photos: Chris Ward, John B. Ward & Co.

Biological Control of Mile-a-minute Weed Using a Weevil

By: Stanton Gill

Mile-a-minute weed *(Persicaria perfoliata)* is one of the more aggressive weeds. It is a vigorous, barbed vine that smothers other herbaceous plants, shrubs and even trees by growing over them. Growing up to six inches per day, mile-a-minute weed forms dense mats that cover other plants. The mile-a-minute weevil (*Rhinoncomimus latipes*) was imported into the US from China in 2004, following extensive testing showing that it feeds and reproduces only on mile-a-minute weed. Bob Trumble, now retired of MDA, did several releases of the weevil in several locations in Maryland. David Clement and I were examining mile-a-minute weed at CMREC and found that several of the weevils very active. The adults feed on the foliage. The larvae

of the weevil borer into the stems of mile-a-minute weed. Dave and I noticed that the adult weevil leaps about when you cup it into your hand. It jumps like a young spotted lanternfly nymph.

Rich Anacker, A and A Tree Experts, Inc., speaking at the MAC-ISA meeting mentioned that Rutger's University labs are selling the weevils to the public for $1.00/weevil for releases where people want biological control of this weed. Meanwhile, if you see this weevil on mile-a-minute weed, let it do its thing.

A mile-a-minute weevil adult (left) and damage on stem from the larva boring into it (right)

Beneficial of the Week

By: Paula Shrewsbury

What's that glowing in the soil?

A few weeks ago, after tubing on the Potomac River, I got a late start walking back upstream to my car along the C&O canal path. Needless to say, it was dark by the time I made it back. Fortunately, there was a full moon so I had a little light to help me see the path. It was a pretty interesting and different experience being on the path at night. While walking, I noticed numerous small "areas" in the leaf litter along the side of the path that were bioluminescent (glowing). Many organisms such as bacteria, fungi, jellyfish, algae, fish, clams, snails, crustaceans, and of course insects exhibit bioluminescence. What I was seeing were glowworms. **Glowworms** are the larvae (immature stage) of fireflies (a.k.a. lightningbugs; Coleoptera: Lampyridae). Most of us from this area are familiar with firefly adults which are most active when weather is warm and muggy, usually in June and July, when we see the adults flashing their lights. Many firefly species have special light organs that make the underside of their abdomens light up. The insects take in oxygen and, inside special cells, combine it with a substance called luciferin to produce light.

An adult firefly (*Photinus* sp). Note that the head is entirely concealed underneath the pronotum, the shield–like structure over the thorax. The antennae are the only part of the head visible. Photo by: David Cappaert, Bugwood.org

However, it is not just adult fireflies that exhibit bioluminescent (glow in the dark), the larvae also glow. For the common eastern firefly, eggs are laid in moist soil and hatch about a month later. All immature fireflies (or larvae) are called glowworms (see image). They emit light, too, though it is a low intensity glow used to warn

predators that they taste bad. The larvae of our eastern firefly develop over two summers, so they overwinter twice, before pupating and emerging as adults sometime in June. Larvae, which are active in the soil are believed to glow as a warning signal telling predators not to eat them as they are mildly toxic and taste nasty. The soil active glowworms are predators and known to feed on slugs, snails, worms, and other soil-dwelling insects. To assist glow worms in their feeding they first inject their prey with a substance that numbs the prey, making it defenseless, and then secrete digestive enzymes making easier to consume. When the dark comes upon us each night, be sure to watch for the glow of glowworms in moist, high organic soils.

Underside view of an adult firefly showing the abdomen where the light organ is located (white segments).
Photo: M.J. Raupp, UMD

Glowworms, larvae of fireflies, are predators that live (and glow) in the soil and search for prey.
Photo by M.J. Raupp, UMD

Weed of the Week

By: Chuck Schuster

Giant foxtail, *Setaria faberi*, is one of the weeds showing above the slower growing turf and in the landscape at this time of year. This summer annual, germinates in the spring, grows in clumps, has a fibrous root system, and is found throughout the United States.

Each plant of giant foxtail produces about 900 seeds
Photo: Mark Schlossberg, ProLawn Plus, Inc.

Giant foxtail can germinate early in the season with soil temperatures of just 50 °F. Leaf blades of giant foxtail can be up to sixteen inches in length and width is between one half and one inch. The leaf blade upon close examination will be found to have small hairs covering most of the upper surface and margin except near the leaf base. The inflorescence, (flower and seed head) of giant foxtail is where the plant gets its name. When fully mature, the seed head looks like the tail of the fox, and nods or droops. It is cylindrical, with many spikelets; each spikelet will have between one and three bristles that are one quarter to one half inch long. Each plant can produce on average 900 seeds. As the pH level is brought into the 6-6.2 range, seeds will start to go dormant. Giant foxtail prefers compacted soils with high nitrogen fertility and lower pH.

Cultural control in landscape can start with mulches. It will not germinate if buried more than 1 inch. This is not to say this is the best option, putting excessive mulch in the landscape, but consider renewal of the mulch with clean products each year. Foxtail will germinate if seeds land on the surface of most double ground mulches. Control of giant foxtail needs to start early in the season. Most pre emergent grass weed control will control giant foxtail. In landscapes, consider using trifluralin (treflan) or a mix of trifluralin and isoxaben (snapshot). In landscape beds with giant foxtail that has eluded early season control, post emergent control can be obtained easily using glyphosate products, Burnout, Pulverize or Prizefighter.

Plant of the Week

By: Ginny Rosenkranz

Chamaecyparis obtusa 'Crippsii' or the Golden Hinoki falsecypress is an evergreen conifer that grows 50- 70 feet tall and 10-20 feet wide in a broad pyramid shape. The spreading branches are covered with lacy frond like foliage with the new growth a bright golden yellow that lasts all year and not just in the winter. Foliage is scale like leaves that come in 2 sizes, a larger boat shaped pair and a smaller pair that is triangular, and both with prominent white X shaped markings on the underside. The older foliage becomes dark green, which creates a lovely color contrast and makes the Golden Hinoki Falsecypress a wonderful specimen in the landscape. The plants need shelter from drying winds and shine in full sun but can handle some partial shade, preferring to grow in acidic, moist but very well drained soils. *Chamaecyparis obtusa* 'Crippsii' are cold tolerant in USDA zones 4-8 and fairly slow in their growth. The plants are susceptible to Juniper blight and root rot, and bagworms can be problematic.

***Chamaecyparis obtusa* 'Crippsii' trees need shelter from drying winds and full sun**
Photos: Ginny Rosenkranz, UME

Pest Predictive Calendar "Predictions"

By: Nancy Harding and Paula Shrewsbury

In the Maryland area, the accumulated growing degree days (**DD**) this week range from about **3461 DD** (Martinsburg WV) to **4448 DD** (Reagan National Airport). The Pest Predictive Calendar tells us when susceptible stages of pest insects are active based on their DD. Therefore, this week you should be monitoring for the following pests. The estimated start degree days of the targeted life stage are in parentheses.

- Banded ash clearwing borer – adult emergence (3357 DD)
- Tuliptree scale – egg hatch / crawlers (3519 DD)

See the Pest Predictive Calendar for more information on DD and plant phenological indicators (PPI) to help you better monitor and manage these pests.

Degree Days (as of October 6)

Aberdeen (KAPG)	3532
Annapolis Naval Academy (KNAK)	4047
Baltimore, MD (KBWI)	4143
Bowie, MD	4125
College Park (KCGS)	3792
Dulles Airport (KIAD)	3908
Ft. Belvoir, VA (KDA)	3955
Frederick (KFDK)	3762
Gaithersburg (KGAI)	3737
Greater Cumberland Reg (KCBE)	3484
Martinsburg, WV (KMRB)	3461
Natl Arboretum/Reagan Natl (KDCA)	4448
Salisbury/Ocean City (KSBY)	4061
St. Mary's City (Patuxent NRB KNHK)	4320
Westminster (KDMW)	4195

Important Note: We are using the Online Phenology and Degree-Day Models site. Use the following information to calculate GDD for your site: Select your location from the map Model Category: All models Select Degree-day calculator. Thresholds in: Fahrenheit °F Lower: 50 Upper: 95 Calculation type: simple average/growing dds Start:Jan 1

Operator Certification (FTC) for Writing Nursery Nutrient Management Plans for Nursery, Greenhouses and Controlled Environments

Tuesday, November 9th, 2021
9 to 3:30 PM
Location:
Wye Research and Education Center, 124 Wye Narrows Drive, Queenstown, MD 21658

Nursery Operator Certification (FTC) for writing nursery nutrient management plans will be offered to growers who are interested in attaining Farmer Training Certification for writing nutrient management plans. This training program will assist you in writing a nutrient management plan for your nursery or greenhouse operation or Controlled Environment. You must write a nursery nutrient management plan if you use fertilizers and you gross $2500 or more per year in sales. With this certification, you will be able to sign-off and submit your own plan and annual implementation reports.

Each program consists of a Training Day and an Exam/Signoff Day. The Training Day, **Tuesday, November 9th, 2021** will consist of learning the plan-writing process. After the Training Day you will have about 5 weeks, during which time you will study the Nursery Nutrient Management Training Manual and develop your plan.

The Exam/Signoff Day will be at a location and on a date "**to be announced"**. This date will also be for going over your newly developed plan (or renewing your old plan).

The process is relatively simple for small (or low-risk) operations, so if your operation size is less than 5 acres, we would strongly encourage you to think about becoming a certified operator. If your operation is larger than 5 acres or you run a controlled environment, we would still encourage you to become a certified operator, even though the nutrient management process may be a little more complicated. For nutrient management consultants who wish to learn more about the process for developing nutrient management plans for greenhouses and container crop production, this workshop will offer 6 hours of continuing education credits.

The cost for this program is **$35.00** and covers program costs and the MDA exam fee. For consultants not taking the exam, the cost is $15. Payment will be required at the beginning of the program. A check can be made out to ***University of Maryland***. A receipt will be available.

If you wish to register, please do so by **November 1st.** An Event Brite registration page has been created and is linked here. If you have questions please send an email to me (aristvey@umd.edu) or call me at 410-827-8056 x113.

Wye Research and Education Center is located on the Eastern Shore of Maryland, about 20 minutes from the Bay Bridge. A map to WyeREC can be found here.

At present, this is a face to face meeting. Face masks are presently recommended. However the situation with COVID-19 is fluid and we may decide to run a virtual program. Since WyeREC is located in Queen Anne's County it will depend on the County Health Department directives. If this occurs, the registered attendees will receive a link to an online virtual program.

Conferences

FALCAN Truck and Trailer Safety Seminar

October 20, 2021
Location: Urbana Fire Hall, Urbana, MD
For more information
falcantruckandtrailer21.eventbrite.com

December 3, 2021

Integrated Pest Management Conference (details will be posted when available)
Location: Carroll Community College, Westminster, MD

December 9, 2021 (date change for last week's listing)

Turf Nutrient Management Program (half day)
Location: Carroll Community College, Westminster, MD

December 16, 2021

Biological Control Conference
Location: Maritime Institute, Linthicum Heights, MD

2022 Advanced Landscape IPM PHC Short Course – Registration is open!

This is a recertification short course for arborists, landscapers, IPM consultants, horticulturalists, professional gardeners, and others responsible for urban plant management. The course LECTURES will be VIRTUAL (online). In addition, there will be an IN-PERSON LAB held over two days (available to a limited number of course attendees). Coordinators: Drs. Paula Shrewsbury and Mike Raupp, Dept. of Entomology, Univ. of MD

Lecture (virtual) Dates: Tuesday, Wednesday, Thursday; January 4, 5 and 6 AND January 11, 12, and 13
Lab (in-person) dates: Tuesday and Wednesday January 18 and 19
Course and Registration Information: https://landscapeipmphc.weebly.com/
Questions contact: Amy Yaich, 301-405-3911, umdentomology@umd.edu

January 5 - 7, 2022
MANTS
Location: Baltimore Convention Center

January 21, 2022
FALCAN Pest Management Conference (currently in person)
Location: Frederick Community College, Frederick, MD
*Snow date is March 11, 2022

LCA Pesticide & Fertilizer Recertification (Virtual Program, February 2022)
The Pesticide & Fertilizer Recertification will return in 2022 with great speakers and new topics.

February 17 and 18, 2022
Chesapeake Green Horticulture Symposium
Location: Maritime Institute, Linthicum Heights, MD

March 15 and 16, 2021
MAA Pest Conference
Location: Turf Valley, Ellicott City, MD

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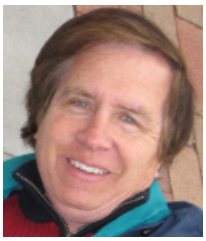

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Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.