UNIVERSITY OF MARYLAND EXTENSION

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

Commercial Horticulture **June 5, 2020**

In This Issue...

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 sklick@umd.edu

Coordinator Weekly IPM Report:
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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)

Bagworm Hatch

By: Stanton Gill

Jeremy Baker, Stansbury Tree, reported hatch of bagworm in Finksburg on Tuesday, June 2. Thanks to all of you who responded with information about bagworm sites. We now have enough sites for bagworms for our research project. We will be experimenting with aerial applications of Bt using a drone for this project.

Check infested trees for hatch before treating. Bt and Spinosad are two good materials that will control this insect at this stage.

Look for bagworms starting to hatch throughout the area at this time

When Powdery Mildew Isn't Powdery

By: Karen Rane

You are familiar with the white, powdery fungal growth on leaf surfaces that is diagnostic for powdery mildew on a number of host plants. However, there are times when powdery mildew isn't so obvious. Flowering dogwood is one such plant where the disease can be cryptic – symptoms can look like leaf scorch due to environmental stress. Another plant where powdery mildew isn't "powdery" is Japanese barberry, particularly the yellow cultivars. The powdery mildew fungus grows very sparsely across the leaf surface, making it difficult to see without magnification. Instead, infected leaves develop a dark mottling, and fall from the stems.

Powdery mildew on Japanese barberry
Photo: K. Rane UMD

Powdery milew on dogwood
Photo: David Clement, UME

Powdery mildew is also infecting other plants such as Euonymus 'Manhattan'
Photo: Jim McWilliams, Maxalea, Inc.

Brown Marmorated Stink Bug Comeback

By: Stanton Gill

Remember the brown marmorated stink but that was the hot, new invasive bug that invaded just about everyone's house 10-12 years ago? Their numbers dropped dramatically over the last several years. Now, we are getting several emails reporting increased activity of these annoying bugs in people's houses. They overwinter in house structures, sheds, garages, and any other location that they can find to hang out during cool weather. Now that it warmed up late in the last week, they are becoming super active. Several people reported them buzzing around their computer screens or hanging out near their lights. Several people reported them landing on them while they work from home on their computer.

We are receiving reports of increased brown marmorated stink bug activity this year.

Periodical Cicadas

By: Stanton Gill

Thanks for the many, many emails with pictures we received over the last week reporting periodical cicada emergence. Several were very humorous. One person said the cicada flew up and hit them on their head. Another said one landed on their shirt and startled them. Others are finding one or two on their porches. So you know what is going on, we have 12 broods of the 17-year cicada in the Unites States. The big one for the central part of Maryland is Brood X. We have a few areas of Maryland and parts of Virginia that have Brood IX. Likely, what we are seeing are the stragglers from Brood X that are showing up one year early from the main event of the mass emergence in 2021. So, we are getting a preview of what is to come in 2021. The reason is not completely known for the early emergence, but it has happened before. There are always a few that are early to the party, showing up before and after the main year of emergence of Brood X. It could be the weather influence or just nature experimenting to see if this varied emergence works better.

Here are some of the reported sightings with locations:

Larry Kahn reported over 50 periodical cicadas at his place in Vienna, VA, very near Wolf Trap farm.
Tom Reed found periodical cicadas on his parent's willow oak tree in Bear, DE.
Dr. Robert Fields found an adult periodical cicada in Rockville near Olney.
Serveral reported cicadas in Pikseville and Potomac.
Matt Katsuleres at the Maryland Turf Farm in College Park saw four cicadas on June 3.
Dona Kollis found a cicada in Rockville on May 24.
Bob Boyer, Scientific Plant Service, Inc. saw one at his home in Arnold his chestnut oak.
Alexa Smarr, Extension Educator, received a photo of a peridocal cicada from Kingsville on May 24.
Earl Reeves found a periodical cicada in Severna Park on May 29 and noted that "he seemed lost".
Ted Small had a cicada flew onto his shoulder in Rosedale.
Craig Greco found a peridocal cicada emerging in Leesburg, VA on June 2.

An adult cicada in College Park
Photo: Matt Katsuleres

An adult periodcal cicada is emerging from its pupal case in Leesburg, VA
Photo: Craig Greco

An adult periodical cicada in Rockville
Photo: Bob Fields

Correction from May 29, 2020 IPM Report

Gary Hevel, Retired, Dept. of Entomology, Smithsonian Institution, and Gaye Williams, MDA, pointed out that the photo in last week's report listed as a mallow sawfly is actually a March fly. Gary Hevel also noted that it "is clearly also a male. These two insects have similar color patterns, but the March fly has a head mostly occupied by eyes, a rounded pronotum, and short antennae."

Scale Insect Update

Marie Rojas, IPM Scout, reported the following on scale insect activity in Montgomery County this week:

She noted that calico scale crawlers had just hatched out under the female covers on *Cladrastis kentukea*, lecanium scale eggs were present on *Quercus phellos*, and tuliptree scale was on *Liriodendron*. Marie noted that she has still not seen crawlers, **only eggs**, of cotton camellia/Taxus scale at the locations she scouts in Montgomery County.

Talus or Distance can be used to control scale insects in the crawler stage.

Tuliptree scale crawlers will be active later in the summer
Photo: Marie Rojas, IPM Scout

Boxwood Leafminer

By: Stanton Gill

Dan Felice, Site One Company, sent in this picture of a boxwood with awful, brown foliage. We have received a number of similar pictures over the last week. It is boxwood leafminer damage. The adults emerged about 2 - 4 weeks ago, but the foliar damage is really showing up right now on the older foliage. Once you get this pest into a landscape or nursery site, it tends to re-infest each year. The adults are not strong fliers so they tend to hang around once introduced to an area.

Boxwood leafminers are causing this major damage to this plant Photo: Dan Felice, Site One Company

The females have been laying eggs in new foliage and the larvae should be hatching out soon. The insecticide Avid can be applied to control early instars. This material is translaminar in action, traveling from the top the foliage to the bottom, so it should provide fairly good control.

Tough Beach Plum

By: Stanton Gill

I published an article on the beach plum on May 7 with pictures of my trees in full bloom. On May 7 and 8, the temperatures dipped to 26 and 27 °F. These temperatures should have damaged the blooms. I examined the trees this week and over 70% of the fruit set even with the two-day cold dip. Richard Uva, Seaberry Farms, said he knew a cranberry grower who examined beach plums for 40 years and never saw any late cold damage. This native must really be adapted to our weather extremes.

Potato Leafhoppers

By: Stanton Gill

A central Maryland nursery owner sent in an email late Friday reporting that the potato leafhoppers just arrived at his location in Maryland, from the south, on Friday afternoon. The warm jet streams just carried the adults in. Marie Rojas, IPM Scout, continues to see adults active on *Acer rubrum* cultivars in Montgomery County this week, and we continue to see new arrivals of the adults riding the jet streams in from the south. We should see egg laying this week and nymphs active over the next couple of weeks.

In a few weeks, look for the nymphs of potato leafhoppers

Interesting Attack by Ambrosia Beetles

By: Stanton Gill

From Laura Miller in Pennsylvania: "I just read an article you wrote about Ambrosia beetles. I thought I would report my experience to you, so you can add my trees to your list of attacked species. I'm in Carlisle, PA and I have a friend in Pen Argyl, PA. We each have over 100 *Ficus carica* (edible common fig) trees in our collections. We overwintered them and brought them outside in March when the temperatures seemed like we would have a true early spring. As you are likely aware, there have been a few freezing nights since, resulting in damage to our trees where plant material was budding out or not completely lignified. We feel this drew the attention of the beetles, as our trees are certainly under attack. I have gone so far as to inject every hole with insecticide and fungicide, but it is a pain. My friend is just burning hers. I have taken cuttings and am trying to clone replacements as quickly as possible so I do not lose varieties I have spent years collecting. I'd say 25% of my trees are infested at this point. I'm holding out hope that I can save them with my injections, but everyone says no. I hope this isn't the new normal. Good grief, one year it's Spotted Wing Drosophila, this year it's Ambrosia beetles, soon I imagine it will be Spotted Lanternfly. It really keeps one on their toes."

Ambrosia Beetles

By: Stanton Gill

On Monday, I received an email that was forwarded from Jonathan Kays, our Extension specialist in forestry management. A landscape company that specializes in native plantings had installed several swamp oak in the Bay area of Maryland. The swamp oak had the characteristic *Xylosandrus* sp. frass tubes projecting from the trunks of the swamp oaks. These plants had just been installed this spring. Trees installed in soils that stay continually wet tend to produce ethyl alcohol, which will attract these beetles.

I also received four emails with pictures of trees including redbud, deciduous magnolia, *Styrax*, and yellowwood all with either wet spots on the trunks or the frass tubes projecting from tree trunks. Activity of *Xylosandrus* species continue to be high this week.

In my alcohol trap in Brookeville, the numbers peaked on Wednesday and are now dropping down slightly. There may be hope that we are heading toward an end of the first generation, but don't get too excited until I see what the counts are like next week. Andrew Ristvey sent up a photo from his trap counts on the Eastern Shore, and it showed that a mix of ambrosia beetles with several ground beetles are in his traps this week. The overall number in his trap had also dropped from previous weeks.

I spoke with Brian Dahl of Pope Farm Thursday afternoon about ambrosia beetle activity in Derwood area. He said the females of *Xylosandrus* continue to hit his baited alcohol bolts this week with the heaviest activity he has seen this season occurring in the last couple of days. Obviously, the females are still very active in nurseries and the landscape this week.

Financial Impacts of Spotted Lanternfly From Penn State

An article from Penn State notes that "If not contained, the spotted lanternfly potentially could drain Pennsylvania's economy of at least $324 million annually and cause the loss of about 2,800 jobs, according to a study carried out by economists in Penn State's College of Agricultural Sciences." The report looks at worst-case scenarios. It also is the first to estimate the potential financial impact of this pest. The complete article is available online.

Fern Leaf folder, *Herpetogramma theseusalis*

By: Stanton Gill

Native ferns have been a big selling item for the last 20 years. Unfortunately, an imported pest from Asia is attacking native ferns with increasing frequency. The fern moth, *Herpetogramma theseusalis*, is in the family Crambidae (crambid snout moths) and is causing damage on ostrich fern and royal fern. In previous years, we have seen it feeding on sensitive ferns and royal ferns. Early feeding by this caterpillar causes tattered foliage. Eventually, the caterpillar rolls itself in the tips of the fronds where it pupates. We are not sure of the life cycle of this species in Maryland and how it develops in greenhouse growing environments. In Maine, Douglas Morse, Brown University, has reported one generation outdoors and that it overwinters in the mid-instar larval stage. We have seen activity in early summer and again in late summer, so I suspect we may have two generations per year.

This fern leaf folder moth caterpillar was rolled up within the tip of a fern

The fern leaf folder moth caterpillar feeds wtihin the folded leaves on this royal fern.

Galls on Elm

Todd Armstrong, The Davey Tree Expert Company, found galls on an elm in Lutherville on May 29. Galls on trees can be caused by insects and mites including aphids, eriophyid mites, psyllids, and small wasps. The galls rarely impact the overall health of the tree so control is usually not necessary.

For more information on several elm galls caused by aphids, check out an article in the Buckeye Yard and Garden On-line.

Galls on this elm look unsightly, but usually do not impact the overall health of the tree
Photo: Todd Armstrong, The Davey Tree Expert Company

Gall on Oak

Jim McWilliams, Maxalea, Inc., found a gall on oak this week. Oaks can get a variety of galls caused by different mites and insects. Usually, they are not a serious problem.

This gall was found on an oak in Baltimore County this week
Photo: Jim McWilliams, Maxalea, Inc.

Peachtree Borer

By: Stanton Gill

Marty Adams, Bartlett Tree Experts, brought by a sample of a pupa and damage to the trunk of a cherry laurel. This insect is the main peachtree borer, *Synanthedon exitiosa*. This borer commonly attacks cherry laurels, peach trees, plums and cherry trees. We just picked up fresh pheromone traps for this clearwing moth borer to monitor for adult flight activity. We are placing out the traps next week and will keep you informed of when the adults are flying and mating so you can time a protective insecticide application.

Peachtree borer pupa extracted from cherry laurel

Woolly Beech Aphids

Elaine Menegon, Good's Tree and Lawn Care, found woolly beech aphids on June 2 in Hershey, PA. Beech is the only host for these aphids. They can be present in high numbers, but usually do not impact the overall health of the tree. These aphids produce a high amount of honeydew which attracts ants, yellowjackets, and other wasps. Sooty mold also grows on the honeydew.

Look for woolly beech aphids and a lot of their cast skins on beech leaves
Photo: Elaine Menegon, Good's Tree and Lawn Care

Beneficial of the Week

By: Paula Shrewsbury

More assassin bugs… this time the big one: Wheel bugs

Two weeks ago, the *Beneficial of the Week* was the orange assassin bug that I was fortunate to observe laying eggs. Since that time, we have had several reports of one of the more voracious assassin bugs hatching from eggs – the wheel bug, *Arilus cristatus* (Heteroptera: Reduviidae) (see image). Wheel bug adults lay clusters of 10-40 eggs on the bark of trees in the fall and they stay in that stage until the weather warms in the late spring and prey items become abundant. There are numerous species of assassin bugs but wheel bugs are one of the more common species. This particular assassin bug gets its common name, wheel bug, because of the spoke bearing, wheel-like structure on the pronotum (section behind the head) of adults (see image). They are large bugs with adults reaching 1- 1.5". Wheel bug adults and immatures are generalist predators that feed on a diversity of insects such

Wheel bug egg mass with newly hatched nymphs dispersing in search of prey.
Photo: M.J. Raupp, UMD

A wheel bug nymph feeding on its newly captured lunch.
Photo: P.M. Shrewsbury, UMD

A predatory wheel bug adult with its large sucking mouth part stuck into a brown marmorated stink bug adult resulting in stink bug death.
Photo: M.J. Raupp, UMD

as caterpillars, plant hoppers, sawfly larvae, aphids, stink bugs, Japanese beetles and more. Wheel bugs are stalking predators. The wheel bug approaches its prey very slowly and when it is close, it quickly grabs the prey with its front legs and then speedily impales the insect with its beak. Both adults and nymphs have a long, dangerous looking proboscis (mouthpart) that they use to suck the life out of their prey – literally (click here to see a great video of a wheel bug stalking a caterpillar). Through its beak the wheel bug injects digestive enzymes into its prey, which liquefy the body tissues making it possible for the predator to suck up its food. Now that winter is over and the warm weather here the eggs are hatching (see image) and you should see numerous red and black nymphs on the bark of trees and moving onto the stems and foliage. Nymphs and later adults are voracious predators and active through most of the growing season helping to control pest insect populations. If you see these red and black nymphs on your trees consider yourself lucky. With their voracious appetite and knife-like beak they will help keep some of the plant feeding insects from reaching damaging levels. Be careful if you handle these predators, especially the adults later in the season – they will defend themselves and their long "beaks" can result in a painful poke.

Click the below link for a video of the voracious wheel bug attacking a brown marmorated stink bug. https://www.youtube.com/watch?time_continue=2&v=njrlj8rLKkQ

Weed of the Week

By: Chuck Schuster

With temperatures heating up finally, and soil temperatures now starting the day in the 60 °F range every day, we are seeing many summer weeds take off and grow quickly. Moisture overall HAs been somewhat limited (until last night with 1 inch of rainfall in one area and 1.75 in another). Now, we are really seeing the abundance of Japanese stiltgrass spring up in the turf and some landscapes.

Note the white midrib on the Japanese stiltgrass leaf Photos: Chuck Schuster

Japanese stiltgrass is a real challenge for turf managers, especially those without appropriate tools to use. Japanese Stiltgrass, *Microstegium vimineum*, is a native of Asia. It first appeared in the U.S. in 1919 and spread rapidly throughout the eastern U.S. It is shade tolerant, requiring as little as 5% available light. It is a summer annual and is most often found in moist, shady environments. It thrives as an understory plant, but will also move into the full sun and compete with desired turf species, often winning the battle. It can be found in forests, turf, ornamental beds, ditches and damp fields.

Pulling up a clump of Japanese stiltgrass, one will find a fibrous root system, stems which are erect or reclining and that root at stem nodes. This rooting at nodes helps it spread prolifically. The leaves are up to four (4) inches in overall length and one half (.5) inches in width and have a white mid vein which divides the leaf into unequal halves. It has silver hairs down the midrib of the leaf blade. The seed head has 1 to 6 terminal spike branches. A prolific seed producer, each plant will produce up to 1,000 seeds annually.

Pre-emergent herbicide applications for larger areas are the recommended method of control. The seeds will germinate in late March to early April in the average year, which **is *before*** crabgrass. Flowering occurs in September to early October in this region. Prevention of seed production is the first line of defense in the control of Japanese stiltgrass for the following year, which is very difficult as it will seed at very low mowing heights. Wildlife are only marginally interested in this species as a source of food, but help spread it. The sticky, tiny seeds can be spread into other areas on the fur and hooves of animals (deer), by water, shoes, and clothes.

Mowing may be used to limit the spread and development of this weed. It must be kept short from the beginning of the season; this prevents seed head formation. This method, though, is the opposite of what we desire for the desired species of turf in most commercially managed lawns. Chemical control can be accomplished with the use of properly applied preemergence herbicides. Pre emergent control of Japanese Stiltgrass needs to be started very early in the season. Remember the early germination of this weed, before crabgrass, and note the rainfall during this period is necessary to activate these products. A second application 6-8 weeks after the first is useful. Control options are similar to that of crabgrass, start early and reapply in wet years. Barricade (Prodiamine) has been applied in research plots in December, March and May provided the highest percentage of control at 86%, with a single treatment in March on the average providing 81% control. All pre-emergent products require moisture to activate. Acclaim Extra *(*Fenoxaprop) has been used successfully as a post emergence herbicide in turf with Envoy being used in turf and selected ornamental beds. When using post emergent products, air temperatures above 65 degrees F have been found to provide the best environment for success. Use caution when using Envoy, as it has restrictions because of sensitivity of some ornamentals. Prizefighter (Ammonium Nonanoate) has been tested and is effective in spot spraying of landscape beds. Glyphosate products may be used for spot spraying in landscape beds, remember to use caution as this product will damage ornamentals that come in contact with this product.

Plant of the Week

By: Ginny Rosenkranz

Penstemon digitalis 'Husker's Red' is a native herbaceous perennial with the interesting name of beardtongue. The plants are grown for both their colorful foliage and their white 2 lipped tubular flowers. Plant are cold tolerant from USDA zones 3-8 and prefer soil that is dry to medium moisture and is well drained especially in winter. Plants are also salt tolerant, making them useful at the seaside and along sidewalks and driveways where salt is spread in winter. Full sun improves the colorful foliage and flowering. 'Husker's Red' grows 2-3 feet tall and 1-2 feet wide in a clump from a rosette of dark burgundy or maroon leaves. The basal leaves are more rounded while the leaves on the almost black stems are lance shaped. The color of the leaves matures to green in the heat of summer. Plants are rhizomatous and can spread quickly. Flowers bloom in bouquets at the top of the stems and rise above the foliage. The outer surface of the flowers is white and the inner surface has violet nectar lines. They are about a 1 ¼ inches long and resemble the finger of a glove. The top lip of the flower has 2 lobes while the bottom lip has 3 slightly larger lobes. The stalk and the outside of the flowers are covered in short dense hairs. Each flower is created with a white style surrounded by 4 fertile black tipped stamens and 1 yellow tipped sterile stamen that has a very noticeable tuft of small hairs which gives it the name of beardtongue. When in bloom, 'Husker's Red' will attract a large number of butterflies and hummingbirds. Pests include root rot if grown in wet poorly drained soils and leaf spots can occur. *Penstemon digitalis* 'Husker's Red' is listed as deer and rabbit resistant.

***Penstemon digitalis* 'Husker's Red' is grown for its white tubular flowers and colorful foliage**
Photo: Ginny Rosnkranz

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 **505 DD** (Aberdeen) to **847 DD** (Reagan National). 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.

Basswood lace bug – nymph (462 DD)
Lesser peachtree borer – adult emergence (468 DD)
Maskell scale – egg hatch 1st gen (470 DD)
Oystershell scale – egg hatch 1st gen (486 DD)
Gypsy moth – egg hatch (507 DD)
Cottony camellia/taxus scale – egg hatch (520 DD)
Euonymus scale – egg hatch (522 DD)
White prunicola scale – egg hatch (594 DD)
Bagworm – egg hatch (602 DD)
Juniper scale – egg hatch (694 DD)
Oak lecanium scale – egg hatch (789 DD)
Japanese maple scale – egg hatch 1st gen (829 DD)
Calico scale – egg hatch (834 DD)
European fruit lecanium scale (940 DD)

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

Degree Days (as of June 3)

Aberdeen (KAPG)	505
Annapolis Naval Academy (KNAK)	630
Baltimore, MD (KBWI)	698
Bowie, MD	756
College Park (KCGS)	658
Dulles Airport (KIAD)	673
Frederick (KFDK)	651
Ft. Belvoir, VA (KDA)	733
Gaithersburg (KGAI)	612
Greater Cumberland Reg (KCBE)	546
Martinsburg, WV (KMRB)	541
Natl Arboretum/Reagan Natl (KDCA)	647
Salisbury/Ocean City (KSBY)	718
St. Mary's City (Patuxent NRB KNHK)	809
Westminster (KDMW)	640

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 calculatorThresholds in: Fahrenheit °F Lower: 50 Upper: 95 Calculation type: simple average/growing dds Start: Jan 1

CONFERENCES

June 12, 2020 (8 a.m. to 2 p.m. EDT)
25th Annual Procrastinator's Pesticide and Urban Nutrient Management **Virtual** Conference
University of Maryland Extension - Montgomery County
Location: This program will be conducted on-line.

Program Recertification (as of 5/22/20):
Maryland - CORE, 3A, 3B, 3C, 6, 7A and 10
Maryland Turf NM Credits - 2 CEU's

For more information and to register

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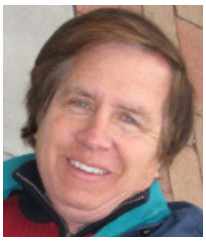

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Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.