UNIVERSITY OF MARYLAND EXTENSION

# TPM/IPM Weekly Report

## for Arborists, Landscape Managers & Nursery Managers

**Commercial Horticulture** **June 17, 2022**

### 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 sgill@umd.edu


**Coordinator Weekly IPM Report:**
Stanton Gill, Extension Specialist, IPM and Entomology for Nursery, Greenhouse and Managed Landscapes, sgill@umd.edu. 410-868-9400 (cell)

**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) and Kelly Nichols (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)


## Biological Control for Nurseries and Greenhouses Conference

By: Stanton Gill

On June 30, 2022, The University of Maryland Extension and MNLGA have organized a Biological Control Conference that will help you move forward with biological control in your operation. On July 1, we will have a morning session with a live demonstration of using a commercial steam device to control weeds in nurseries. This session on the second day will be hosted at Emory Knoll Farms, Street, Maryland.

We are bringing in speakers from Maryland, across the country, and from Canada to share information on practical biological control options.

**Registration is $90 for members and $140 for non-members.**

**The agenda and registration link are available on-line.**

## Drone Training

**July 28, August 4, and August 11, 2022**

**Registration information and links are available on the IPMnet conference page**

## Spotted Lanternfly 2022

By: Kenton Sumpter

Hatch occurred in the first week of May this year. This is in keeping with predictions made by the USDA. Spotted lanternfly is currently between its 2nd and 3rd instar stages. We expect to see 4th instars in the next two weeks. The MD Department of Agriculture has pursued a strategy of aggressive surveying of transportation related businesses and some vineyards across the infested counties in the state. It is our hope to slow the spread of spotted lanternfly by reducing the population numbers near distribution centers, truck stops, warehouses and railroad intersections. We are also trying to provide some relief to heavily impacted vineyards in the state. We are still very resource-limited, so we cannot guarantee treatment to all properties that sign treatment release agreements. If we feel that we can perform a treatment on a specific property, then we will contact the property owner and schedule a treatment date. We will pursue surveying and insecticidal treatments throughout the spring and summer. Once the adults begin to die off at the end of the year, we will shift to hunting for egg masses and destroying them.

It is our hope to have several billboards up by the end of July, just in time for the adults to appear. Currently, we have two billboards; one on 15 S in Frederick County and on 50 E in Wicomico County. We are also in negotiations to post ads in several local papers to raise awareness of spotted lanternfly in affected counties.

In January, the spotted lanternfly quarantine was expanded to include nine new counties. Letters will soon go out to large employers in the affected counties urging them to take the spotted lanternfly permitting course on our website. This course provides information on the actions businesses can take to identify and manage spotted lanternfly. Acquiring a permit is mandatory for any business that may move regulated articles within or from a quarantined area.

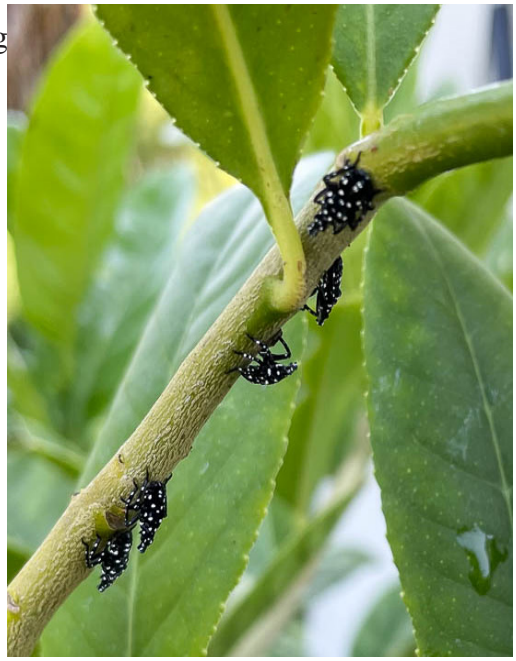
We continue to field responses from Maryland residents regarding spotted lanternfly sightings and management related questions. We encourage anyone that wants to report sighting spotted lanternfly, please go to our online survey and do it there. Please, reserve the email (dontbug.md@maryland.gov) and our office phone number for management questions. We expect spotted lanternfly to be as bad as they were last year. We encourage all residents to destroy the insects wherever they find them, and to report their sightings as accurately as possible. Thank you.

## Update on Spotted Lanternfly Trials

By: Stanton Gill

Brian Kunkel, Suzanne, Sheena, Hannah, Madison, and I were collecting data on our spotted lanternfly trial on Thursday. The nymphs were predominantly in the 2nd instar stage in Harford County, but we found some newly hatched 1st instar nymphs present. They are much easier to photograph on cloudy days when they do not see shadows cast on them which results in them running away from you.

Ed Snodgrass shot this beautiful picture of 2nd instar nymphs. He is finding them everywhere. They are feeding on an Assada lemon tree in this photo.



**Spotted lanternfly nymphs along the stem of an Assada lemon**
**Photo: Ed Snodgrass**

## Weather and Impacts So Far

By: Stanton Gill

Two weeks ago, I put out NOAA's long-range weather prediction for this season. It was more frequent than normal rain for the East Coast and hotter than normal temperatures for the west. So far, it is coming true to the prediction. The West is experiencing record high temperatures, in some areas experiencing temperatures of over 100 °F in June. In Texas, it reached 104 °F, and parts of Colorado reached 109 °F. The power grid in the West and Mid-west was strained from so many people turning on their air conditioners. Our weather this week has been frequent rains with the warm air blowing in from the western states.

One of the impacts has been deer activity is way up in June. If you look on the sides of the roadways you see many deer struck by cars. We have people reporting deer activity in the morning and evening mainly, but some are seeing deer wander out in the middle of the day with the cool temperatures. Deer populations in urban counties of Maryland are reaching extremely high numbers and auto accidents involving deer are on the rise lately. We are also getting several reports of deer browsing in nurseries and in the landscape.

## Fletcher Scale

This native soft scale prefers arborvitae (*Thuja* spp.) and yew (*Taxus* spp.). However, it has also been reported to attack juniper and cypress. First instars (crawlers) are smaller, flatter, yellowish in color and often feed on needles. One generation is produced each growing season in Maryland.
**Monitoring:** Look for crawlers on terminal twigs and needles. In heavy infestations, large amounts of honeydew and sooty mold will be produced.
**Control:** Use Talus or Distance mixed with .05% horticultural oil when crawlers are present and if infestation warrants control.

**Fletcher scale is hatching out this week in central Maryland**
**Photos: Marie Rojas, IPM Scout**

## Fall Webworms

We are continuing to get reports of the first generation of fall webworms feeding this week. Marie Rojas, IPM Scout, found them on *Cercis texensis* 'Oklahoma'. We will see this first generation continue to be active through the rest of June. Paula Shrewsbury discussed paper wasps as one of the predators of the caterpillars in the August 13, 2021 IPM Report.

**Control:** If possible, prune out webbed terminals. Bt, horticultural oil, or insecticidal soap can be used for early instars. There are many predators and parasites that help keep this native pest below damaging levels.

**The first generation of fall webworm caterpillars are feeding this week.**
**Photo: Marie Rojas, IPM Scout**

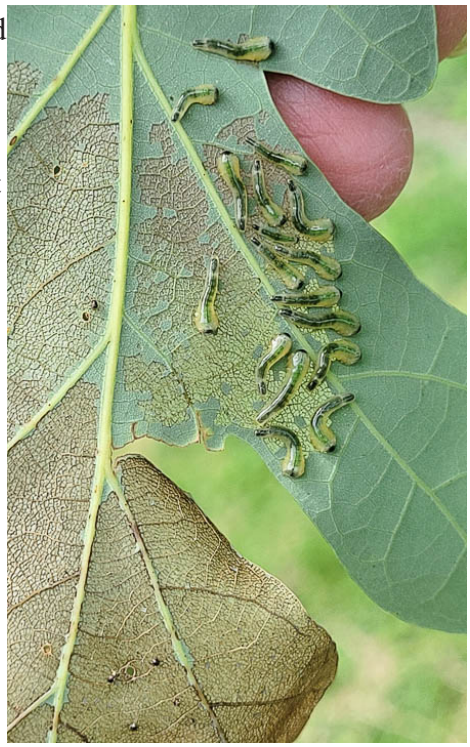
## Potato Leafhoppers

Marie Rojas, IPM Scout, is reporting hopperburn injury on red maples this week. Potato leafhoppers tend to be a problem on nursery trees and are not as likely to be found in high numbers on landscape trees. Potato leafhopper feeding by adults and nymphs causes the tip growth on maples to curl over and harden which is typically referred to as 'hopperburn'. The distorted growth is often mistaken as herbicide damage. Multiple generations continue to damage the new tip growth that flushes out on maples. A systemic insecticide can be used for control.

**Hopperburn damage from potato leafhopper feeding is mostly a problem on nursery plants**
**Photo: Marie Rojas, IPM Scout**

## Oak Slug Sawflies

Marie Rojas, IPM Scout, is reporting oak slug sawflies are beginning to feed on *Quercus alba* this week. 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. There are parasites and diseases that help keep the numbers of this pest down.



**Oak slug sawflies skeletonize the undersides of the leaves**
**Photo: Marie Rojas, IPM Scout**

## 2022 Disease Update: Prevent Bitter Rot on Apple

From Kari Peters - Penn State University Extension

We have entered the time when bitter rot management on apples begins. Considering we have been experiencing frequent rain showers and very warm weather, these are ideal conditions for the bitter rot fungi to wreak havoc in the orchard.
Growers are encouraged to apply fungicides on bitter rot susceptible apple blocks before any rain event.

**Bitter Rot Management**
Bitter rot is one of the most important fruit rots to affect apple growers in the Eastern U.S. over the last several years. The fungus causing the disease is one of the few fruit rot organisms that can penetrate the unbroken skin of the fruit. When the spore penetrates the skin, the infection will then go dormant (quiescent phase) for a period of time. During this time, the spore does not grow and is not susceptible to fungicides. Consequently, fungicides must be applied before the spore's initial infection.

In contrast to apple scab, you cannot count on fungicides to successfully control the bitter rot fungus post-infection. Maturity of the fruit, temperature, humidity, and presence of disease are factors that determine when the quiescent period ends and the disease symptoms manifest. By the time you see symptoms, it is too late for disease control.

Over the last several years, we have been studying how to manage bitter rot best. Our research to date has shown that the bitter rot spores are available all season long, most likely residing throughout the tree in buds and mummified fruit left in the tree. The spores are dispersed by rainwater, and high disease pressure is favored by warm temperatures and prolonged periods of moisture. We have shown that fruit are most susceptible to infection when these conditions are most favorable, which is typically from late June through harvest. During this period, growers are encouraged to apply fungicides before the infection period (i.e., rain events). We have studied all the fungicides available to date labeled for apples and have identified those that are best for managing bitter rot. Captan (2-3 lb/A) is still the best bet for managing bitter rot. However, during frequent rain

events, captan will eventually wash off. During these events, growers are encouraged to tank mix one of the following with captan (2-3 lb/A) that will offer a bit more control during:

Aprovia (FRAC 7; 30 day PHI)
Omega (FRAC 29; 28 day PHI; Use at 13.8 fl oz/A)
Flint Extra (FRAC 11; 14 day PHI)
Luna Sensation (FRAC 7 + 11; 14 day PHI)
Merivon (FRAC 7 + 11; 0 day PHI)
Be sure to rotate FRAC groups for fungicide resistance management. Growers need to remember what was applied in the early season to manage apple scab since FRAC 7 and FRAC 11 fungicides, regardless if they are in a premix or by themselves, are limited to four complete spray applications per year. If there are multiple rain events in one week, be mindful of the amount of rain that has fallen and when the fungicide was last applied to determine if reapplication is necessary during this time.

**Fungicides need to be applied prior to any rain event to successfully manage bitter rot.**
**Photo: K. Peter, Penn State**

Additional products that have been observed to help with bitter rot management can be added. Research in the Southeastern U.S. has shown that adding phosphorous acid-based products (Rampart, ProPhyt, etc.) helps with bitter rot control. We are currently evaluating these products under PA conditions. We have also observed Regalia (1-2 qt/A) tank-mixed with a conventional spray application gives an added boost in protection, which would be most beneficial during seasons with frequent rain events, such as the summer of 2018. Organic options are limited. We have observed control using sulfur; however, sulfur can cause fruit russeting when temperatures are at 80°F or higher. Bacterial-based products, such as Serenade and Double Nickel, have offered limited rot protection but must be applied repeatedly since these products can be washed off easily. We are currently researching additional alternatives to increase the tools in the grower toolbox.

## Catalpa Sphinx Moth Caterpillars

Marie Rojas, IPM Scout, is finding catalpa sphinx moth caterpillars feeding on *Catalpa* this week. There are multiple generations so caterpillars will be found throughout the summer.
**Control:** Spray applications are often not practical, and parasites pretty efficiently take care of this colorful caterpillar. If you have to treat, then use Bt in the early stages.

**Catalpa spinx moth caterpillars will be found throughout the summer.**
**Photo: Marie Rojas, IPM Scout**

## Spongy Moth Makes a Comeback in New England

By: Stanton Gill

My sister-in-law lives in New Hampshire, outside of Concord. She sent pictures of caterpillars and caterpillar poop covering her deck. She said these larvae were defoliating the oaks in her neighborhood. These are what people used to call gypsy moth, *Lymantria dispar dispar,* but it has been changed to the name "spongy moth". They are evidently making a big comeback in the New England area in 2022. The pictures she sent show caterpillars in the later instar stage. She reports the defoliation on oaks is extensive in her neighborhood. Timothy Abbey, Penn State Extension, is reporting a second year of high populations of the moth in the northern parts of PA. Dan Gilrein, Cornell University Extension, reports scattered outbreaks in upstate New York, but none on Long Island area. In Virginia, Eric Day, VA Tech Extension, is reporting major defoliation in western VA in the mountain areas, west of the blue ridge mountains. Richard Cowells report heavy spongy moth damage in upstate, western Connecticut, in Litchfield County.

## Hibiscus Sawfly Activity

By: Stanton Gill

Dana Wilson, Empire Landscape, LLC, sent in these pictures of sawfly larvae feeding on the native mallow plant. The larvae are going to town on this plant. If your customers have perennial hibiscus plants, check the foliage for sawfly activity. Hibiscus sawfly has multiple generations per season, and we will see additional damage show up in July and August.

**Control:** Spinosad (Conserve) control sawfly larvae.

**Hibiscus sawfly larvae can cause extensive damage to foliage**
**Photos: Dana Wilson, Empire Landscape, LLC**

## Japanese Beetles

We are receiving reports of the start of Japanese beetle adult activity this week. Todd Armstrong, found his first Japanese beetles of the year on horseradish in Jarrettsville and in Baltimore County. Ben Morris, Savatree, is also seeing the adults. We started seeing adults in Howard County on June 14. Acelepyrn or Mainspring can provide control of adults for 2 – 3 weeks.

**Japanese beetle adult on horseradish**
**Photo: Todd Armstrong, Davey Tree Experts**

**Japanese beetle adults are starting to become active throughout the area**
**Photo: Ben Morris, Savatree**

## Bagworms

We continue to get reports of bagworm hatch and feeding activity. Dave Lantz, Lanco Turf, found them in the Hagerstown area on June 14. Ben Morris, Savatree, is also finding them feeding. Bt (Dipel, Caterpillar Attack), Spinosad (Conserve) or Acelepyrn will all give good control of young larvae.

## Cypress Twig Gall

Marie Rojas, IPM Scout, found cypress twig gall on *Taxodium distichum* this week. This gall is formed by a fly in the family Cedidomyidae. These galls seldom cause enough damage to warrant control. If the aesthetic appearance of the tree is an issue, then prune out the galls.

**Cypress twig galls are caused by a fly**
**Photo: Marie Rojas, IPM Scout**

## Beneficial Sightings

**Assassin bug nymph with its prey (left) and lady beetle larva feeding on unhatched lady beetle eggs (right)**
**Photos: Marie Rojas, IPM Scout**

## Beneficial of the Week

By: Madeline E. Potter and Paula Shrewsbury

**A mysterious native egg parasitoid that attacks the invasive brown marmorated stink bug and other insect pests!**


**Figure 1. An adult female *Anastatus reduvii* parasitic wasp next to a brown marmorated stink bug egg mass on a leaf**
**Photo: P.M. Shrewsbury, UMD**

You may have noticed some insect eggs on leaves and bark very early this spring such as mantid oothecae (egg cases) or wheel bug egg masses. These eggs are mantid and wheel bugs' overwintering stage and they have been hatching over the recent weeks. These eggs are not only a way for the insect species to overwinter and reproduce, but the eggs are also utilized by some parasitic wasp species for overwintering and reproduction. Egg parasitic wasps (parasitoids) lay their eggs inside the eggs of other insect species (parasitism). The parasitoid larva will hatch inside the host egg, feed on and kill the host larva/nymph, develop, and eventually emerge as an adult wasp from the host egg. It may sound terrifying, but parasitism can be a form of sustainable insect pest management known as biological control. Biological control, by parasitoids, can be a great management tool against invasive insects like the brown marmorated stink bug (BMSB), *Halyomorpha halys* (Hemiptera: Pentatomidae) and the spotted lanternfly (SLF), *Lycorma delicatula* (Hemiptera: Fulgoridae). Both BMSB and SLF are invasive species which are native to China but were accidentally introduced to the United States and have since spread or are spreading to numerous states. Since the introduction of BMSB and SLF (1990s and 2000s respectively), scientists have been researching different methods to control the pests, including evaluation of different egg parasitoid species in lab and field experiments.

*Anastatus* (Hymenoptera: Eupelmidae) is a genus of egg parasitic wasps that have been found to successfully parasitize and emerge from both BMSB and SLF. *Anastatus* are generalist parasitoids that can attack a

wide range of insect eggs across several orders including Hemiptera (stink bugs, leaf-footed bugs, wheel bugs), Lepidoptera (butterflies and moths), Orthoptera (katydids), and Mantodea (mantids). *Anastatus* species are not only found in China but can also be in your backyard or neighborhood park! A North American native parasitoid *Anastatus reduvii*, can be found in northern South America through eastern North America, but is most commonly detected in the mid-Atlantic region. *Anastatus reduvii* is of particular interest for BMSB control because studies in Maryland nurseries have shown that *A. reduvii* can account for over 90% of parasitoids emerging from BMSB eggs! Even though *A. reduvii* shows great potential as a biological control agent, not much is known about *A. reduvii*'s phenology, reproductive biology or host range.

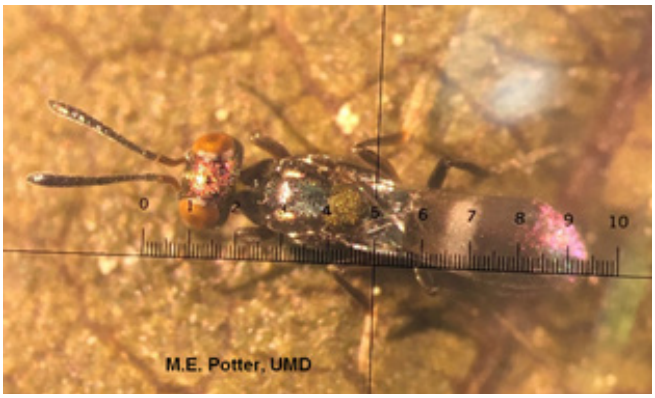



**Figure 2. An adult female *Anastatus reduvii* parasitic wasp under magnification, scale is in millimeters**
**Photo: M.E. Potter, UMD**

The Shrewsbury lab, including myself, set out to learn more about *A. reduvii*'s host range in Maryland through a Community Science project in 2021. Over 50 Master Gardeners, from five different Maryland Counties, volunteered as Community Scientists and collected any and all insect eggs they could find in Maryland and sent them to the Shrewsbury lab, to rear out any insect larvae, nymphs, or adult parasitoids from the eggs. The Master Gardeners collected over 12,800 insect eggs and from their data we have been able to identify at least four new insect egg host species for *A. reduvii*. Our lab is currently working on a model to tell us the best predictor of *A. reduvii* parasitism so we may provide recommendations to growers and landscapers on which plant species support the highest number of parasitoids and the highest parasitism rates, towards enhancing biological control and reducing the likelihood of pest outbreaks.

*Anastatus* parasitoids prefer arboreal habitats, so the next time you are in a wooded area, look around for insect eggs on leaves and bark and you may spot an ant-like wasp standing on the eggs. Thank this powerful yet mysterious beneficial for helping to control pests like BMSB. Certain *Anastatus* species are being researched as biological controls of SLF. If you want to support parasitoids in your environment, avoid spraying broad spectrum pesticides and grow flowering plants to provide a nectar/food source for the adult wasps.

## Weed of the Week

By: Chuck Schuster

Musk thistle, also known as nodding thistle, *Carduus nutans,* has been showing its head above the shrubs in some landscapes and in unmanaged areas this last week. Musk thistle is an erect biennial that is often found throughout this region. This weed can grow to 6.5 feet in height, with seedling leaves being from .25 to .5 inches long and up to .25 inch wide. Seedling leaves are found mostly without hairs and the plant establishes a rosette growth habit early in the first year of growth. The root system is a large thick taproot, which will be hollow near the surface. The easy to identify characteristics include an erect, spiny leaf, deeply lobed leaves and large flowers that are from pink to purple in color. Similar to Canada thistle, musk thistle lacks rhizomes and will take on a rosette growth habit, which Canada thistle does not. Also similar to bull thistle, musk thistle lacks hairs on the upper leaf blade.

Control can be accomplished by using many broadleaf post emergent herbicides. In turf areas 2,4-D, and dicamba are effective. Use caution as these products have the ability to volatilize and move off site in warmer temperatures. In beds and nursery rows apply a 2% solution of glyphosate (e.g., Roundup) or triclopyr (e.g., Garlon) providing enough coverage of the leaves and stems for a slight amount of runoff. Timing is very important; treatments should be applied during the rosette stage or prior to flowering, fall application after

repeated mowing gives the best control. Cultural controls would include fertility management, maintaining a dense turf, but being mindful of nitrogen applications, as excess nitrogen will increase weed growth. A high mowing height to allow shading of newly germinating seeds is an effective management tool in turf. Burning is not an effective method of control for musk thistle because of the deep root system.

**Musk thistle in bloom**
**Photo: Chuck Schuster**

## Plant of the Week

By: Ginny Rosenkranz

*Hydrangea macrophylla* Twist-n-Shout®, a member of the Endless Summer® Hydrangea, is a lovely big leaf hydrangea who's flower colors respond to the soil's acidity or alkalinity. The more acid the soil, the bluer the flowers. The closer the soil is to a pH of 7, the pinker the flowers are. The flowers of Twist-n-Shout® are lovely lacecaps, which means that the remontant or reblooming flowers are arranged on a slightly domed bouquet with the large colorful, sterile flowers surrounding the tiny, but fertile flowers in the center. Each of the vibrantly colored flowers are at the tip of each growing stem. The flowers bloom on last summer's growth (as long as the winter was kind) and continue to bloom on the spring and early summer's growth. The sturdy stems that hold the flowers above the bright green foliage are red in color, adding an additional spot of color that either contrasts with the blue flower or enhances the pink flowers. Like all of the big leaf hydrangeas, Twist-n-Shout® thrives in morning sun and afternoon shade, and demands moist, rich but well drained soils. Big leaf hydrangea will wilt if the soil is allowed to dry out, damaging the flowers. The plants are cold tolerant in USDA zones 4-9 and the flowers attract many pollinators. Because these flowering plants bloom more than once a year, they should have a light application of low nitrogen fertilizer or compost in the spring and again in late fall. Pruning should be done to reduce the size of the plant after the first flowers have finished. Dead wood should be pruned out in the early

***Hydrangea macrophylla* Twist-n-Shout®**
**Photo: Ginny Rosenkranz, UME**

spring along with any very thin stems. *Hydrangea macrophylla* Twist-n-Shout®grows 3-5 feet tall and 3-4 feet wide and look wonderful in a shady garden as a specimen or in in a border, or in a container, adding a bit of sophistication to any garden. To quote Dr. Dirr, 'Hydrangeas in general are trouble-free and reward the gardener manifold.' The occasional insect pests can include aphids, rose chafer, oystershell scale, two-spotted mites. Twist-n-Shout® is resistant to powdery mildew, but will still get the Cercospora fungi, which causes the leaves to have irregular reddish brown lesions in the late summer and fall.

### Degree Days (as of June 15)

| | |
|---|---|
| Aberdeen (KAPG) | 954 |
| Annapolis Naval Academy (KNAK) | 1110 |
| Baltimore, MD (KBWI) | 1170 |
| College Park (KCGS) | 1026 |
| Dulles Airport (KIAD) | 1110 |
| Ft. Belvoir, VA (KDA) | 1144 |
| Frederick (KFDK) | 991 |
| Gaithersburg (KGAI) | 1019 |
| Gambrils (F2488, near Bowie) | 1098 |
| Greater Cumberland Reg (KCBE) | 961 |
| Martinsburg, WV (KMRB) | 925 |
| Natl Arboretum/Reagan Natl (KDCA) | 1334 |
| Salisbury/Ocean City (KSBY) | 1216 |
| St. Mary's City (Patuxent NRB KNHK) | 1366 |
| Westminster (KDMW) | 1220 |

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

### Pest Predictive Calendar "Predictions"

By: Nancy Harding and Paula Shrewsbury, UMD

In the Maryland area, the accumulated growing degree days (**DD**) this week range from about **925 DD** (Martinsburg, WV) to **1366 DD** (St. Mary's City). 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.

- Cottony maple scale – egg hatch / crawlers (**872 DD**)
- European fruit lecanium scale – egg hatch / crawlers (**904 DD**)
- Cryptomeria scale – egg hatch / crawlers (**937 DD**)
- Azalea bark scale – egg hatch / crawlers (**957 DD**)
- Japanese beetle – adult emergence (**1056 DD**)
- Fletcher scale – egg hatch / crawler (**1105 DD**)
- Fall webworm – egg hatch (1st gen) (**1142 DD**)
- Indian wax scale – egg hatch / crawler (**1145 DD**)
- Oriental beetle – adult emergence (**1147 DD**)
- Peachtree borer – adult emergence (**1181 DD**)
- Green June beetle – adult emergence (**1539 DD**)
- Pine needle scale – egg hatch / crawlers (2nd gen) (**1561 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.

## July 7, 2022 Greenhouse Growers Field Day – Tidal Creek Growers

**By: Stanton Gill**

MNLGA is working closely with Tidal Creek Growers in developing an on-site Greenhouse Tour and Education Day for greenhouse growers at the Tidal Creek Greenhouse in Earleville, MD. The sessions will start with educational stations in the greenhouse. A tour of the greenhouse herbaceous annual and production facility will be conducted in the afternoon. For schedule and registration information, go to the MNLGA site.

## Conferences

**June 23, 2022 (1 - 3 p.m.)**
IPM Scouts' Diagnostic Session
Location: CMREC, 11975 Homewood Road, Ellicott City, MD 21042
Registration information links is available on the IPMnet conference page

**June 24, 2022** (Virtual)
Turf Program
Contact: Mark Carroll, University of Maryland

**June 30, 2022**
Greenhouse Biological Control Conference
Location: Maritime Institute, Linthicum Heights, MD
Registration is now open.
Contact MNLGA at 410-823-8684 with any questions.

**July 28, August 4, and August 11, 2022**
Drone Training Program
Registration information and links are available on the IPMnet conference page

**UMD ADVANCED LANDSCAPE IPM LAB-FIELD COURSE (in-person)**
Dates: July 28 and 29, 2022 (8:00 a.m. – 4:00 p.m.)
Location: Plant Science Bld, University of Maryland, College Park, MD
Description: This 2-day course will consist of both field walks around campus and activities in the lab. Sessions will focus on diagnostics of plant disease and insect problems, and pest and natural enemy identification using live and other specimens, and interactive activities. Labs will be run by instructors (*Drs. Paula Shrewsbury, Mike Raupp, Karen Rane*).

**For registration and course details: Email Amy Yaich at umdentomology@umd.edu**

## Fall Horticulture Classes at CCBC

You can find out about fall horticulture classes at CCBC by going to their website.

**Commercial Ornamental IPM Information**
**extension.umd.edu/ipm**

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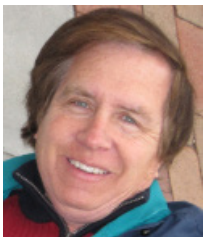
## CONTRIBUTORS:

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Assistant



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