

Commercial Horticulture

March 26, 2021

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Integrated Pest
Management for
Commercial Horticulture
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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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Disease Information: Karen Rane (Plant Pathologist) and David Clement (Extension Specialist)

Weed of the Week: Chuck Schuster (Retired Extension Educator)

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Welcome Back to the Regular IPM Alert Season

By: Stanton Gill

We have all of our regular authors back online and you will receive IPM Alerts each week.

What is Big in 2021:

- Brood X of the Periodical Cicada will grab the attention of your customers in mid May through June. We have a series of articles that will help you through this 17-year experience.
- Ambrosia beetle activity – we had one *Xylosandrus germanus* show up in our traps at CMREC on March 11. The good news is the weather went back to cold and stopped this activity – for a short time. We sent out an alert on Monday with additional flight activity from this beetle
- Spotted lanternfly. In 2020 the SLF expanded its areas of activity in Maryland and now includes Hagerstown, Washington County, Maryland. MDA is deciding if this warrants a quarantine or not in this area. PA has added [8 additional counties](#) in PA to the quarantine area in 2021. VA also expanded by [two counties](#) for quarantine.
- MDA hired an entomologist to work on spotted lanternfly and they will start in April of 2021.
- Baltimore County is considering legislation to ban the use of glyphosate on county properties.

Well, let's get rolling with the IPM topics.

Cicada Program

There will be a Zoom program on cicadas geared for foresters, but is open to anyone. Stanton Gill will be presenting. We are coordinating with Maryland DNR on this session. The session will be recorded.

It will be at 3 p.m. on March 31, 2021.

The registration link is

<https://umd.zoom.us/meeting/register/tJcvcu-gqDorHdVt8-YnTLqOr4Os1AGzEfpN>.

Spruce Spider Mites

By: Stanton Gill

One of the earliest Tetranychid mites to be active is the spruce spider mite, *Oligonychus ununguis*. The mite overwinters as eggs attached to the needles and should be hatching very soon and may be hatching if you are in a warm micro-environment. Examine junipers, spruce, Leyland cypress, balsam fir, most evergreen conifers, and hemlock for this mite. Heather Zindash, The Soulful Gardener, shot this close-up picture of the eggs on a plant in the Bethesda area this week. Eggs usually start to hatch around 50 degree days. We have reached this level in several areas this week.



Spruce spider mite eggs on cryptomeria
Photo: Heather Zindash, The Soulful Gardener

Spider mites have piercing-sucking mouthparts. As they feed, they withdraw sap containing chlorophyll from the needles. They prefer to feed on older growth and will generally not feed on current-year needles until they have hardened off.

Horticultural oil can be used at a 1 -2 % rate to kill eggs in March when temperatures are in the 50 – 55 °F range for a couple of days. Do not use oil on blue spruce or it will remove the blue color of the needles.

Ambrosia Beetle Update

The heavy rains on Wednesday seem to have suppressed flight activity for the ambrosia beetles. We found one *Xyleborinus saxesenii* in the trap Thursday morning and nothing in the trap on Friday afternoon at CMREC.

Return of Brood X Periodical Cicadas

By: Paula Shrewsbury

Brood X Periodical Cicadas are returning this spring after their last emergence in 2004. Although cicadas are a biologically unique and exciting phenomena, for nursery producers and landscapers they can cause damage to trees and shrubs. Stanton Gill gave a nice overview of periodical cicadas in an earlier issue of the [IPM Newsletter in February](#). Throughout the next few months, we will provide additional cicada information and updates on their activity.

Today I want to focus on what cicada activity we are seeing to date this year, tree damage, and possible measures you might consider to protect trees from cicada damage. Peak emergence of cicada nymphs should start around mid-May. Prior to this, the nymphs begin burrowing to the soil surface in preparation for emergence. Right now, as those of you who are digging for planting have already noticed, cicada nymphs can be found about 8-12" down in the soil. A few days ago, I was digging in my yard and in one shovelful there were 3-4 cicadas (see image). This was very exciting! Another cicada phenomenon that indicate cicada nymphs have moved up in the soil profile are recent reports of "something" digging up lawns. Cicadas are good eating for many animals (and some people), and certain animals are very good at sensing the cicadas (food) in the soil. This was likely raccoons, skunks, or some other soil foraging beast having a cicada feast. We see this same phenomenon in lawns with white grub infestations. In the next few weeks or so, holes (~1/2" / thumb size diameter) (see image) will start showing up in the ground under trees, leaf litter, or flagstone type materials. Some holes are covered with mud turrets (mounds) (see image). It seems like cicada nymphs get as ready as possible so when the soil temperature hits 64 °F they can get out of the ground with optimal speediness.

Periodical cicadas have sucking mouthparts and feed on xylem fluid of trees (nymphs on roots, adults on tree branches), but this feeding is not known to cause significant damage to trees. Woody trees and shrubs, including a wide range of ornamental and fruit trees, are damaged when cicadas oviposit into branches. An [article in TCIA Magazine by Mike Raupp reports on trees most heavily attacked by cicadas](#) and some that were not attacked. Branches used by cicadas for oviposition are usually pencil-sized or slightly larger in diameter. The female cicada makes slits into the outer ends of branches and deposits eggs (see image), wounding the tree. Each slit, referred to as an egg nest, contains 20-30 eggs, and there are usually several or more egg nests in a row on a branch. A single female can lay from 400 to 600 eggs in her lifetime. Usually, the branch outward from the oviposition wound dies back and results in branch flagging (see images). Because cicadas are so abundant (reports of up to 1.5 billion emerging per acre), there is a lot of flagging to trees. Larger mature trees (see image)



Cicada emergence holes over a square foot of ground.
Photo: M.J. Raupp, UMD



Cicada emergence hole with a mud turret on top of it.
Photo: from CicadaMania.com

usually recover from this damage, and flagged branches often break off with winds. It is the smaller, and newly planted trees (see image) that cannot tolerate this amount of damage and suffer the most and may even die.

What possible measures can be taken to prevent cicada injury to small, young trees, and which work the best? First, note that cicadas can be patchy in their distribution. Although millions of cicadas will be emerging in MD (and 14 other states), not all areas will have them. For example, I remember in 2004 being contacted by several people from Frederick MD wondering why they did not have cicadas (they felt they were missing this amazing event). If your area did not have cicadas in 2004, than you will likely not have an abundance of cicadas in 2021. Problem solved. Counter

to that argument, if you did have cicadas in 2004 it is likely you will have cicadas and cicada damage in 2021. Some protective measures may be more feasible than others, and some more feasible in landscapes when a property only has a few small trees to protect, than nurseries that have fields of small trees to protect. Although one of the first thoughts may be to treat trees with insecticides, several studies have shown that insecticides are not the best line of defense (Hogmire et al.1990; Frank 2020). Studies conducted in orchards clearly demonstrated the efficacy of netting to exclude cicadas (see image) was greater than insecticides. To be effective the netting mesh must not be larger than 1 cm (3/8") in size. Research demonstrated that soil drenches of imidacloprid applied to sapling *Tilia* were only about half as effective at preventing egg laying compared to 1.0-cm mesh nets (Ahern 2005). The material cost to enclose a 3-meter- (10-foot-) tall tree was \$2.82 in 2005. Time to enclose a sapling was a matter of minutes. Remember, cicada adults are good fliers and can move back into areas following insecticide treatments.



Cicada nymph after it has emerged from 17 years under ground.
Photo: P.M. Shrewsbury, UMD



Egg nests made when a female cicada oviposits.
Photo: M.J. Raupp, UMD

Urban foresters and planners, landscapers, and nursery producers should consider other measures to reduce cicada damage such as delaying spring planting until after cicadas have completed their life cycle (mid-late June). For both larger and smaller trees, careful sanitary pruning following Brood X emergence, may enhance wound closure and reduce structural defects in branches. Now is the time to be talking with your clients about the upcoming Brood X periodical cicadas. Inventory properties to evaluate trees at risk and discuss plans for protecting those trees. See below for additional resources to help answer your and your clients questions about cicadas.

For more information on Brood X periodical cicadas see:

Article by Dr. Mike Raupp (UMD) in TCIA Magazine (Jan. 2021) on periodical cicadas.
<https://tcimag.tcia.org/tree-care/return-of-periodical-cicadas-in-2021-biology-plant-injury-and-management/>

The Department of Entomology and its Cicada Crew (Drs. Shrewsbury and Raupp, and a group of graduate students) have created a [Cicada Crew UMD website](https://CicadaCrewUMD.weebly.com) that answers questions about Periodical Cicadas and will help everyone learn more about these amazing insects. Please explore this website and join in the excitement about the upcoming Brood X Cicada emergence! The site has FAQ and additional Resources sections that will help Green Industry professionals and Master Gardeners and Extension people address questions from the public. To access the website go to: <https://CicadaCrewUMD.weebly.com> OR Google Cicada Crew UMD.



Large, mature trees can recover from flagging damage caused by cicadas.

Photo: M.J. Raupp, UMD



Smaller and newly planted trees often cannot tolerate cicada damage and may even die.

Photo: M.J. Raupp, UMD



Excluding cicadas with netting is one of the most effective methods to reduce damage.

Photo: M.J. Raupp, UMD

Unusual Plant

Mark Schlossberg, Plant Sleuth, shot these pictures of a plant in flower this week. Phil Normandy at Brookside Gardens recognized it.

Here is what Phil said: "It is *Edgeworthia chrysantha*. Increasingly being used. Never fails to attract attention. Very bare and stark all winter, but buds fully formed like small broccoli florets. Then in March they open to this fabulous chrome yellow with a sweet strong honey/molasses scent. Bee magnet.

Formerly assumed not hardy. It's true in cold windy nights or days flowers can freeze-dry in the depths of winter then when you go to check them in March, they fall off. Not every year, depends on weather combo. Deer will not touch. Believe it or not related to daphne. Gets quite broad so site carefully. Wonderful clean foliage all summer. No pests. Full sun or light shade. Average soil that doesn't get saturated."

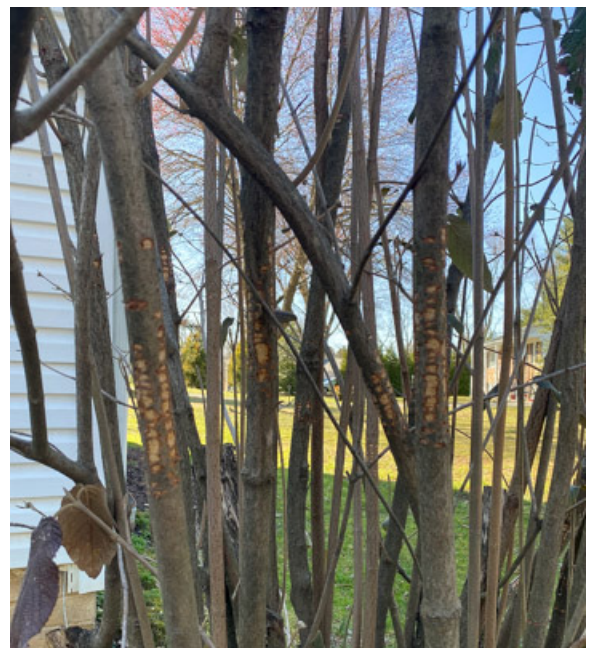


Edgeworthia chrysantha in bloom
Photos: Mark Schlossberg, ProLawn Plus, Inc.



Sapsucker Damage

Bob Mead, Mead Tree and Turf, found yellow-bellied sapsucker damage on viburnum this week.



Yellow-bellied sapsucker damage on viburnum
Photo: Bob Mead, Mead Tree and Turf

Japanese Beetle Grubs in the Landscape

By: Stanton Gill

We had an inquiry as to whether Japanese beetle larvae feed in landscape beds and not just in turfgrass areas. Interesting question that we asked Dan Potter, retired entomologist with University of Kentucky, who gave us these comments:

Regarding the question "can Japanese beetle grubs develop and reach maturity on hosts other than grass roots, the following information is copied from Fleming 1972's Biology of the Japanese Beetle (<https://webdoc.agsci.colostate.edu/bspm/JapaneseBeetle/Fleming1972.pdf>) which summarizes much of the 1916-1970 research on the pest. As you know, Fleming and those other early scientists were good observers:

"The grubs feed on the roots of garden and truck crops. Extensive feeding on the roots of corn, beans, tomatoes, and other crops reduces their vitality and sometimes kills the plants. (Smith and Hadley 1926; Fleming 1963a) Grubs have destroyed many plants in nursery seedbeds and young plants in the field (fig. 13) and have killed 50 percent of the plants in strawberry beds. Usually the plants were killed by girdling the main roots at depths of 1/2 to 1 1/2 inches below the surface of the ground. (Fleming et al. 1937; Fleming 1963a)"

I've dug many healthy JB grubs from beneath mulched flower beds that contained few, if any, grassy weeds, and in compost piles and even bins of decomposing bark mulch. I've held them a long time on peat moss, compost, and other high organic matter substrates. I suspect that they can develop and reach maturity on compost alone but have not tested that.

Endophytes and Turfgrass

By: Stanton Gill

While we had Dan Potter's attention we asked him to comment on endophytes in turfgrass since many of the turf-type tall fescues are being used extensively in lawns.

Here are his comments: "Like many of you, I teach students and professional audiences about managing turfgrass insect pests. Invariably I mention use of endophyte-enhanced grasses (tall fescue and perennial ryegrass) as strategy for building a lawn that's relatively resistant to stem and leaf-feeding turf pests; e.g., billbugs, chinch bugs, and sod webworms. Also, past University research (e.g., Richmond et al.) showed that over-seeding insect-damaged turf with viable E+ grass can deter further damage from the aforementioned pests.

But how useful is that recommendation? Endophytic fungi present in turfgrass seed at the time of harvest can lose viability quickly if the seed is not stored under proper (refrigerated) conditions. In our research we've had this happen even in shipment of E+ seed from a reliable turf breeder when the sacks were left on a loading dock for a few days. What is the chance that a homeowner who goes to the local farm supply store, garden center, or big box store will be able to find and purchase grass seed with viable endophyte? I know I can't find it over-the-counter in KY, nor does it seem to be readily available on-line. Is the mantra to "plant endophytic grass for a more sustainable lawn" really an option for homeowners or landscapers in most states?"

Dan checked with Tim Phillips, his UK colleague who is a tall fescue breeder who frequently supplies endophytic seed to researchers. Tim Phillips confirmed Dan's thoughts on how long endophytes will survive in seed stored at room temperature. Dan Potter gave us permission to use this information in our IPM alert. Here is his follow-up after emailing Tim Phillips:

"Thanks to those who shared perspectives on availability of endophyte-enhanced turfgrass seed to homeowners and land care providers. The consensus seems to be that it's unlikely to find such seed at garden centers and

farm supply stores. Regarding viability of endophyte in stored seed, I wrote to Dr. Tim Phillips, an expert turfgrass breeder who ships endophytic seed for use by other researchers. Here's what he says about the probable shelf life at a retail outlet:"

Dr. Tim Phillips' Comments:

“Endophyte (and seed) viability decline rapidly when temperature and moisture levels vary widely. ‘Room temperature’ would be nicer than lots of seed stored in warehouses without AC to keep the temperatures moderate. Some types of packaging do a good job of excluding humidity, but most do not. A forage extension estimate that was used in the past was that one year of fescue seed storage in ambient (barn or warehouse) conditions would lose 50% of endophyte viability. I think most commercial seed sold is not from the year of harvest, so the seed would be 8 months old for the following spring seeding window, and 14 months old the following late summer/fall. If a consumer could obtain ‘fresh’ seed and plant it in the same year it was harvested, then yes, endophyte infection would be recommended.

David Sleper was a tall fescue breeder at the University of Missouri (before he switched to soybean breeding) who did contract turfgrass breeding. He worked with endophyte-free material because he said that is what the consumer would be getting.

I see the recommendation of endophyte-enhanced turfgrass seed being a marketing issue. If vendors would test for endophyte viability and infection frequencies, store seed properly/ideally, and move the seed faster so it is younger, then maybe it would benefit the end user/consumers.”

These are comments from Albrecht Koppenhofer Professor/Extension Specialist, Dept. of Entomology, Rutgers University"

"My understanding in talking to our turf breeders and other turf folks at Rutgers is that in order to have E+ on the label of the seed, the seed has to be tested regularly. Because only the large suppliers have the ability to store the seed properly and the ability to test it, only they would be able to provide seed that has viable endophytes. I don't think the seed loses the endophytes that quickly, like in a few days, unless if it sits in the sun on hot days. I mean, the endophytes survive naturally in the field.

As Dan points out, getting seed with viable endophytes is all but impossible for the average homeowner as the small quantity bags they normally buy from the local farm supply store, garden center, or big box store are not stored appropriately."

Hemlock Woolly Adelgid

Elaine Menegon, Good's Tree and Lawn Care, found hemlock woolly adelgids in Hershey, PA on March 25. Egg hatch of the first generation is at around 300 degree days.

There is a second generation later in the summer.

Control: Spray trees with 2% horticultural oil or insecticidal soap to target crawlers or newly settled crawlers. Systemic insecticides can be applied as a basal trunk application..



Look for egg hatch of hemlock woolly adelgids at about 300 degree days.

Photo: Elaine Menegon, Good's Tree and Lawn Care

Early Season Cherry Shot Hole Prevention

D.L. Clement

The very common foliar symptoms on ornamental flowering cherries in the landscape caused by the “Shot-Hole diseases” will begin very soon. Be aware that management treatments will only provide preventative disease management or slow down the rate of disease development and will not cure already infected leaves. Therefore, early sprays have to start as the new leaves are expanding and continue while rainy periods persist.

Before the cherry leaves emerge is a good time to evaluate your client needs for shot hole prevention. Review last year’s records and discuss management options now. Treatments should be applied very soon in central Maryland and even earlier east and south.

The disease is favored by cool wet spring rains. The symptoms include leaves with many holes, yellowing leaves, and early defoliation. There is not much you can do after infection occurs. Fertilization will not help the tree unless there is a nutrient deficiency. The two pathogens that commonly cause these symptoms are bacterial leaf spot caused by the bacterium, *Xanthomonas pruni*, and cherry leaf spot caused by the fungus, *Blumeriella jaapii*.

These diseases will also continue to infect leaves throughout the growing season if rainy weather persists. Management involves removal of older heavily damaged or poorly growing trees. Try to adjust tree spacing and use proper pruning to allow better air circulation to promote faster leaf drying and remove fallen leaves in the fall to reduce overwintering pathogens. On high value trees or trees with a history of severe foliar disease, the use of fungicides may help

Three fungicides for landscapes include Eagle (myclobutanol), Protect DF (mancozeb) and Cleary’s 3336 (thiophanate methyl). Be Sure to Check all Label Instructions. Also, note that commercial orchards have different fungicide labels for edible cherries and these are not interchangeable with landscape usages.



Premature leaf drop of cherries in mid May 2020
David Clement, UME- HGIC



Shot hole on cherry
Photo: David Clement, UME- HGIC

USDA Press Release: Pandemic Assistance for Producers

After Identifying Gaps in Previous Aid, USDA Announces ‘Pandemic Assistance for Producers’ to Distribute Resources More Equitably: USDA Reopens Program Sign-Up to a Larger Share of Producers with Plans to Expand Outreach and New Programming

Washington, D.C., March 24, 2021 – Agriculture Secretary Tom Vilsack announced today that USDA is establishing new programs and efforts to bring financial assistance to farmers, ranchers and producers who felt the impact of COVID-19 market disruptions. The new initiative—USDA Pandemic Assistance for

Producers—will reach a broader set of producers than in previous COVID-19 aid programs. USDA is dedicating at least \$6 billion toward the new programs. The Department will also develop rules for new programs that will put a greater emphasis on outreach to small and socially disadvantaged producers, specialty crop and organic producers, timber harvesters, as well as provide support for the food supply chain and producers of renewable fuel, among others. Existing programs like the Coronavirus Food Assistance Program (CFAP) will fall within the new initiative and, where statutory authority allows, will be refined to better address the needs of producers.

For all of the details on this assistance, please read the full press release at <https://www.usda.gov/media/press-releases/2021/03/24/after-identifying-gaps-previous-aid-usda-announces-pandemic>

Boxwood Blight – A Constant Threat

By: Karen Rane

While we usually see significant outbreaks of boxwood blight in the late summer and fall in our region, spring weather conditions can also promote this disease. Fallen, infected leaves and stem cankers generated last fall means that there is inoculum ready to cause infection again this year. The fungus survives through the winter in resistant structures called microsclerotia in infected leaves.

We’ve already had several confirmed cases of boxwood blight in landscape boxwoods since January of this year, and each of them produced spores after incubation under moist conditions for 3 days. The pathogen is most active (and produces more spores) when temperatures are 60-80 °F and leaves remain wet for about 48 hours. Keep in mind that foliage within the canopy and closer to the ground will remain wet after rain and dew

events longer than leaves at the tips of branches that are exposed to drying air currents. For anyone managing properties with boxwoods, this disease is a constant threat. Sanitation is critical for managing this disease. As landscapers, it’s important to know which of your clients’ properties contain boxwoods, and which of those are confirmed with the disease – this will aid in helping devise schedules to visit infected properties after healthy properties and minimize spreading the disease. Remember, fungicides can protect healthy boxwoods from infection, but fungicides alone won’t cure plants with the disease.



Dark leaf spots due to boxwood blight infection
Photo: D. Clement, UME

For more information, photos of symptoms, and best management practices, check out the Virginia Boxwood Blight Task Force website (<https://ext.vt.edu/agriculture/commercial-horticulture/boxwood-blight.html>). Another excellent resource for up-to-date information on boxwood is the Boxwood Blight Insight Group website (<https://www.boxwoodhealth.org/>), the outreach portion of a large USDA NIFA SCRI grant project focused on finding answers to managing this disease.



Dark stem lesions caused by boxwood blight
Photo: S. Douglas, Conn. Ag. Expt. Station



Severe defoliation of boxwoods due to boxwood blight
Photo: R. Lynch, Annapolis, MD

Beneficial of the Week

By: Paula Shrewsbury

Beneficial insects are diverse and some are busy early in the season

When the topic of beneficial insects and their relatives comes up, we often think of natural enemies (predators, parasitoids, and pathogens) that provide biological control services, and pollinators (bees and wasps, flies, beetles, and butterflies and moths) that provide pollination services. But don't forget the decomposers and detritivores (beetles, termites, flies, millipedes) that break down organic matter and dead things and recycle nutrients back into the food web. Throughout the season *Beneficial of the Week* will discuss these various beneficial insects. If there is anything in particular you would like to learn about please let me know (pshrewsbury@umd.edu).

This past week with the onset of warm and sunny days, I have been outside looking for insects. I came across a few different beneficial insects that start their activity early in the season. For example, I saw a few solitary bees buzzing around looking for pollen. Mid-March is usually the time of year certain species of solitary bees emerge from their overwintering galleries to begin the next stages of their life. Some solitary bee species build nests in the ground and others nest in "tubes" such as hollow stems of plants or old borer galleries left by beetles or other insects. They collect pollen from early blooming plants such as maple and spring wildflowers. They bring the pollen back to their nesting site, create pollen cakes that they insert into their tube or gallery, lay an egg on the pollen cake (the pollen provides food for the larva when it hatches), and then goes out and start again. It is important to provide early season flowering trees, shrubs, and herbaceous plants in your landscapes for these early pollinators. A great resource (one of many) that contains lists of plants that are good for pollinators and their bloom time is [Protecting and Enhancing Pollinators in Urban Landscapes](#). In addition, a few ground (or carabid) beetle adults crossed my path. Ground beetles may feed on other insects and some feed on weed seeds. Definitely beneficial services. I frequently come across lacewing larvae at this time of year. Trees infested with the armored Japanese maple scale have lacewing larvae foraging on the bark snacking on the scales. Good nutrition after a cold winter. So while you are out and about keep your eyes open for the beneficials, and plant some good plants that will provide the food they might need.



Mason bee female bringing pollen back to her nesting tube.
Photo by M.J. Raupp, UMD



Under this piece of lichen is a predacious lacewing larva.
Note the mandibles sticking out the left side of the "lichen".
Photo by M.J. Raupp, UMD

Weed of the Week

By: Chuck Schuster

Spring is upon us in many ways. Soils have warmed up to the low 50 °F range in most areas. Henbit, *Lamium amplexicaule*, is growing well. Lesser celandine, *Ficaria verna* L, is present in many areas. Soil temperatures are warmer this year on this date than they have been in the last 2 years. This means that pre-emergent weed control for Japanese stiltgrass and crabgrass needs to be out earlier. We have had moisture to activate products that have been applied.

While it may be early by the calendar date, the temperatures of late are going to support spring grassy weed emergence. If not already in the areas with more buildings, soon! Crabgrass and Japanese stiltgrass are the weeds of concern now. Weather can still cool off, and frost or even a freeze can occur.

If you have turf sites that have not received the first application of a pre-emergent for crabgrass, you will need to consider switching to a product that has at least some capacity to provide early post emergent abilities.

Dithiopyr (Dimension) is an early post emergent product that inhibits certain steps in plant cell division. This product can be used on established turf, but not sites that will be seeded with new seed. Dithiopyr is not the product of choice though for Japanese stiltgrass. Barricade (Prodiamine) has provided the highest percentage of control at 86%, with a single treatment in March on the average providing 81% control. Pre-emergent products for crabgrass can still be applied but will not catch those seeds that have already emerged.

Control of crabgrass is not only achieved through herbicide applications. Good soil fertility, proper mowing height, and proper pH are other components in a crabgrass management plan that should not be overlooked. Build a strong turf that is dense to prevent sunlight from reaching the soil to allow germination of crabgrass. The battle with Japanese stiltgrass is not over either. It though, does not respond to cultural methods of control.

For crabgrass, the use of products containing dithiopyr (Dimension) prodiamine (Barricade) and pendimethalin (Pre-M) are shoot and root development. All of these products can be used on established turf, but not sites that will be seeded with new seed. Siduron (Tupersan) is the only product that can be used in a turf setting when overseeding after application is considered. As stated, dithiopyr also provides early post-emergent control of crabgrass and some other annual grasses (not Japanese stiltgrass). Consider utilizing dithiopyr (not at full season rate) if no other applications have occurred this year. A follow-up in a second application can then be either another application of dithiopyr or prodiamine. Utilizing Prodiamine will catch the Japanese stiltgrass that has yet to germinate. This allows for applications to be done over a longer period of time and keep crabgrass under control for the better part of the season.

Other options for crabgrass control include use of Drive (quinclorac), Tenacity (mesotrione), SquareOne (quinclorac + carfentrazone), and Solitare (quinclorac + sulfentrazone). These are post-emergent only products that can be used into late May and June when temperatures are warmer. The benefit with some of these products is that they can be used on a seedling lawn, one that has been seeded and is becoming established. Check the label carefully.

Other options for Japanese stiltgrass are Acclaim Extra (Fenoxaprop) which 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 °F have been found to provide the best environment for success.

Always remember that pre-emergent products will limit root development of the desired species of turf also. Watch the weather for dry spells after application. This will cause a less than desired final result.

Plant of the Week

By: Ginny Rosenkranz

Like a lot of immigrant families, the *Ilex* 'Nellie R. Stevens' and *Ilex* 'Edward J. Stevens's parents came from other continents, one was an English Holly (*Ilex aquifolium*) and the other a Chinese Holly (*Ilex cornuta*). 'Nellie R. Stevens' the holly was actually born in the U.S. Botanic Gardens in Washington, D.C. and the berries from that tree were planted by Nellie R. Stevens the lady in Oxford Maryland in 1900. Although I do not know what happened to the original holly at the U.S. Botanic Gardens, the trees that grew from the berries that Mrs. Nellie R. Stevens planted thrived in her Oxford, Maryland garden. In 1952, the plants were almost removed from the garden to make room for a newer garden design, but when a visit from a local holly expert and experts from the American Holly Society couldn't identify these beautiful hollies, the family of Nellie R. Stevens decided to preserve the plants. As the holly was born in Maryland, it is wonderful that it can thrive in all the counties in Maryland, being cold tolerant from USDA zones 6-9 and thriving in slightly acidic, organically rich, moist but well drained soils in full sun to part shade. *Ilex* 'Nellie R. Stevens' can actually bear fruit without the company of *Ilex* 'Edward J. Stevens', but it will have a better fruit set with either his company or the company of any *Ilex cornuta* males. The plants can grow 15- 25 feet tall and spread to about 12 feet wide with glossy green leaves that can grow as long as 4 inches with 2-3 spines on each side. The tree grows into a broad pyramid which is suitable as a specimen, a privacy screen or trimmed as a lovely hedge by pruning in the winter. They have been planted as foundation plants but require constant pruning to keep them in shape. In April, the small green to white flowers emerge with a light fragrance and then mature to create bright red berry-like fruit that can grow up to 1/3 of an inch large. The fruit is formed along the branches in large clusters which last through the winter into the early spring. Pests can include scale insects, spider mites, whitefly and holly leaf miner, and diseases could include leaf spot, leaf rot, and powdery mildew. Leaf scorch can occur during the winter months if the ground is frozen and high winds pull the water out of the leaves, and chlorosis or leaf yellowing can occur if the plants are in high alkaline soils.



Ilex 'Nellie R. Stevens' was found growing in a garden in Oxford, Maryland and grows well throughout the state
Photos: Ginny Rosenkranz, UME

Pest Predictive Calendar “Predictions”

(Nancy Harding and Paula Shrewsbury, UMD)

In the Maryland area, the accumulated growing degree days (DD) this week range from about **15 DD** (Aberdeen) to **67 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.

- Eastern tent caterpillar (egg hatch) (**86 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 March 24)

Abingdon (C1620)	47
Aberdeen (KAPG)	15
Annapolis Naval Academy (KNAK)	35
Baltimore, MD (KBWI)	42
Bowie, MD	49
College Park (KCGS)	31
Dulles Airport (KIAD)	43
Ft. Belvoir, VA (KDA)	41
Frederick (KFDK)	38
Gaithersburg (KGAI)	44
Greater Cumberland Reg (KCBE)	30
Martinsburg, WV (KMRB)	24
Natl Arboretum/Reagan Natl (KDCA)	67
Salisbury/Ocean City (KSBY)	50
St. Mary’s City (Patuxent NRB KNHK)	47
Westminster (KDMW)	55

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

Phenology

PLANT	PLANT STAGE (Bud with color, First bloom, Full bloom, First leaf)	LOCATION
Bloodroot (<i>Sanguinaria canadensis</i>)	First bloom	Clarksville (March 21)
Forsythia	First bloom	Columbia (March 22)
Purple deadnettle	First bloom	Ellicott City (March 9)
Spicebush (<i>Lindera benzoin</i>)	Bud	Ellicott City (March 26)
Spring beauty (<i>Claytonia virginica</i>)	First bloom	Clarksville (March 21)

Conferences

CDC guidelines for Covid-19 may cause changes to the programs below.

Cicada Program

March 31, 2021 at 3 p.m.

There will be a Zoom program on cicadas geared for foresters, but is open to anyone. Stamton Gill will be presenting. We are coordinating with Maryland DNR on this session. Session will be recorded.

The registration link is <https://umd.zoom.us/meeting/register/tJvcu-ggDorHdVt8-YnTLqOr4Os1AGzEfpN>.

Maryland Arborist Association Pesticide Recertification Program

(limited in-person and on-line program)

May 11, 2021

Registration opens on March 30.

Location: Turf Valley, Ellicott City, MD

More information is available at http://www.mdarborist.com/calendar_day.asp?date=5/11/2021&event=315

Pest Management Recertification Program

(limited in-person program)

June 3, 2021

Location: Carroll Community College, Westminster, MD

Details will be available at a later date

Greenhouse Program

July 8, 2021

(limited in-person program)

Location: Catocin Mountain Growers, Keymar, MD

Details will be available at a later date

New IPMnet Website

University of Maryland Extension is making changes to its website so the look of the IPMnet site will be different. URLs will be new, too. We will post the new link in a future report. The change is scheduled to take place in early April.

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Thank you to the Maryland Arborist Association, the Landscape Contractors Association of MD, D.C. and VA, the Maryland Nursery, Landscape, and Greenhouse Association, Professional Grounds Management Society, and FALCAN for your financial support in making these weekly reports possible.

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

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USDA Press Release: Pandemic Assistance for Producers

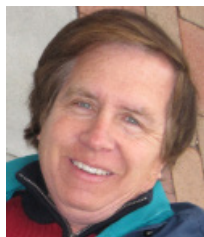
After Identifying Gaps in Previous Aid, USDA Announces ‘Pandemic Assistance for Producers’ to Distribute Resources More Equitably: USDA Reopens Program Sign-Up to a Larger Share of Producers with Plans to Expand Outreach and New Programming

Washington, D.C., March 24, 2021 – Agriculture Secretary Tom Vilsack announced today that USDA is establishing new programs and efforts to bring financial assistance to farmers, ranchers and producers who felt the impact of COVID-19 market disruptions. The new initiative—USDA Pandemic Assistance for

Producers—will reach a broader set of producers than in previous COVID-19 aid programs. USDA is dedicating at least \$6 billion toward the new programs. The Department will also develop rules for new programs that will put a greater emphasis on outreach to small and socially disadvantaged producers, specialty crop and organic producers, timber harvesters, as well as provide support for the food supply chain and producers of renewable fuel, among others. Existing programs like the Coronavirus Food Assistance Program (CFAP)

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will fall within the new initiative and, where statutory



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assistance, please read the full press release at <https://www.usda.gov/media/press-releases/2021/03/24/after-identifying-gaps-previous-aid-usda-announces-pandemic>

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