

Commercial Horticulture

March 20, 2020

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IPMnet
Integrated Pest
Management for
Commercial Horticulture
extension.umd.edu/ipm

If you work for a commercial horticultural business in the area, you can report insect, disease, weed or cultural plant problems (**include location and insect stage**) found in the landscape or nursery to sklick@umd.edu

Coordinator Weekly IPM Report:

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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)

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Gymnosporangium Rust Galls Developing Now

By: Karen Rane

It's spring, and the recent warm weather has stimulated the development of Gymnosporangium rust galls on junipers.

Cedar apple rust galls are the easiest to spot – they are often ½ to 1 inch or more in diameter. This photo was taken on 3/18 and shows small tendrils beginning to form. These tendrils will enlarge into orange, gelatinous masses during wet weather, and produce spores that infect foliage susceptible apples and crabapples. There is still time to prune out

and destroy these juniper galls before the spores are released. The best management for these rust diseases is to choose resistant cultivars of apples and crabapples. More photos and information on this disease can be found at this link from the UMD Home and Garden Information Center: <https://extension.umd.edu/hgic/topics/rust-diseases-trees>



Gymnosporangium rust gall on juniper (March 18)
Photo: David Clement, UME

Getting Kick Started in 2020

By: Stanton Gill

It is always an exciting time of year in early spring when everything has so much promise. After the last 2 years of record rains in the spring, it would be wonderful to have a normal spring. Then again, “normal” may be something we will not see as the weather becomes more violent with its climate swings. On February 7, 2020, we experienced tornadoes that ripped through Frederick, Howard, Carroll and Montgomery Counties. These storms were followed by a short period of warm weather in early February. At least the beginning of February was exciting with thunderstorms and 48 mph winds. Anyhow, it is good to be back online and we are ready to see how the season unfolds.

Mild Winter – Lack of Leaf Abscission

By: Stanton Gill

You may have seen this situation with some of your customers’ trees. Bill Miller sent an email stating: “Over the last several years, I’ve begun noticing variability in leaf abscission with my several *Acer palmatum*. Leaves seem to be persisting.”

Here is my response:

I am seeing this situation on my seedling-grown Japanese maples this year, and I saw it several years ago when we had a warm fall and warmer than normal winter. I rarely see it on grafted species of Japanese red maple such as ‘Dissectum’. It does have something to do with the cold or lack of it. The temperatures were 7 °F above normal temperatures in January of 2020 which may have kept them from abscising. The last time I saw leaves remain on trees this long, the trees finally defoliated just before spring. The trees continue to be healthy, so I would not be too concerned with your trees retaining the foliage.



Leaves were persisting on *Acer palmatum* as of February 6, 2020 in Bethesda

Photo: Bill Miller, The Azalea Works

Japanese Stiltgrass

By: Stanton Gill

At the February 27 Innovative Lawn Care Conference, one of the popular questions was “what do we do about stiltgrass?” The options for nonchemical control are very limited. We asked Jeff Derr, Weed Specialist and Professor with a Virginia Tech Experiment Station, to comment.

Here is his response: “Japanese stiltgrass can be controlled by the preemergence crabgrass herbicides - Barricade, pendimethalin, etc. if applied prior to germination. Stiltgrass germinates before crabgrass so it needs to go on early. A good postemergence herbicide for stiltgrass control in cool-season turf and broadleaf ornamentals is Acclaim Extra. In broadleaf ornamentals, Fusilade/Ornamec, Segment, and Envoy are also options.”

Because of the warm weather, stiltgrass has germinated in a lot of areas.

Letter From Joe Bartenfelder, Maryland Secretary of Agriculture

March 19, 2020

Dear Stakeholder,

As the State of Maryland continues its unprecedented response to COVID-19, the Maryland Department of Agriculture is emphasizing the need for businesses involved in the state's food supply chain to continue production. As a key stakeholder, we are asking for your assistance in delivering this message to your customers, employees and related supply chain partners.

Reliable access to food is a human right and it is critical that our food supply chain maintain - and even be prepared to expand - operations throughout this state of emergency. Any business involved in food distribution, production, processing, sales and supply will be considered essential, including, but not limited to:

- Agricultural equipment sales and service
- Agricultural supply businesses
- Animal feed supply and distribution
- Farms
- Farmers markets and food banks
- Feed mills
- Food and meat processors and manufacturers, including bakeries, etc.
- Food safety laboratories and inspectors
- Greenhouses and nurseries
- Grocery delivery services
- Pet food manufacturers and distributors
- Retailers, including grocery stores
- Seafood industry (crabbers, watermen, processors, etc.)
- Transportation, distribution and suppliers
- Veterinary services and supplies

As essential businesses, we are asking you to remain open and operational - normally and safely - until or unless directed otherwise. Develop procedures for safe operation of your facility or farm and post those procedures for the benefit of your employees and the broader public. To clarify, the governor's current order to suspend operations applies only to bars, dine-in restaurants and other non-essential retail locations. All other businesses, especially food-related businesses, are encouraged to continue operating within the parameters and protocols (large gatherings, social distancing, etc.) recommended by the U.S. Centers for Disease Control and Prevention and Maryland Department of Health.

We understand that there are a number of challenges facing businesses right now. Please keep the Maryland Department of Agriculture informed of any regulatory/statutory challenge or hurdle that may impede production, processing or sales so we can address it accordingly and promptly.

On behalf of the Hogan-Rutherford administration, we appreciate your support and patience as we continue to navigate this constantly-evolving situation with as few disruptions to food production and processing. Thank you for all that you do to ensure Marylanders continue to have access to a safe, reliable food source.

We will post any updates on Facebook, Twitter and the MDA website. If you have specific questions, please contact news.mda@maryland.gov.

White Pine Weevil

By: Stanton Gill

A nursery grower reminded me to add something about white pine weevil which overwinters as adults and is active in mid to late March in Maryland. The adult white pine weevil overwinters in litter on the ground or in old tree pine stumps in the nursery. With the mild winter and early spring weather, they should be active in central Maryland in late March. The adults begin feeding on terminal growth of conifers. They tend to feed on twigs 7-10" below dormant terminal buds. Females deposit eggs in the bark of the terminal growth, which hatch in 7-10 days. The developing larvae feed in the leader until they reach maturity in mid-Summer. Pupation occurs in larval chambers made of wood chips. Adults emerge in 10-15 days and continue to feed on old and new growth. The white pine weevil often kills 2-3 years of terminal growth. For control, apply products that contain bifenthrin or permethrin.



Spruce Spider Mites

By: Stanton Gill

Heather Zindash, IPM Scout, sent in a picture of spruce spider mite on March 11. It is close to the hatching stage, and you can see the body formed through the egg cover. Spruce spider mite is one of the first plant damaging mites to hatch in spring. Examine foliage of spruce, Leyland cypress, hemlock, Alberta spruce, and other species of spruces and junipers.

Control: A 3 – 4% rate of horticultural oil is a good material to use on all but blue spruce. Horticultural oil dissolves the wax on the blue spruce and changes them from blue to green foliage plants.



Spruce spider mite activity starts early in the season
Photo: Heather Zindash, IPM Scout

Peach Leaf Curl

Now is the time to apply fixed coppers to peaches to prevent peach leaf curl. An article by Kari Peter, Penn State Extension, is available at <https://extension.psu.edu/disease-of-the-month-peach-leaf-curl>.

Penn State Coronavirus Best Management Practices for the Green Industry

<https://extension.psu.edu/coronavirus-best-management-practices-for-the-green-industry>

Indian Wax Scale

By: Stanton Gill

The mild winter allowed Indian wax scale to survive the winter in good health with little winter death. Christa Carignan, UME-HGIC, sent along pictures of Indian wax scale found in Rockville. You find this large white scale on holly, Japanese maple, winterberry, pyracantha, and camellia.

Control: Systemic insecticides applied to the soil should give good control. If you plan to use insect growth regulators such as distance or Talus, wait until crawlers are active in mid-June to July.



Indian wax scale often survives warm winters
Photo: Christa Carignan, UME-HGIC

Mining Bees Early Activity

By: Stanton Gill

Paul Wolfe, Integrated Plant Care Company, called on March 10 to report a lot of flight activity of mining bees in Rockville. He said his customer was reporting hundreds of bees buzzing about the hillside in this Rockville landscape. Paul reassured them that they should leave these beneficial, native pollinators alone. The customer was concerned that their children would be stung, but mining bees do not defend their nests and most are not able to sting because they cannot penetrate human skin. There are several genera of mining bees in Maryland and most look like furry smaller versions of a honey bee. The females make individual nests in the ground and prefer hillsides and lighter textured soils. They are active for a couple of months in spring, then you see no additional activity later in the season. This early March activity of the mining bees is due to the mild winter weather and early pre-spring weather we experienced in early March.

New Proposed EPA Rules on Protecting Pollinators

In January 2020, EPA released [proposed interim decisions for acetamiprid, clothianidin, dinotefuran, imidacloprid, and thiamethoxam](#). These chemicals, collectively known as neonicotinoids, are a group of insecticides used on a wide variety of crops, turf, ornamentals, pets (for flea treatment), and other residential and commercial indoor and outdoor uses. In the proposed interim decisions, EPA is proposing:

- management measures to help keep pesticides on the intended target and reduce the amount used on crops associated with potential ecological risks;
- requiring the use of additional personal protective equipment to address potential occupational risks;
- restrictions on when pesticides can be applied to blooming crops in order to limit exposure to bees;
- language on the label that advises homeowners not to use neonicotinoid products; and
- cancelling spray uses of imidacloprid on residential turf under the Food Quality Protection Act (FQPA) due to health concerns.

Additionally, the agency is working with industry on developing and implementing stewardship and best management practices.

Upon publication in the Federal Register, EPA will accept comments on the decisions in the following dockets for 60 days:

[Acetamiprid EPA-HQ-OPP-2012-0329](#)

[Clothianidin EPA-HQ-OPP-2011-0865](#)

[Dinotefuran EPA-HQ-OPP-2011-0920](#)

[Imidacloprid EPA-HQ-OPP-2008-0844](#)

[Thiamethoxam EPA-HQ-OPP-2011-0581](#)

[Read the proposed interim decisions for the neonicotinoids.](#)

<https://www.epa.gov/pollinator-protection/epa-actions-protect-pollinators>

Stem Sawfly

By: Stanton Gill

We had an interesting sample come into the CMREC lab this winter. It was a red maple from a nursery. The tree had stems with the center growth being hollowed out. The overwintering insects were stem sawflies. One of the common names is maple petiole borer (*Caulocampus acericaulis*) which is a non-stinging wasp. Back in 2002 and 2003, we had a nursery in central Maryland that plants out two cultivars of red maples and 60% of the newly planted trees had tip growth wilting by June. This damage was from activity of the maple stem borers. We really have not seen much activity since this period of time in nurseries.

Stem sawflies (several species) bore into tender shoots of trees and shrubs, occasionally inflicting serious damage in localized infestations; however, injury is seldom widespread. Vulnerable woody plants include blackberry, currant, raspberry, and roses, as well as some oak species, poplar, viburnum, and willows.

Pruning out the tip growth is the easiest and probably best way to deal with this insect and its damage. The tip dieback is usually just a couple of inches long.



Apple Trees

By: Stanton Gill

Many of you are growing apple trees in the nursery and landscapers are installing them in increasing number in home landscapes. Since most homeowners will half heartily treat for insects and diseases, it would be best to select apple varieties that have the fewest problems. Cedar apple rust, fireblight, powdery mildew and apple scab are four of the biggest disease inflicting damage to apples. These are not all of the diseases that can hit apples but they certainly are the “big four”. Unfortunately, some of the disease resistant apples that are sold in the industry really don’t have much going on in the taste category. Over the years, I have had a chance to try out most of the varieties in my orchard. We presently have over 94 different cultivars growing. The following are some that I suggest that have good disease resistance here in Maryland and taste good.

Williams Pride. Interesting apple that does not receive a lot of publicity. This apple ripens in September and is crisp, juicy and fairly good flavor. I have not seen fireblight hit this variety even in the bad fireblight seasons of 2017 and 2018. It is very resistant to apple scab, cedar apple rust, and powdery mildew. I would use this cultivar on an M-7 understock.

Redlove. This is an interesting apple from Switzerland. I was not sure how well it would perform in Maryland but so far it has done well. It has shown fairly good resistant to scab, cedar apple rust and powdery mildew. The interesting thing with this apple is the flesh is red white a white area in the carpal area surrounding the seeds. Good flavor and good for ciders. We made delicious applesauce with this one.

Goldrush. The apple does not ripen until late October to early November but it is worth waiting for. It has a real crunch to the apple with a tart then sweet flavor that is different from the rest. It also stored for 2 – 3 months after harvest if kept at 32- 40 °F. It is a gold colored apple that is medium size. This is one tough apple when it comes to disease resistance. I rarely see any disease problems with this cultivar.

Arkansas Black Twig. This is a “back to the future” apple. It was found in Arkansas back in the 1880s as genetic sport off a Winesap apple and was very popular for 50 years then fell pretty much off the map. It is an apple that is almost black or dark purple in color with white, alabaster flesh. It is one very tart tasting apple, but people who love tart fall in love with its flavor. I rarely see any disease problems with this apple cultivar and it is reported to be very resistant to codling moth damage. I must tell you it is not an overly productive apple tree but this is perfect for most homeowners who are happy with a less than abundant crop coming in.

Beneficial of the Week

By: Paula Shrewsbury

Solitary bees are buzzing and busy!

Since many pollinator species are in decline it is important to conserve these beneficial insects. Therefore, I will be discussing various pollinators throughout the season. Today I would like to spend some time on solitary bees, in particular the mason bees since they are active NOW. Solitary bees differ from their cousins the European honeybee that maintain perennial colonies that continue from year to year, and bumble bees that have annual colonies which a queen restarts every spring. Honeybees and bumble bees also have division of labor within the colony (ex. foragers, soldiers, brood care, etc.). With solitary bee species each individual female maintains her own individual nest where she feeds and raises her own brood (young).

This past Monday at my house (Howard County) [mason bees \(family Megachilidae\) began emerging from their overwintering galleries!](#) This historically happens around St. Patrick’s Day give or take a week. In general, mason bees are early spring pollinators but a few species emerge in late spring or early summer. Mason bees nest in hollow stems of plants, reeds or galleries in wood left behind by wood boring insects. Mason bees get their name because of their habit of making brood compartments in their galleries that are separated by mud.

Mason bees are well known for the pollination benefits they provide, especially of early blooming plants. It is estimated that just 250-300 mason bees can pollinate an acre of apples or cherries. Mason bee males emerge first and females emerge a few days later. This phenomenon, called protandry, is relatively common in the world of insects. There is a lot of competition to get among males to find a mate and males that emerge early in a season are more likely to find and hook up with females. Once a male and female mate, the male bee then hangs out on the female’s back for a bit and fights off other males that would also like to mate with his partner. This “[guarding behavior](#)” ensures sperm from the original guarding male are used by the female. Mated female mason bees spend many hours and days gathering pollen and nectar from which they create pollen cakes or balls. They fill hollow plant stems or wooden galleries with these pollen cakes. After [collecting pollen from plants, the female returns to her nest gallery](#) and enters the nest tube head first, deposits the pollen cake (this may take several trips to get enough pollen for one cake), exits the tube, turns around and enters the tube abdomen first so her ovipositor can reach the pollen cake. She then oviposits (lays) an egg onto the pollen cake

which is followed by her sealing that section (makes a mud wall) of the tube or gallery with mud that she collects. The female repeats this process until the tube contains several pollen cake – egg compartments and is filled. She plugs the entrance with a mud wall and may then search out another nesting site. Eggs that are destined to be females are laid in the back of the tube, and male eggs toward the front (remember males emerge first). Mason bee adults are active about 4 weeks and the females will fill as many nests (tubes) as she can in that time. The eggs hatch into [bee larvae that consume the pollen cake](#) as they develop and grow during summer and fall. They complete their development (pupa and adult stages) during fall, settle down for winter, and are ready to emerge just in time for the return of spring. Mason bees do not produce honey, are not aggressive and do not sting. I stand observing the nesting sites in my carport for long periods of time with 100's of bees buzzing and busy around me and am always entertained by these beauties, and yet to be harmed.

Mason bees provide valuable ecosystem services by pollinating a variety of native and non-native flowering plants, many of which are fruits that we consume or flowers of plants in natural and managed landscapes that provide resources and habitat for animals at other trophic levels. However, habitat fragmentation and destruction is one of the factors that lead to decline of pollinators. For those of you who would like to become active in the conservation of mason bees you can provide solitary bee nesting habitats. At my house I have purchased commercially available “bee tubes” and drilled holes into firewood (see the image). Not only can you enhance ecosystem services of pollination by providing habitat, but you create a great learning environment for children and adults. I highly suggest you try buying or making habitat for these beneficial, educational and entertaining insects. There are many resources on line that can inform you of best practices for creating habitat and conserving these beneficial insects. Do a web search for mason bees or bee tubes. NOW is the time to set up nesting sites! In addition, many managed landscapes do not have an abundance of early spring blooming plants. If you are adding plants to your gardens identify and select the very early (and very late) blooming plants. For more information on plant species to use for conserving beneficial insects see the [“Beneficial of the Week” article \(pg. 6\) on April 6, 2018](#).



Male mason bees emerging from galleries in wood where they overwintered. The bee chews through the mud seal that the mother bee closed the gallery with last year.

Photo: P. Shrewsbury, UMD



Bee tubes and galleries drilled in fire wood (~1/4 – 5/16” in diameter and 4-8” deep) provide suitable nesting sites for various solitary bees. Different diameter holes attract different species of mason bees.

Photo: P. Shrewsbury, UMD

“Bee” sure to click on the hyperlinks in this story to see interesting videos of the various mason bee behaviors. Thanks to Mike Raupp (UMD) for his YouTubes.

Weed of the Week

By: Chuck Schuster

The start of spring is here. Officially at least, as most that work with plants have noted that everything is ahead of schedule. A mild winter and a warm soil are bringing many things into bloom currently. In travels prior to the desire to stay close, I found henbit and chickweed in full bloom in Princess Anne MD on March 3 this year. Yes that is an extreme, but is it really?

With soil temperatures warming up as much as they have, a concern needs to be noted for annual weed germination. At a soil temperature low of 50 °F for three days, Japanese stiltgrass gets started. With no cultural control being effective, one needs to be ahead of this one as much as possible. Japanese stiltgrass does respond very well to pre-emergent products. Barricade (Prodiamine) has been evaluated through good research, being applied in December, March and May. The highest percentage of control, at 86%, was achieved with a single treatment in March (if you have not started to apply this product it may be getting too late). All pre-emergent products require moisture to activate. Acclaim Extra has been used successfully as a post emergent 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, along with having adequate soil moisture to have the plant actively growing. Prizefighter (Ammonium Nonanoate) has been tested and is effective in spot spraying of landscape beds, but may require more than one application. Glyphosate products may be used for spot spraying in landscape beds. Remember to use caution as many post emergent products can damage ornamentals that come in contact with them.

Japanese stiltgrass is invasive, even if it is not on the official list. This plant will overtake a turf or landscape site easily if not managed properly. Again, there are no real cultural controls for this weed.

With soil temperature lows of 55 °F for three days, one will find crabgrass to start the season. Crabgrass does have the ability to be managed with cultural controls that should always be part of a good IPM program. These controls include mowing height (mow tall, utilizing the 3 to 3.5 inch height). Keep the soil covered which means building a strong turf with fertility management. Overseed bare areas to keep the ultraviolet light from reaching the soil to assist in germination of the weed seed.

The list of active weeds is long and in fact colorful, while they are pretty to look at they often detract from the site in general.



Japanese stiltgrass is an invasive weed that is difficult to control. Note the distinctive white midvein as shown in the photo on the right.
Photos: Chuck Schuster, Retired, UME

Plant of the Week

By: Ginny Rosenkranz

Pieris japonica ‘Dorothy Wyckoff’ is a small evergreen tree or large shrub that prefers to grow in part shade to full sun and needs slightly acidic, organically rich, moist but well drained soils. Plants can grow 9-12 feet tall and spread 6-8 feet, but P. ‘Dorothy Wyckoff’ is much more compact, growing only 5 feet tall and wide. During the winter months the glossy dark green leaves provide color and texture, but in spring the new foliage that emerges is often very colorful. Most cultivars including ‘Dorothy Wyckoff’ have new foliage that starts out as a dark bronze color, offering the perfect backdrop for the flower buds which start out dark red. The dark red buds mature to light pink fragrant flowers which are delicately bell shaped and are gathered in drooping clusters of 6 inches long creating a cascading waterfall look. These Lily-of-the-valley look alike flowers can last 2 – 3 weeks before maturing to round seed capsule which should be pruned off. Insect pests include lace bug, scale, two spotted mites, nematodes and diseases include leaf spots, Phytophthora dieback.



Pieris japonica ‘Dorothy Wyckoff’ has new foliage that starts out as dark bronze color
Photo: Ginny Rosenkranz, UME

Degree Days (as of March 18)

Abingdon (C1620)	28
Annapolis Naval Academy (KNAK)	53
Baltimore, MD (KBWI)	71
Bowie, MD	90
College Park (KCGS)	58
Dulles Airport (KIAD)	77
Frederick (KFDK)	59
Ft. Belvoir, VA (KDA)	85
Gaithersburg (KGAI)	63
Greater Cumberland Reg (KCBE)	40
Martinsburg, WV (KMRB)	51
Natl Arboretum/Reagan Natl (KDCA)	96
Salisbury/Ocean City (KSBY)	83
St. Mary’s City (Patuxent NRB KNHK)	100
Westminster (KDMW)	77

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
<i>Claytonia virginiana</i> (spring beauty)	First bloom	Clarksville (March 16)
<i>Lindera benzoin</i> (spicebush)	First bloom	Clarksville (March 17)
<i>Pyrus calleryana</i> (callery pears)	First bloom	Ellicott City (March 9)
<i>Sanguinaria canadensis</i> (bloodroot)	Bud	Clarksville (March 17)

UMD Plant Diagnostic Laboratory COVID-19 Announcement (3/18/2020)

Due to the University of Maryland College Park response to COVID-19, the UMD Plant Diagnostic Laboratory is not able to receive plant samples at this time. Buildings on campus are locked, and packages sent through carriers such as UPS, FedEx and USPS will not be delivered to the lab.

If you need plant diagnostic services, please **DO NOT** send samples to the clinic. Contact me via email (rane@umd.edu) with photos of the plants in question, and I will do my best to answer your concerns. Photos for diagnosis should include at least one overall picture of the site or crop, as well as close-ups of the plants and symptoms in question. Please make sure the photos are in focus for the best chance of diagnosing plant problems. Include a description of the problem, as well as any spray applications made in the past 4 weeks.

We will contact you if there is a change in this procedure. Thank you for your patience as we deal with this unprecedented situation.

-Karen Rane, Director, UMD Plant Diagnostic Laboratory

CONFERENCES

June 3, 2020

Eastern Shore Pesticide Recertification Program
Location: Chesapeake College, Wye Mills, MD

Save the Dates for the IPM Scouts' 4-Day Training Program:

June 2 and 4, 2020 at the Gary J Arthur Community Center, Glenwood, MD
June 9, 2020 at Ruppert Nursery, Laytonsville, MD
June 10, 2020 at Cavano's Perennials, Kingsville, MD

June 20, 2020 (Saturday)

Maryland Christmas Tree Association Summer Meeting
Cawley Family Farm, Denton, MD
For info contact Joncie Underwood
Maryland CTA@outlook.com

Regarding UMD Extension activities, we do not know at this time if the Coronavirus Covid-19 will impact these programs scheduled for later in the year.

Links to Conference Schedules and Registration Details

<https://extension.umd.edu/ipm/conferences>

2020 MDA Pesticide Container Recycling Program

The brochure for the pesticide container recycling program is available at:

<https://mda.maryland.gov/plants-pests/Documents/2020-Pesticide-Container-Recycling-Schedule.pdf>

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