

Plant Health Care Report

Scouting Report of The Morton Arboretum

Aug 21, 2020

Issue 2020.11

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. You'll also find a table of accumulated growing degree days (GDD) throughout Illinois, precipitation, and plant phenology indicators to help predict pest emergence. Due to the current COVID-19 situation, we will not be scouting on the Arboretum grounds at this time. We will be including information about pest and disease problems based on questions emailed to The Arboretum's Plant Clinic. We are working remotely, but still able to answer questions via email at plantclinic@mortonarb.org

This is the last issue for 2020. The 2020 index will be published in early September.

To be added to the email list, please contact me at syiesla@mortonarb.org. Comments or concerns regarding PHCR should be sent to the same email.

Quick View

What indicator plant is in bloom in DuPage County?

Seven Sons Flower (*Heptacodium miconioides*) will be flowering soon (Figure 1)

Accumulated Growing Degree Days (Base 50): 2279 (as of Aug 20)

Accumulated Growing Degree Days (Base 30): 5349 (as of Aug 20)

Insects/other pests

- Viburnum leaf beetle update
- Home invaders
- Brown marmorated stink bug
- Sawflies
- Galls, we saved the best for last

Diseases

- Septoria leaf spot on dogwood

Miscellaneous

- Watering into autumn
- Seasonal needle drop



Figure 1 Seven Sons Flower

A special thanks in this oddest of seasons.

I want to thank our regular scouts, as well as the many Plant Clinic volunteers who let me know what pests they were seeing in their neighborhoods. Writing the Plant Health Care Report in this pandemic year has been very challenging, and their help has been amazing.

And thanks to all of you who have continued to read the newsletter. Some of you emailed to say that you were still finding value in it and that it was nice to have something still go on as 'normal'. I am sure we missed a few pests, but hopefully none of the really bad ones that have been sitting on the horizon waiting to stop by.

Degree Days and Weather Information

We are once again offering Lisle readings right above the Arboretum readings. The spread between these two sites shows that temperatures can vary over a short distance, which means growing degree days can be quite variable as well.

As of Aug 20, we have 2279 base-50 growing degree days (GDD). The historical average (1937-2019) for this date is 2173 GDD₅₀. Since January 1, we have had 28.63 inches of precipitation. Historical average (1937-2019) for precipitation Jan-Aug is 29.7 inches.

| Location | B ₅₀ Growing Degree Days Through Aug 20, 2020 |
|--------------------------|--|
| Carbondale, IL* | 2896 |
| Champaign, IL* | 2469 |
| Glencoe* | 1857 |
| Chicago Botanic Garden** | 2289 |
| Chicago O'Hare* | 2349 |
| Kankakee, IL* | 2299 |
| Lisle, IL* | 2387 |
| The Morton Arboretum | 2279 |
| Quincy, IL* | 2613 |
| Rockford, IL* | 2192 |
| Springfield, IL* | 2546 |
| Waukegan, IL* (60087) | 2070 |
| Waukegan, IL* (60085) | 2152 |

*We obtain most of our degree day information from the GDD Tracker from Michigan State University web site. For additional locations and daily degree days, go to <http://www.gddtracker.net/>

**Thank you to Chris Henning, Chicago Botanic Garden, for supplying us with this information.

How serious is it?

This year, articles will continue to be marked to indicate the severity of the problem. Problems that can definitely compromise the health of the plant will be marked “serious”. Problems that have the potential to be serious and which may warrant chemical control measures will be marked “potentially serious”. Problems that are seldom serious enough for pesticide treatment will be marked “minor”. Articles that discuss a problem that is seen now, but would be treated with a pesticide at a later date, will be marked “treat later”. Since we will cover weeds from time to time, we’ll make some categories for them as well. “Aggressive” will be used for weeds that spread quickly and become a problem and “dangerous” for weeds that might pose a risk to humans.

Pest Updates: Insects

Viburnum leaf beetle update (serious)

Viburnum leaf beetle egg-laying sites are now visible. The eggs will hatch into larvae next spring. Viburnum leaf beetles lay their eggs in the tips of viburnum twigs (usually on the underside of the twig). If we clip those twigs off in fall and winter and destroy them, we can minimize populations for next spring. The egg-laying damage usually occurs in rows. The eggs are laid in holes chewed by the adult. The holes are then covered by a cap of chewed bark (fig. 2). These caps are fairly easy to see as they are a different color than the stem, but they will be SMALL since they are out at the very tips of the stems.



Figure 2 Egg-laying sites

While the thought of cutting out egg-infested twigs may not be appealing, getting rid of an insect at the egg stage can be very effective. Food for thought: the fewer that hatch, the fewer we have to try to kill next spring and the less damage we will see on our viburnums. You might say “But I have 20 arrowwood viburnums on my property!” More food for thought: we should probably stop planting 20 of anything. With all the pests on the horizon, it pays to diversify as we install new plants. Even with a number of shrubs, we can still reduce the population for next season. The eggs are there now. That gives us the next 7 months to find and destroy those twigs. Several Plant Clinic volunteers who clipped twig tips last fall and winter reported few to no beetles this past spring. So, this does work!

Home invaders (minor)

This is our last full issue for the season, so let's take a moment to look at some problems that might arise in fall. When the weather turns cold, some pests will become home invaders. Boxelder bugs (*Boisea trivittata*) are usually the number one complaint for home invaders (although the brown marmorated stink bug, see article below, is vying for the title). The Plant Clinic has not yet received any reports of this nuisance pest, but it is almost certain to show up as the weather cools down. These insects feed on sap of seeds, flowers, and leaves of boxelders (*Acer negundo*). Their feeding causes little damage to the tree. They are considered to be a nuisance when large numbers of them appear in homes, especially in fall and spring. Nymphs are bright red when they first hatch, developing black wing pads over time. Adults are about ½ inch long, have three red or orange lines in back of their heads, and have black wings with red lines, and a red abdomen (fig. 3). Boxelder bugs overwinter as adults in protected sites. Since they consider your house to be a protected site, if you have cracks in your foundation or around your windows, they will enter your house through those cracks in fall. They do no harm in the house but are very annoying.



Figure 3 Boxelder bugs; nymph (upper) and adult (lower)

While boxelder bugs show up like clockwork every year, some home invaders are occasional guests. These include the multi-colored Asian lady beetle, the leaf-footed beetle and squash bugs. The multi-colored Asian lady beetles are beneficial insects that eat pests like aphids. In fall, they can become an annoyance when they enter the home, sometimes in large numbers. They are not only annoying, they can bite! They can be yellow, red or orange in color and may have no spots or as many as 19. The front of the body is cream-colored with a black 'M' (perhaps a monogram for 'multi-colored'?). Go to <http://bugguide.net/index.php?q=search&keys=Harmonia&search=Search> for photos.

Leaf-footed bugs and squash bugs often enter homes one at a time and so are easy to manage. Go to <http://bugguide.net/node/view/16073/bgimage> and <http://bugguide.net/index.php?q=search&keys=squash+bug&search=Search>

Management: Do not use insecticides inside the home. Caulk around doors and windows to minimize entry by the insects. Keep screens in good repair. Insects that do enter the home can be removed with a vacuum or manually. Do not crush boxelder bugs or ladybugs as they can leave a stain. The leaf-footed bug is related to stink bugs and will make a stink

when handled. Squash bugs can make a stink and a stain when crushed. If boxelder bugs are accumulating on the outside of the house, they can be doused with soapy water.

Good website: <http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/boxelder-bugs>

Brown marmorated stink bug (minor indoors, potentially serious outdoors)

Speaking of home invaders: brown marmorated stink bugs (BMSB) are showing up more often now in the Chicago area. These insects overwinter in houses and become active again in spring. BMSB will feed on a variety of hosts including many fruit, vegetable and field crops, reducing yield on those crops. They have become a serious pest on crops in some states. There are other insects that resemble the BMSB, so check the websites listed below to see more pictures of this insect. The insect is similar in shape to other stink bugs (a somewhat 'shield-shaped' body), but the edge of the body has alternating black and white bands. The antennae will have light-colored bands on them. Overall, the body has a mottled appearance (fig. 4). When the weather cools off, adults will look to overwinter in homes, much like boxelder bugs.



Figure 4 Adult brown marmorated stink bug

Management: Managing this pest in the home is similar to managing boxelder bugs in the home. Caulk cracks, and keep screens in good repair. Physically remove the insects in the home with a vacuum cleaner. These are stink bugs, and they do create a stink when threatened so removal by hand could be tricky. After removal by vacuum, the vacuum cleaner may have a smell for a while. They can be knocked into a bucket of soapy water and left to drown.

Good websites with photos for identification:

<http://njaes.rutgers.edu/stinkbug/identify.asp>

<http://www.stopbmsb.org/stink-bug-basics/look-alike-insects/>

Sawflies (minor to potentially serious)

This has been a relatively quiet year for this pest. In the last couple of years, we saw a wide range of sawfly species on a wide range of plants. Sawflies are a large group of insects (literally hundreds of species).

These insects can be confusing. As adults, they often have a fly-like or wasp-like appearance and may go unnoticed. As larvae, they look like caterpillars but are not true caterpillars (this means that *Bacillus thuringiensis* var. *kurstaki* will NOT kill them). Sawfly larvae and caterpillars

do differ from one another. While each will have three pair of tiny legs near the head end of the body, they differ in the number of prolegs at the far end. Prolegs are outgrowths in the abdomen that the insect uses like legs. Caterpillars have five or fewer pair, while sawfly larvae have six or more pair. So, to be sure who you have, you'll need to get close and count those prolegs. Caterpillars have hooks, called crochets, on the bottom of their prolegs, so they can hold on tight. Sawfly larvae lack these hooks and can easily be dislodged from their host, so hitting them with a stream of water from the garden hose often gets rid of them. Sawfly larvae vary in color by species. Some are very colorful, while others are not. Some may be identified by spots, spines or other marks.

Sawfly larvae eat foliage, and the severity of their damage depends on the host, the size of the population and general health of the plant. High populations of sawfly can do a lot of damage and will add some stress to the host's life, but generally won't kill the host. Repeated defoliation year after year can lead to decline. Deciduous hosts can often tolerate more damage than evergreen hosts, and healthy plants can tolerate more defoliation than weak plants. We have not had many reports on heavy populations, but we do have one report of the dogwood sawfly in large numbers causing heavy defoliation on a dogwood.

Management: Because sawfly larvae don't have hooks on the prolegs, they can't hold on tight. That makes them easy to wash off with the garden hose or to pick by hand.

Good websites: <https://www.extension.umn.edu/garden/insects/find/sawflies/>
<https://bugguide.net/index.php?q=search&keys=dogwood+sawfly&search=Search>

Galls, we saved the best for last (minor)

We have seen a lot of galls this summer, and most of them are the ones we see year after year. This year, one of my favorites has shown up in the Plant Clinic email. It is the oak lobed gall (sometimes called the pine cone oak gall). It shows up on oaks and looks a bit like a pine cone (fig. 5). It is often 2 to 3 inches across and goes through some interesting color changes (pinks, reds and browns). This gall is caused by a wasp, *Andricus quercustrobilanus* (a cool name for a cool gall). The gall is composed of several



Figure 5 Oak lobed gall

wedge-shaped sections.

Another cool gall, new to me, was reported by one of our scouts and one of our Plant Clinic volunteers. It was found on two different species of *Rudbeckia*. The gall produced an amazing distortion of parts of the flowering head, in one case, to the point of rendering the flower nearly unrecognizable (figs. 6 and 7). It is caused by a midge, *Asphondylia rudbeckiaeconspicua*. Good websites:

<https://bugguide.net/node/view/569331/bgimage>

<https://bugguide.net/node/view/225386>



Figure 6 Gall on Rudbeckia (photo: L. Miranda)



Figure 7 Gall on Rudbeckia (photo: J. Lamb)

Pest Updates: Disease

***Septoria* leaf spot on dogwood (minor)**

Every year, about this time, *Septoria* leaf spot shows up on dogwood. The spots are present only on leaves. They have purple brown margins with pale centers (fig. 8), about 1/8 of an inch in diameter, and limited by veins. The spots get larger and more numerous as the growing season progresses, but the disease is actually of little consequence to the plant.

Management: Sanitary measures, such as collecting and discarding infected leaves as soon as they become apparent, should help reduce spread to new leaves and plants



Figure 8 *Septoria* leaf spot on dogwood

Miscellaneous

Watering into autumn

This has been another difficult year for watering. In May we had an over-abundance of rain. Then the tap turned off completely for many of us. June was very dry. July came roaring in with extreme heat and inadequate rainfall in many areas. As autumn comes on and the temperatures cool (we hope), there is often the assumption that the growing season is over and we can put the garden hose away. That really is not the case, even in a 'normal' year.

Should we be watering now? Because the rain has been so inconsistent, we really need to go out and observe the soil in our own yard. About a week ago, I had an inch and a half of rain that came over a period of hours. That is good, but this time not good enough. I am seeing deep cracks in the soil. So, one good rain does not get us off the hook. If the soil is dry, we should be watering, even if the soils were previously saturated. Watering is all about what the plant needs now.

With autumn, we will start to see plants go dormant, and perennials will even start to die back. The root systems of all plants are still quite active, and watering will help to keep them in good health. You can continue to water until the soil freezes. Pay special attention to evergreens. Since they retain their needles year-round, they can continue to lose water through those needles. Make sure that all evergreens go into winter fully hydrated. If you are planting bulbs like tulips or daffodils, they will also need to be watered. When bulbs are planted, they need to grow a root system in the fall. That can be difficult to do if the soil is too dry.

Other areas that would need special attention are newly seeded or sodded lawns and any newly planted trees, shrubs or perennials. All these plants will need a good supply of water to help them become established. Newly planted trees and shrubs do not need to be watered every day. That is good for puppies, but not for trees. Water as needed. Check the soil to see how dry it is. Remember that on a newly planted tree there will be a limited root ball. Apply the water to the root ball area.

We need to modify our watering practices based on the rainfall we get this autumn. Consider purchasing a rain gauge for your yard so you can accurately determine how much rain you are receiving. Storms can be deceiving. A heavy storm may give the impression that a lot of rain fell, but a rain gauge will let you know how much rain really fell. Ideally for most established plants we want to deliver an inch of water per week. If the rain provides half an inch, we need to provide the other half. Try to do the watering all at once so we get a nice deep watering. Sprinkling a little bit everyday does not give the plant the water it needs, and it promotes fungal diseases, not to mention what it does for your water bill.

Seasonal needle drop

Another phenomenon of fall is heading our way: seasonal needle drop (also known as normal needle drop). In autumn, many evergreens will drop older needles. This is a normal process. Needles on an evergreen live for a limited number of years. At the end of their lives, these needles will turn yellow or brown and eventually fall off. On some evergreens, such as white pine or arborvitae, this process can be very dramatic, making the evergreen look like it is dying. To determine if



Figure 9 Seasonal needle drop on white pine

your tree has a disease or is going through normal needle drop, check the location of the yellow or brown needles. Trees going through normal needle drop will have a fairly uniform brown or yellow appearance in the interior (fig. 9) of the tree since this is where the oldest needles are located. After a few weeks these needles will fall off, leaving the tree looking normal and healthy. Trees with a disease may have brown needles in various areas of the tree, depending on the disease, but the appearance will not be as uniform as that of needle drop. Diseased needles may eventually fall off, but the tree won't look healthy.

Good website:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/horticulture-care/seasonal-needle-drop>



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The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum and Professor at Joliet Junior College; Julie Janoski, Plant Clinic Manager, and Carol Belshaw, Arboretum Volunteer. The information

presented is believed to be accurate, but the authors provide no guarantee and will not be held liable for consequences of actions taken based on the information.

Thank you...I would like to thank the volunteers who will be scouting for us this season. They find most of the insects and diseases reported here. The Scouting Volunteers include: Maggie Burnitz, LeeAnn Cospier, Ingrid Giles, Loraine Miranda, and Emma Visee. Your hard work is appreciated. Thanks also to many of the Plant Clinic volunteers for sharing things they find in their own yards and neighborhoods.

Literature/website recommendations:

Indicator plants are chosen because of work done by Donald A. Orton, which is published in the book Coincide, The Orton System of Pest and Disease Management.

Additional information on growing degree days can be found at:

http://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects

http://extension.unh.edu/resources/files/Resource000986_Rep2328.pdf

This report is available as a PDF at The Morton Arboretum website at

<https://www.mortonarb.org/news-publication/plant-healthcare-report?tid=259>

For pest and disease questions, please contact the Plant Clinic. At this time due to the COVID-19 situation, the Plant Clinic building is closed. You can still contact the Plant Clinic via email at plantclinic@mortonarb.org. Emails will be answered during business hours Monday through Friday. Inquiries or comments about the PHCR should be directed to Sharon Yiesla at syiesla@mortonarb.org.

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