

Plant Health Care Report

Scouting Report of The Morton Arboretum



THE
CHAMPION
of TREES

September 9, 2022

Issue 2022.12

For comments regarding PHCR, or to subscribe to email alerts regarding posting of new issues, contact me at syiesla@mortonarb.org.

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. This year we resume our on-grounds scouting program. Plant Clinic staff and volunteers are back working on-site this year. Contact us via email at plantclinic@mortonarb.org or by phone at 630-719-2424 (Monday thru Friday, 10 am to 4 pm). The Plant Clinic is also open to walk-ins, but a [timed entry](#) for the Arboretum is required and non-members need to pay the entry fee.

Quick View

What indicator plant is in bloom at the Arboretum?

Seven Sons Flower (*Heptacodium miconioides*) is in full flower (fig 1)

Accumulated Growing Degree Days (Base 50): 2721 (as of Sept 8)

The season is winding down. There will be one more issue of the PHCR published on Sept 23.

To report spotted lanternfly in Illinois, send an email (with photos, if possible) to lanternfly@illinois.edu.

Insects

- Home invaders
- Brown marmorated stink bug

Miscellaneous

- Why are my oak leaves dropping?
- Oak problems are often complex

Diseases

- Your oak has oak wilt (or does it?)

Upcoming Education

- Upper Midwest Invasive Species Conference (Oct 25-27, 2022)



Figure 1 Seven sons flower

Soil temperatures around Illinois (from Illinois State Water Survey)

This information will be provided all season. For data from other reporting stations, go to <https://www.isws.illinois.edu/warm/soil/> (you will need to set up an account to access data.)

Max. Soil temps For 9/8/2022*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	78.6	93.7	95.6
4-inch, bare soil	78.5	87.6	87.6
4-inch, under sod	77.2	79.1	79.9
8-inch, under sod	73.2	76	77.3

* This is the maximum soil temperature recorded the day prior to publication of PHCR.

Degree Days (current and compared to past years)

As of Sept 8, we have 2721 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2021) for this date is 2567 GDD₅₀. The table below shows a comparison of GDD in different years. We are comparing the GDD reported in this issue with the GDD reported in 2021. We did not publish issues in September during 2014 and 2015 so there is no comparison to those years.

Location	GDD as of 9/8/22	GDD as of 9/9/21
Carbondale, IL*	3636	3446
Champaign, IL*	3061	3032
Chicago Botanic Garden**	No report	No report
Glencoe*	2264	2386
Chicago O'Hare*	2904	2984
Kankakee, IL*	2745	2855
Lisle, IL*	2924	2980
The Morton Arboretum	2721	2717.5 (9/8)
Quincy, IL*	3232	3205
Rockford, IL*	2582	2750
Springfield, IL*	3147	3142
Waukegan, IL* (60087)	2554	2718
Waukegan, IL (60085)	2684	2840

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

*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 <https://gddtracker.msu.edu/>

Seasonal precipitation

Seasonal precipitation (rain and melted snow) in inches.			
	2022	2021	Historical average (1937-2021)
Jan	1	1.5	1.946
Feb	2.61	1.49	1.765
Mar	3.88	1.24	2.520
April	3.88	1.39	3.665
May	6.10	3.34	4.18
June	2.51	6.57	4.2
July	5.7	2.04	3.87
Aug	2.42	2.12	3.78
Sept	.37 (as of 9/8)	1 (whole month)	3.3 (whole month)
Year to date	28.47 (as of 9/8)	20.69 (Jan thru Sept)	29.23 (Jan thru Sept)

How serious is it?

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”. “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

Home invaders (minor)

When the weather finally turns cold, some pests will become home invaders. Boxelder bugs (*Boisea trivittata*) are usually the number one complaint (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 when 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. Boxelder bugs 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,



Figure 2 Boxelder bug nymph (upper) and adult (lower)

have three red or orange lines in back of their heads, and have black wings with red lines, and a red abdomen (fig. 2). 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.

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: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/boxelder-bugs/>

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

Speaking of home invaders: brown marmorated stink bugs or BMSB (*Halyomorpha halys*) 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 (fig. 3). The antennae will have



Figure 3 Brown marmorated stink bug

light-colored bands on them. Overall, the body has a mottled appearance. When the weather cools off, adults will look to overwinter in homes, much like boxelder bugs.

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/>

Miscellaneous

Why are my oak leaves dropping?

We have many reports of small clumps of leaves falling off of bur oak. This has been the big question this year.

There are multiple answers to this question. Sometimes the culprit is squirrels chewing off branches and dropping them. In that case, the cut end of the branch will have a ragged, chewed look. In other cases, the damage is done by the [Kermes scale](#) that gathers near the end of the branch, weakening it. A strong wind can then cause the weak stem to break. A close examination of the fallen branch tip will reveal the scales. They will look like dark colored bumps near the end of the stem.



Figure 4 twig pruner damage

There are a couple of other insects that may be the cause. At this time of year, we may see this damage from twig pruners (*Elaphidionoides villosus*). Twig pruner larvae will cut the twig from the inside, leaving a smooth circle inside (fig. 4). In spring, as leaves are beginning to form, adult twig pruners deposit eggs near the tips of twigs. Larvae move to the center of the branch and begin to feed, tunneling down to the base of the twig. In late summer, they move to the sapwood, making circular cuts, weakening the stems. The weakened stems may hang on the tree and eventually fall to the ground on windy days or during storms. Larvae remain in the fallen branches, spend the winter as pupae, and emerge as adults the following spring.

The adult is a gray-brown beetle 1/2 to 3/4 inches long. Larvae are creamy white, legless, segmented, and reach 3/4 of an inch at maturity. Oak twig pruner larvae feed on many tree species, including maple, oak, hickory, elm, walnut, and a number of fruit trees.

Another insect, the twig girdler (*Oncideres cingulata*), does similar damage, but the damage is caused by the adult, not the larva. In late summer, in order to lay eggs, the adult beetle will chew a groove around the twig (fig. 5). The eggs are laid in the part of the branch that will fall off the tree. The larva will develop in the fallen twig where it will spend the winter and then pupate inside the twig in spring. Adults will emerge in late summer. The damage on the twig is rough in the center and smooth on the outside, opposite of the damage done by the twig pruner.



Figure 5 Twig girdler damage

Management: Looking at the cut end of the stem can help us sort out squirrel damage from that caused by twig pruner and twig girdlers. The presence of the adult scale helps us confirm that pest. There is not much we can do to deter squirrels. Kermes scale may need to be treated, if the population is high. The twig girdlers and pruners will not kill or severely damage trees. To reduce populations, collect and destroy fallen branches and prune out wilted and damaged branches.

Oak problems are often complex

The Plant Clinic at The Morton Arboretum has received a large number of calls about oak trees, especially bur oak, this season. In many cases, it is not easy to resolve the issue because there can be multiple problems affecting the tree at the same time. What are some of these problems?

Age may be playing a role in some cases. There are many older oaks across the Chicago region. Older trees have lived through more years of stress and this can affect their health. Disease may be part of the equation as well. We do see oak wilt in the region, as well as bur oak blight (bur oak only), anthracnose and *Phytophthora* root rot. These diseases vary in severity in terms of the impact they have on a tree. Some are fatal by themselves, and others are not. Those that are not fatal can still add stress to the tree and can be part of a more complex problem. Insects may be involved in some situations. In the last several years, we have seen large populations of scale insects on oaks. [Two-lined chestnut borer](#) has been reported as well, but that insect is often opportunistic, taking advantage of a tree stressed by other problems, rather than the actual cause.

The environment has become a big issue for oaks, as well as many other trees. The last decade has given us several very wet springs, extremely hot (and often dry) summers, and two polar vortices. This summer, the bouts of extreme heat that came on quickly left us with many plants that were actually sunburned (not scorched). Most oaks did not show symptoms of sunburn, but the extreme heat still has an impact. Temperatures above 86 degrees actually cause physiological damage to leaves and they can slow down or stop functioning. That means reduced photosynthesis (production of food) and reduced ability to produce leaves, buds and acorns.

There are things we do that may also have an impact on our oaks (and other trees). If we plant a garden under a tree, we may damage roots. If we install a sidewalk (driveway, swimming pool, etc.), roots may be damaged or soil may be compacted and make it more difficult for water to get into the soil and for roots to function properly. Construction projects may also lead to grade changes and we end up with extra soil over the root system. That can limit the amount of oxygen getting to the roots and again root function will be impaired.

So, when we ask “What is wrong with my oak?” we are really asking a very complex question. To sort things out, we really need to take the time to consider all the problems discussed above. There will not always be a quick, easy answer. We are focusing on oaks in this article, because we are seeing so many doing poorly. Do realize that this same information can apply to any tree, not just the oaks.

Pest Updates: Diseases

Your oak has oak wilt (or does it?)

Here comes that phrase no one wants to hear: “Your oak has oak wilt”. Or maybe you’ve been told that your elm has Dutch elm disease, or that your maple tree has verticillium wilt. That proclamation may have come from a neighbor, or an arborist, or a municipal employee. In any case, it is time to stop and think, not panic. No one can say with 100% certainty that your tree has any of these diseases. No one, except the diagnostic professional who can prove it by culturing it out in a laboratory. Professionals who work in the field can say that they suspect a certain disease based on visible symptoms, but only the lab can confirm it.

There are several very serious diseases that really should be confirmed through laboratory testing. They include oak wilt, Dutch elm disease, Verticillium wilt, bacterial leaf scorch, bur oak blight and pine wilt nematode. Why is it important to be sure? Some of these diseases are very serious and can be fatal. Often, the only option is to cut the tree down. We want to verify the infection is there before we do that. In the case of Verticillium wilt, there is no way to save the tree, but if we can confirm Verticillium, we know that it will impact what we replant in that

area. Verticillium wilt is a disease pathogen that actually lives in the soil and it could potentially infect a new tree.

Laboratory testing is available in each state, through the state lab. In Illinois, the state lab is the [University of Illinois Plant Clinic](#). If you live in another state, you can find your state lab through the [National Plant Diagnostic Network](#). Some arborist companies also have their own labs and can provide testing.

Upcoming Education

Upper Midwest Invasive Species Conference (Oct 25-27, 2022)

Hosted by: [Invasive Plants Association of Wisconsin](#), [Midwest Invasive Plant Network](#), and [Minnesota Invasive Species Advisory Council](#).

KI Convention Center in Green Bay, Wisconsin; Tuesday, Oct 25 - Thursday, Oct 27, 2022

This will be a hybrid event, so you can opt to join us in Green Bay or to access the conference virtually. An overview of the [conference agenda](#) can be found on the UMISC website. Note that over 90% of our speakers will be in person.

The goal of UMISC is to strengthen management of invasive species, especially prevention, control, and containment. This conference provides numerous opportunities to network with professionals, land managers, researchers, nonprofits, and others.

In addition to the excellent lineup of sessions we have for you this year, there are [two workshops](#) and [seven field trips](#) to choose from to enhance your conference experience. The workshops are being offered free of charge, but registration is required. The field trips must be selected and paid for at the time of registration. Space is limited, so book early. You don't want to miss out. Information on [hotel accommodations](#) at the convention center is also available at the [UMISC website](#).

REGISTER TODAY!

Members of [MIPN](#) and [IPAW](#) receive a \$30 discount on conference registration, so there's no better time to become a member. UMISC represents a strong partnership between its three hosts: [Invasive Plants Association of Wisconsin](#), [Midwest Invasive Plant Network](#), and [Minnesota Invasive Species Advisory Council](#).



Bartlett Tree Experts, Presenting Sponsor of the Plant Clinic.

The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by Stephanie Adams, Ph.D., Plant Health Care Leader; 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. I would like to thank all the staff and volunteers that report disease and pest problems when they find them. Our scouts this year are Deb Link, Maureen Livingston, Loraine Miranda, and Molly Neustadt.

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://mortonarb.org/about-arboretum/plant-health-care-report/>

For pest and disease questions, please contact the Plant Clinic. You can contact the Plant Clinic via email at plantclinic@mortonarb.org . Emails will be answered during business hours Monday through Friday. You can call the Plant Clinic by phone (630-719-2424) or visit in person, Monday thru Friday 10 am to 4 pm. Arboretum members need [a timed entry ticket](#) to enter the Arboretum and visit Plant Clinic in person. Non-members need [a timed ticket](#) and must pay the Arboretum entry fee. Inquiries or comments about the PHCR should be directed to Sharon Yiesla at syiesla@mortonarb.org .

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2022 Plant Health Care Report Index



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