

Plant Health Care Report

Scouting Report of The Morton Arboretum



THE
CHAMPION
of TREES

July 8, 2022

Issue 2022.8

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?

Chicory (*Cichorium intybus*) is in early flower (fig. 1)

Accumulated Growing Degree Days (Base 50): 1325 (as of July 7)

Insects

- Two-lined chestnut borer
- Kermes scale
- Japanese beetles and white grubs
- Grapevine beetle
- Two-marked treehopper
- Milkweed beetle and Milkweed bug
- Head-clipping weevil
- Viburnum leaf beetle update

Diseases

- Slime mold, stink horns and mushrooms

Miscellaneous

- Dieback, cankers, stress and the weather
- Proper watering: irrigation bags

Upcoming Education

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



Figure 1 Chicory (photo: John Hagstrom)

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 7/7/2022*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	83.2	90.6	103.4
4-inch, bare soil	85	86.4	93.4
4-inch, under sod	80.9	84.1	87.7
8-inch, under sod	76.2	83.5	83.9

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

Degree Days (current and compared to past years)

As of July 7, we have 1325 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2021) for this date is 1134 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, 2015 and 2014. These years were selected since publication dates of the first issue were within a day or two of each other. Glencoe, Lisle and Waukegan (60085) were not used in 2015 and 2014, so there is 'no report' from those stations.

Location	GDD as of 7/7/22	GDD as of 7/8/21	GDD as of 7/9/15	GDD as of 7/10/14
Carbondale, IL*	1943	1780	1913	1874
Champaign, IL*	1586	1510	1588	1611
Chicago Botanic Garden**	1256 (7/6)	1388 (7/7)	959 (7/8)	1026 (7/9)
Glencoe*	885	949	No report	No report
Chicago O'Hare*	1411	1462	1278	1382
Kankakee, IL*	1379	1385	1342	1412
Lisle, IL*	1437	1451	No report	No report
The Morton Arboretum	1325	1287	1099.5	1183
Quincy, IL*	1665	1385	1680	1679
Rockford, IL*	1253	1340	1091	1185
Springfield, IL*	1632	1572	1664	1650
Waukegan, IL* (60087)	1187	1287	1013	1167
Waukegan, IL (60085)	1270	1364	No report	No report

**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	1.05 (as of July 7)	2.04 (whole month)	3.87 (whole month)
Aug			
Sept			
Year to date	21.03 as of 7/7	17.57 (Jan thru July)	22.17 (Jan thru July)

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

Examples of insects that may emerge soon in northern Illinois (based on growing degree days)			
GDD (base 50)	insect	Life stage present at this GDD	Type of damage
1200-1800	Fall webworm	Caterpillars feeding, but webbing not seen yet	Chewing on leaves
1950	Magnolia scale	Crawlers begin to emerge	Feeding on sap

Two-lined chestnut borer

We are getting a number of reports of two-lined chestnut borer (*Agrilus bilineatus*). This is not a new pest for our area, but it is worth discussing. In the title of this article, I did not rate this pest in terms of severity. Here’s why. This borer attacks weakened oaks. This is a key point to understand. This borer is not usually the primary cause of decline of an oak. Unlike the emerald ash borer, this is NOT an aggressive pest targeting healthy trees. It is an opportunistic pest that takes advantage of an oak that is already under stress from some other problem or

problems. On healthy oaks, the borer's activity is usually restricted to branches that died from some other cause.

Why is this worth noting? If we treat for the borer and do nothing else, we really have not solved the problem. We need to look to see if there is another insect or disease affecting the tree. We need to know if the tree has been affected by storm damage or nearby construction. We also need to consider the weather. For the last ten years or so, our weather has been less than good (several droughts, flooding spring rains, a couple of harsh winters, widely fluctuating temperatures). In short, we need to identify other stressors and see if we can do anything to mitigate them.

Larvae of this native borer feed in the tissues under the bark, like many other borers do, making galleries in the tissue. The larvae overwinter under the bark. They pupate in spring and begin to emerge as adults in late May. The emergence hole of the adult is similar to that of other borers in the genus *Agrilus* (bronze birch borer and emerald ash borer). It is shaped like a capital 'D' and is about the size of half a pencil eraser. The adults mate and lay eggs over the next few weeks. The eggs hatch, and the new larvae enter the bark to feed.

Management: Treating this borer with systemic insecticides can be useful, if the decline of the tree has not gone beyond 40% loss of the canopy. As noted above, this is only part of the solution. New oaks need to be planted and cared for properly. This means planting at the right depth, using best practices, such as regular watering, mulching and pruning out dead limbs (in the dormant season only). All oaks should be protected from compaction and construction damage. Fertilizer should be considered carefully. It is a source of nutrients, not a magic elixir to fix all problems. Young trees that are putting on a lot of growth may need to be fertilized annually. Older, established trees may need it less frequently (maybe every 3 to 5 years). Trees under stress may not need it at all. Fertilizer applied to dry or damaged roots may do more damage. Fertilizer can push growth in a tree and lead to increased water needs. In a drought, this may also add stress.

Good websites: <https://extension.umn.edu/tree-and-shrub-insects/metallic-wood-boring-beetles>
https://www.fs.fed.us/nrs/pubs/jrnl/2020/nrs_2020_haack_001.pdf

Kermes scale (potentially serious)

A few years ago, we had a high population of kermes scale (*Kermes* species) on oak, most commonly on bur oak. We are seeing this pest again this year. There are a couple of species of kermes, and they vary in color. Some species are dark and some are more mottled. We have received a report of Kermes scale on bur oak this season. This species of scale tends to congregate at the ends of the twigs, weakening them (fig. 2). Often the ends of twigs will break

off and fall to the ground. The appearance of several twig ends on the ground tends to get the attention of the owner of the tree. Luckily there is little long-term damage from the dropping of the twigs. This scale does produce honeydew.

Management: Hand removal is possible on small trees. Heavily infested branches may be pruned out to reduce infestations. Kermes scale is often controlled by natural predators. Insecticide sprays are commonly targeted at the young (crawler stage) of the scale, so knowing which scale you have and when the crawlers are expected helps with the timing of pesticide use. The crawlers of the Kermes scale found on bur oak will emerge in June. Systemic insecticides may be used on some species of scale, but planning is required as these products are often applied a few months ahead of time to give them time to move through the plant. Before using any insecticide, check for the presence of beneficial insects.



Figure 2 Kermes scale (photo: T. Bethke)

Good website: [Kansas State](#)

Japanese beetles and white grubs (Potentially serious)

That special time of year has arrived. It's Japanese beetle (*Popillia japonica*) time. As early as June 28, we received a report of adult beetles in Naperville. They have also been seen as far north as the Barrington area. Our scouts have found them on the Arboretum grounds as well. Japanese beetles are up to 1/2 inch-long, and have oval, metallic green bodies with coppery brown wing covers (fig. 3). They have five white spots along each side and two additional white spots behind their wing covers. Upon examination under a hand lens, the spots are actually tufts of hair.



Figure 3 Adult Japanese beetle

Adult beetles feed on about 300 different species of ornamental plants with about 50 species being preferred. Highly preferred hosts include rose, crabapple, cherry, grape, and linden. The adults feed on leaf tissue between veins, resulting in

skeletonized leaves (fig. 4). Severely infested plants may be almost completely defoliated. Early infestations of Japanese beetle may be missed since the insects often start feeding in the tops of trees.

Japanese beetles overwinter as larvae (grubs) about four to eight inches beneath the soil surface. In spring, as the soil temperatures warm to about 55° F, the grubs move upward through the soil to pupate. Adults normally emerge from late June through July. Within a few days after emergence, the adults mate and the females burrow into the soil to lay eggs. Nearly all eggs are laid by mid-August. In sufficiently warm and moist soil, eggs will hatch in about ten days. Grubs feed on plant roots until cold weather forces them to greater depths in the soil for the winter. There is one generation of this beetle per year.



Figure 4 Japanese beetle damage

Japanese beetles are harmful as adults, but also in the larval or grub stage. Even if you do not see Japanese beetles in your yard, your lawn could still have grubs. Other species of beetles also have grubs as their larval stage. How do you know if your lawn needs grub control? Grubs eat grass roots, and this will lead to brown areas in the lawn. Unfortunately, other causes can lead to a brown lawn. If your lawn has grubs, you will be able to pull the lawn up like a carpet since the roots are gone. Homeowners who are irrigating the lawn should be watchful. The beetles have to bury their eggs in the soil. They are more likely to do this in soils that are moist and easy to dig. So, those who water lawns may be more likely to deal with grubs.

Is grub control a good idea for everyone? Not necessarily. If your lawn has never had grubs before and you are not irrigating, it would be best to skip the grub control. Usually control is not warranted unless 10-12 grubs are present per square foot.

Management: Adult Japanese beetles can be handpicked. It is easiest to catch them by placing a soapy-water filled container directly under the leaf that they are chewing on and then shaking the leaf. The soapy water ensures that the beetles die while you're collecting them. The beetles generally drop straight down into the collecting container. Sometimes Japanese beetle pheromone traps are used to trap them. We don't recommend these, as they will attract even more beetles to your property (more than the trap can collect). Insecticides can be used in the case of valuable plants, but even insecticides do not guarantee control. A soil drench of systemic insecticide in spring is sometimes recommended for control of Japanese beetles. **It should be noted that imidacloprid and dinotefuran labels indicate that these products can no longer be used on lindens (*Tilia* species). That means it is illegal to use it on**

those trees. Some other systemic products have the same labeling. Be sure to check the label of any systemic product concerning its use on lindens.

Managing the Japanese beetle grubs that will hatch out around late July may help to reduce populations of adult beetles for next year. Eggs and first instar larvae require moisture to survive; therefore, the easiest way to reduce grub populations is to limit lawn irrigation during the egg-laying period when beetle populations peak (mid-July through early August). Japanese beetles also avoid laying eggs in shade, which is another great reason to plant more trees and shrubs. Insecticide applications are effective in controlling young grubs.

If you plan to manage the grub stage with insecticides, know that the timing of application depends on the product selected. There are now many insecticides available to treat grubs, and they have different application times. Traditional grub control insecticides are applied to the lawn when young grubs are active (August and September). Other products may be applied in mid-summer or even late spring, but are still targeted at new grubs. The bottom line is to read the product label carefully and use it at the appropriate time. The information given here is very general. The product label will give specific information.

Biological insecticides that contain *Bacillus thuringiensis var. galleriae* are targeted toward beetles and their grubs. Other grub control insecticides are broad spectrum and may kill other insects besides beetles.

We receive a lot of questions about the use of the biological control milky spore disease. This is a bacterium that is specifically toxic to the grub stage of the Japanese beetle and is applied to the soil. This is a slow method at best in the warmer southern states (may take 3-5 years to build up in soil enough to be effective) and is often not very effective at all in colder, northern states. Also, if you have grubs that come from another type of beetle, it won't work on them at all. The product is specific to the grubs of Japanese beetles. This product is really not recommended for our area.

Beneficial nematodes can be watered into turf, again in late July, where they infest and kill grubs. Products containing *Heterorhabditis bacteriophora* nematodes are recommended by the University of Illinois. Beneficial nematodes are not always available in stores; they are available through mail order/internet sources.

Good websites:

<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/japanese-beetles/>

https://www.canr.msu.edu/news/how_to_choose_and_when_to_apply_grub_control_products_for_your_lawn

Grapevine beetle (minor)

If you are checking your grape vines for Japanese beetles, you may find another beetle lurking there as well. The grapevine beetle (*Pelidnota punctata*), also known as Grape pelidnota or the spotted June bug, is out as well. This is a big beetle, about an inch long. It is an off-yellow to a brownish-yellow tinged color (fig. 5). It has six small black spots on its wing covers and a small black spot on each side of its pronotum, the area between the wings just in back of the neck. The adult beetle eats grapevines. Eggs are laid on stumps and rotting logs. The eggs hatch into larvae that feed on decaying roots and stumps of trees, and pupate to become adults from May to September.



Figure 5 Grapevine beetle

Management: Handpicking is usually all that is necessary.

Good web site: <https://uwm.edu/field-station/grapevine-beetle/>

Two-marked treehopper (minor)

Nymphs and adults of the two-marked treehopper (*Enchenopa* species) have been found. There are a number of species within this genus and they are all very host-specific. We often see this insect on redbud. Adults are dusky brown with two yellow spots on their backs, thus the name. They have a high, curved horn that points forward coming out of their thorax (fig. 6). The adults are less than ½ inch long. The nymphs look quite different from the adults. They're about 1/8- inch long, dark gray to brown, and have spines sticking out of their abdomens (fig. 7).



Figure 6 Adult two-marked treehopper

In late summer, adult females cut slits in bark to lay their eggs, then cover the area with small, white egg-plugs that can be mistaken for mealybugs or scale insects. The insect overwinters in the egg stage. The young nymphs hatch out in spring and feed on shoots of the host tree. Nymphs, and later adults, suck plant juices, but don't do much damage. The damage appears as pale-yellow stippling on the leaves. Female adults can injure twigs by laying eggs in slits made in the bark, but even this is fairly minor.



Figure 7 Nymphs of two-marked treehopper

Management: Control is generally not necessary.

Good website: <https://bygl.osu.edu/node/1388>

Milkweed beetle and Milkweed bug (minor)

Milkweed has become a popular plant to grow in home gardens as well as native areas. Many are hoping to attract monarch butterflies. Sometimes uninvited guests show up too. Our scouts have found a few of these out there already. I am talking about milkweed bugs and milkweed beetles.

Red milkweed beetles (*Tetraopes tetrophthalmus*) are 1/2 to 3/4 inch-long and rosy red with black spots and long black antennae (fig. 8). Adults feed on milkweed leaves; while in the larval stage they bore into and feed on milkweed stems and roots.



Figure 8 Milkweed beetle

Milkweed bugs also attack milkweed. There are two species of milkweed bug, the large milkweed bug (*Oncopeltus fasciatus*) and the small milkweed bug (*Lygaeus kalmia*). These two insects look very much alike, both sporting bright orange-red and black colors. Young bugs (nymphs) also have these colors, but lack fully developed wings (fig. 9). Both the adults and the nymphs will feed on the milkweed seeds, and it is not uncommon to see groups of them huddled together on the milkweed fruits. These insects are often mistaken for boxelder bugs which are similar in color.



Figure 9 Milkweed bug adults and nymphs

Management: None usually needed as relatively little damage is done.

Good websites: <http://bugguide.net/node/view/504>
<http://bugguide.net/node/view/460>
<https://bugguide.net/node/view/2966>

Head-clipping weevils (minor)

Our scouts have found head-clipping weevils (*Haplorhynchites aeneus*) cutting the flower heads off of *Silphium* species. The pest is not limited to species of *Silphium*. In past years, we have seen them on other members of the Aster family, including *Echinacea* and *Helianthus*. This year, the scouts managed to find not only the damage, but the adult insect! The adult is a dark-colored weevil, a beetle with a snout (fig. 10). The insect is about ¼ inch long, and the snout is long and curved. The female uses her mouthparts, located at the end of the snout, to cut the flower stalk about 1 inch to 1 ½ inches



Figure 10 Adult head-clipping weevil

below the flower head. The flower stalk is not cut all the way through, so the flower head dangles on a thin piece of stem tissue (fig. 11). The dangling flower head is used by the adults for mating and egg-laying.

Once the flower head finally breaks off and falls to the ground, the larvae hatch and use the flower head for food. Mature larvae will move into the soil to overwinter, with pupation occurring in late spring.

Management: Good sanitation is the key in managing this pest. Timely removal of hanging flower heads and recently fallen flower heads will reduce the population for next year. While the insect does not do much long-term damage to the plant, it will spoil your enjoyment of the flowers.

Good websites: <https://bygl.osu.edu/node/1087>
<http://entomology.k-state.edu/extension/insect-information/crop-pests/sunflowers/sunflower-headclipping-weevil.html>



Figure 11 Flower clipped by the head-clipping weevil

Viburnum leaf beetle update (serious)

We expect viburnum leaf beetle adults to emerge soon (if they are not out already). The beetles are small (1/3 inch) and brown to golden brown (fig. 12). They are not easily noticed, but their feeding is. They will pick up where the larvae left off.

Management: Adults can be treated with a variety of insecticides. Insecticidal soap is **not** effective on the adults. They have hard bodies and insecticidal soap works primarily on soft bodied insects. Do not spray for the adults until they are present. Insecticides are not preventative.



Figure 12 Viburnum leaf beetle

In fall, look for egg-laying sites (fig. 13). The actual eggs are not visible. The eggs are laid in small holes on the ends of twigs, and then the holes are capped. The caps stand out against the bark of the twig, making them easy to see. Cut out the twigs that have the eggs in them, and get them out of the garden completely. This will greatly reduce the number of insects you have next year. If you have a number of shrubs, remember that



Figure 13 Egg laying sites

you have all fall and winter to remove these twigs. Getting them in the egg stage greatly reduces the need to spray next year. We can't stress enough the importance of this technique. This is the most effective management approach and the least toxic to beneficial insects.

Pest Updates: Diseases

Slime molds, stinkhorns and mushrooms (minor)

Spring was wet this year and summer rain has been a little hit or miss, with some areas getting a lot and other areas only a little. With regular rainfall usually comes the question "What is that stuff on my mulch?" Regular rainfall leads to a variety of strange looking growths in the garden. Wet weather promotes the growth of a variety of mushrooms, and there are any number of different-looking mushrooms. Wet soils lead to decay of organic matter, and these mushrooms are the reproductive structures of the fungi that cause organic matter to decay. Mushrooms can be easily dug up and discarded.

A weird growth that shows up in the wet weather is slime mold (fig. 14), another decay organism. My neighborhood has been a little short on rain, and yet, I am finding slime mold in my own yard. Slime mold, when fresh, comes in nice colors like yellow and pink, and it looks like a puddle, the kind of puddle that makes you wonder if your dog needs to go to the veterinarian. As it dries, some of the color goes away, and the puddle becomes a dry crust. When it has dried, slip the blade of your shovel under it and lift it away to the garbage.



Figure 14 Slime mold

A third candidate in the "what is that" category is the stinkhorn. Stinkhorns are a type of mushroom, but they merit a mention because they really capture our attention. They come in an interesting array of colors and, guess what, they stink. If the smell does not get your attention, the crowd of flies around them will. A common type is reddish-orange and sort of looks like carrots growing upside down in the mulch. But they do come in many weird and even vulgar shapes. One thing that intrigues people is that the stinkhorn grows out of a structure that looks like an egg. Just as with slime mold, we can slip our shovel blade in and lift them away to the garbage.

Miscellaneous

Dieback, cankers, stress and the weather

That title has a lot going on, and those things often go hand in hand. One of the most popular questions in Plant Clinic is “Why is my (name of plant) leafing out slowly/having dead twigs/turning yellow”? Everyone expects the problem to be a disease or insect, but these days it is often a combination of weather-related events that cause stress. This stress can make plants more susceptible to canker diseases, and those cankers lead to dieback of branches. We have had stressful weather years since at least 2012. That year gave us early and extreme heat, coupled with a drought (which most likely led to some root damage). The next two years gave us extremely wet springs and flooded soils in many areas (more root damage). We have also had two polar vortices since then. We again had really wet springs in 2019 and 2020. Then 2021 gave us a dry spring and a dry summer. In recent years, we have had up-and-down springs, where the temperature was 80 degrees one week, and near freezing levels the next week. With 10 years of stressful weather extremes, it is no wonder that some plants are struggling.

Many trees and shrubs have cankered stems. Canker disease organisms are usually not very aggressive in healthy trees. They generally need an entryway, such as wounds or natural openings, like lenticels, to infect the host. When trees are under the kind of stress we have been seeing for the last several years, the disease organism can get in to stressed trees through natural openings. The canker disease organism grows under the bark and destroys the tissue that moves water through the plants, cutting off the water supply. Canker stems may have broken or peeling bark, sunken areas or discolored bark. These stems need to be cut out. Disinfect pruning tools between cuts to minimize spread of these diseases.

We can't control the weather, but we can give our trees and shrubs good care to help mitigate some of the effects of the weather. It is always a good idea to prune out dead wood and cankered branches. We do not recommend fertilizing these stressed plants. If the roots are compromised and not taking up water from the soil, they won't be able to take up nutrients either. Chemically, fertilizers are considered salts and may further damage stressed roots. Water is the best remedy for injured roots. We need to supply enough water to allow new roots to grow, but must be careful not to saturate the soil. Roots need water, but they also need air.

Proper watering: irrigation bags

When it comes to caring for trees (or really any part of the landscape), we often talk about the importance of watering. Water is a very precious commodity, and so we want to use it wisely.

This is the first in a series about watering properly and trying to strike a balance between giving our trees what they need and doing so with as little waste as possible. This article will deal with some basics and with the use of irrigation bags for new trees. Future articles will look at proper use of other watering devices.

The general guideline for watering is to give any plant about an inch of water per week (between you and the rain). The question that usually follows this statement is “How do I know when I have an inch?” In a clay soil, one inch of water should go down about 5 to 6 inches deep. After you finish watering, with whatever device you use, you can dig a small hole and see how far down the water has gone. For those of you who don’t enjoy digging small holes, focus on the concept that we want to water deeply and infrequently. Many people who talk to us at Plant Clinic indicate that they are watering their plants every day, and often for a very short period of time. If you need to water your plants every day, then you are not watering deeply enough when you do water and your plant is not receiving enough water at any time. The only plants that need to be watered every day are those in containers (which often dry out quickly due to small soil volume), or possibly small seedlings that have very small root systems. Get to know your watering device, how it delivers water and, most importantly, how quickly does it deliver that water.

Since our priority for watering is focused on newly planted trees and shrubs, let’s look at irrigation bags (fig. 15). There are different types available. Many are 2 to 3 feet tall and often green in color. Others have a very low profile and look somewhat like a big donut. The latter type is good for low-branched shrubs. The bag gets filled with water and then the water is delivered slowly out of the perforated bottom of the bag. These bags have benefits.



Figure 15 Irrigation bags (photo: S. Yiesla)

You know exactly how many gallons of water you are delivering to the tree (bags vary in their capacity). The bag sits on the root ball of the tree and the water goes slowly and directly down into that root ball where it is needed the most, instead of rolling out into the lawn or gutter.

One common complaint is that the bag seems to always be empty. The bag gets filled and the water is delivered to the tree and usually empties out within a few hours. That is how it is supposed to work. The bag is not meant to be full all the time. The only thing to figure out is

how often the bag should be filled. In times when temperatures are moderate and we are getting some rain fall, once a week may do the trick. In times of extreme heat, like we have been having lately, the bag may need to be filled every 3 to 5 days. When in doubt, lift the bag up and feel the soil under it. If the soil is still moist, all is well. If it is dry an inch down, it may be time to refill.

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](#).

2022 UMISC Conference: Meeting Challenges, Facing the Future...Together!

KI Convention Center in Green Bay, Wisconsin
Tuesday, October 25 - Thursday, October 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



THE
CHAMPION
of TREES

Following is an index of the various subjects in this year's report. The number after each subject is the report number. For example, using the chart below, Cicadas.....1 means that it was discussed in the PHCR 2022.01 or the newsletter dated April 1, 2022. The index is updated with the publication of each full issue and is included at the end of each full issue.

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