

# Plant Health Care Report

Scouting Report of The Morton Arboretum



THE  
CHAMPION  
of TREES

July 21, 2023

Issue 2023.9

For comments regarding PHCR, or to subscribe to email alerts regarding posting of new issues, contact me at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org). Our report includes up-to-date disease and insect pest reports for northeastern Illinois. Contact us via email at [plantclinic@mortonarb.org](mailto:plantclinic@mortonarb.org) or by phone at 630-719-2424 (Monday thru Friday, 10 am to 4pm). The Plant Clinic is also open to walk-ins, but a [timed entry](#) and payment of entry fee is required for non-members.

## Quick View

### What indicator plant is in bloom at the Arboretum?

Queen Anne's lace (*Daucus carota*) is in full flower (fig. 1)

**Accumulated Growing Degree Days (Base 50) at The Morton Arboretum: 1377 (as of July 20).**

### Insects/other pests

- Chrysanthemum lace bug
- Magnolia scale
- Fall webworm
- Annual cicadas
- Zimmerman pine moth
- Japanese beetle update

### Diseases

- Bur oak blight



Figure 1 Queen Anne's lace

## 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://warm.isws.illinois.edu/warm/soil/> (you will need to set up an account to access data.)

Max. Soil temps For 7/20/2023*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	79.8	98	90.1
4-inch, bare soil	77.8	90.4	83.5
4-inch, under sod	79.4	88.6	83.4
8-inch, under sod	75.5	81.3	79.7

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

## Degree Days (current and compared to past years) and rainfall

As of July 20, we have 1377 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2022) for this date is 1452 GDD<sub>50</sub>. The table below shows a comparison of GDD in different years. We are comparing the GDD<sub>50</sub> reported in this issue with the GDD reported in the first issue of 2022, 2017 and 2016. These years were selected since publication dates of the first issue were within a day or two of each other. Glencoe, and Waukegan (60085) were not used in 2017 and 2016, so there is 'no report' from those stations.

Location	GDD as of 7/20/2023	GDD as of 7/21/2022	GDD as of 7/20/2017	GDD as of 7/21/2016
Carbondale, IL*	2194	2355	2418	2397
Champaign, IL*	1817	1937	2022	1995
Chicago Botanic Garden**	No report	1621	1387 (7/19)	1411 (7/19)
Glencoe*	950	1193	No report	No report
Chicago O'Hare*	1628	1749	1616	1776
Kankakee, IL*	1593	1708	1750	1766
Lisle, IL*	1653	1776	1666	1796
The Morton Arboretum	1377	1648	1456	1504
Quincy, IL*	1933	2036	2140	2195
Rockford, IL*	1511	1573	1493	1574
Springfield, IL*	1860	2002	2108	2110
Waukegan, IL* (60087)	1398	1496	1319	1545
Waukegan, IL (60085)	1486	1587	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.			
	2023	2022	Historical average (1937-2022)
Jan	2.85	1	1.935
Feb	4.88	2.61	1.775
Mar	2.29	3.88	2.536
April	2.23	3.88	3.667
May	.79	6.1	4.206
June	1.23	2.51	4.2
July	5.9 (thru 7/20)	5.7 (whole month)	3.9 (whole month)
Aug			
Sept			
Year to date	20.17 (thru 7/20)	25.68	22.21

### 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

### **Chrysanthemum lace bug (minor to potentially serious)**

From time to time we see lace bugs on trees, like sycamore and oak. For the last couple of years we have one report of chrysanthemum lace bug (*Corythuca marmorata*) on an aster. This year, we have also received one report of this pest, again on aster. Lace bugs have an interesting shape, and this one is typical of the genus (see this [link](#) for photos). From above they have a lacy appearance.

Chrysanthemum lace bugs overwinter as adults under rocks and in dry leaves and debris. In spring, females lay their eggs along the veins of the leaves. The nymphs that hatch out will be

black and spiny. This is the stage we saw earlier this week. The nymphs will molt 5 times before they become adults. This may take about 30 days. There can be more than one generation per year.

These are sap-feeding insects, so the leaves that are attacked take on a stippled appearance. Lace bugs also produce tiny black specks of excrement that tend to be easy to spot (found mostly on the lower side of the leaves). These insects don't necessarily kill the plant, but can ruin their appearance.

**Management:** This insect is often controlled by predators and parasitic wasps. If they are not controlled in this way, they can be treated with insecticidal soap or horticultural oil. These products must come in contact with the insect to kill it, so both the upper and lower leaf surfaces need to be sprayed.

Good websites: <https://blogs.k-state.edu/kansasbugs/2016/06/29/lace-bugs-nothing-to-worry-about/>  
<https://content.ces.ncsu.edu/chrysanthemum-lace-bug>

### **Magnolia scale (potentially serious)**

Magnolia scale (*Neolecanium cornuparvum*) has been an ongoing problem in northern Illinois for a number of years now. While we have received fewer calls about magnolia scale this year, it is still fairly prevalent. It is worth reviewing this pest, as the crawlers (fig. 2) are expected out later this season.

This is an unusual scale insect because they're so big and easy to see! These insects have sucking mouthparts and extract sap from the host plant's branches and twigs. As with most soft scale infestations, plant leaves are often covered with sooty mold, a black fungus that grows on the honeydew excreted by the scales. Sooty mold cuts down on photosynthesis because it blocks sunlight from the leaf.

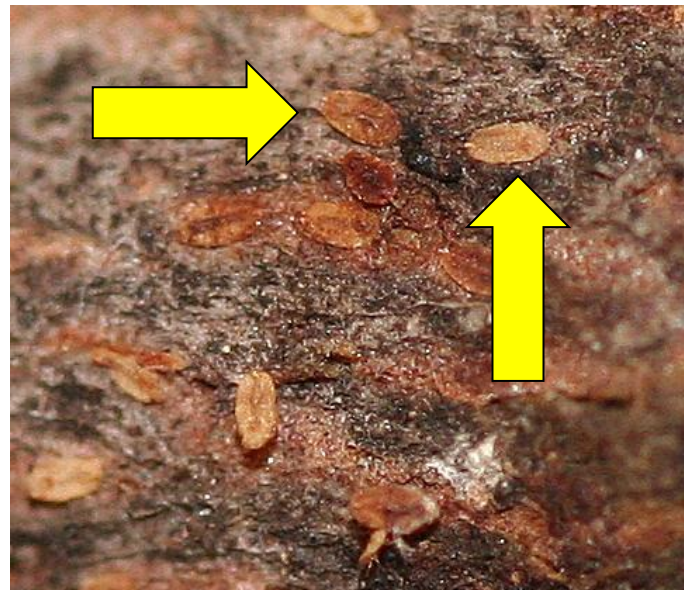


Figure 2 Magnolia scale crawlers (arrows)

Initially, maturing magnolia scale are shiny, flesh-colored to pinkish brown, and smooth, but they become covered with a white mealy wax over time. This wax is lost at the time crawlers emerge. Adult females give birth to live young, called crawlers, in late August or early September. The [National Phenology network](#) estimates that it is more likely they will be out by mid-August this year. Some universities report that the beginning of emergence should start around 1900 to 1950 GDD. We already **have ??? GDD** due to several recent bouts of extreme heat. The crawlers are tiny, flattened, and vary in color from yellow to reddish-brown. The crawlers settle on one- to two-year-old twigs to feed and remain there through the winter.

**Management:** Late summer into fall is a good time to tackle this pest as the crawlers are very vulnerable to insecticide treatments (such as insecticidal soap and summer oils). These products will kill the crawlers, but they must come in contact with them to destroy them. Once crawlers begin to emerge it may be wise to wait a few days for a larger number of them to emerge, so that the spray will kill as many as possible. Because they will not all emerge at once, it would be wise to continue to check for live crawlers a little later in the season, and be prepared to do additional treatments when more of the population is out. Product labels will give timing on repeat applications. Remember that we are targeting the crawlers, not the adults. The adults will die on their own, from old age. It should be noted that adult scale will remain in place even when dead. Don't spray with the intention of killing the adults.

Good web site: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/magnolia-scale-neolecanium-cornuparvum/>

### Fall webworm (minor)

It's about time to be seeing fall webworm (*Hyphantria cunea*). We don't have any reports of this pest yet, but they are often overlooked when they are small. So, it is time to be looking. Despite the name, this insect shows up more in mid to late summer. Caterpillars start to come out around GDD 1200, but the webbing typically is not produced until closer to GDD 1800, so the caterpillars may be eating for a few days before the telltale webbing shows up. This caterpillar is known to feed on more than 100 species of deciduous trees. Preferred hosts include hickory, ash, birch, black walnut, crabapple, elm, maple, oak, and pecan. The caterpillars (fig. 3) are pale green to yellow and covered



Figure 3 Fall webworm caterpillars



with long hairs. There are two races, black-headed and red-headed. The black-headed webworms are supposed to appear about a month earlier than the red-headed race. Full-grown caterpillars reach about one inch in length.

Fall webworms overwinter in the pupal stage in the ground, under loose bark, and in leaf litter. Adult moths appear from early to mid-summer, and females deposit eggs in masses on the underside of host leaves. In about one week, eggs hatch into caterpillars that begin to feed and then to spin a messy web (fig. 4) over the foliage on which they feed. The webs increase in size as caterpillars continue to feed. In about six weeks caterpillars will drop to the ground and pupate. Damage is cosmetic since this pest eats leaves late in the season after the leaves have finished their job of making food for the plant.



Figure 4 Web of fall webworm

Some people confuse fall webworm and eastern tent caterpillar. How can you tell the difference? Eastern tent caterpillars are spring caterpillars and form thick, neat tents in the angles of branches. Fall webworm caterpillars are active much later in the season and make a messy web at the ends of the branches. Eastern tent caterpillars go outside the tent to feed and return to the tent at night. Fall webworm caterpillars feed in the nest and expand the nest to enclose more leaves to feed on.

**Management:** Insecticides are not warranted. The unsightly webs can be pruned out of small trees. Since these caterpillars stay in the web while feeding, pruning the webs at any time of day will eliminate the caterpillars. Webworms also have many natural enemies including birds, predaceous bugs, and parasitic wasps.

Good website: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/fall-webworm/>

### **Annual cicada (minor)**

There has been a lot of talk this year about the perennial or 17-year cicadas. That insect will come out in Northern Illinois in 2024. It is, however, time for the annual, or dog-day cicadas (*Neotibicen linnei*) to show up. These are the insects that make a lot of noise high in trees during the warm, dog-days of summer. This is the mating call of the male. The insect is about

1 ¾ inches long and green to brown with black markings (fig. 5). A distinguishing feature between the annual and periodic cicada is the eye color. The periodic cicada has red eyes and the annual has black. Periodical cicadas have orange veins in their wings, the annual does not.

Like the periodical cicadas, females lay eggs by sawing a slit in the bark of twigs and placing the eggs in the twig. Egg-laying injury can cause some minor twig dieback. After the eggs hatch, the young nymphs drop down into the ground to feed on plant roots. They have large front legs used for digging in the soil. They live on tree roots as nymphs for two to five years with some adults emerging in late summer every year. The feeding on the roots doesn't cause much damage.



Figure 5 Annual or dog-day cicada

**Management:** Control is not necessary since they cause minimal damage to trees.

Good website: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/periodical-cicadas/>

<http://www.uky.edu/Ag/CritterFiles/casefile/insects/homoptera/cicadas/cicada.html>

### Zimmerman pine moth (serious)

It is also time to start thinking about Zimmerman pine moth (*Dioryctria zimmermani*). Mid-August is a good time to treat for this pest.

Larvae damage trees by tunneling just beneath the bark of the trunk and branches. The tunnels can girdle and weaken the trunk or branches so they are easily broken by wind or snow. Heavily infested trees are often deformed and are sometimes killed. Common hosts include Austrian, Scots, and ponderosa pines.

Larvae overwinter in cocoon-like structures under bark scales. They become active in the spring and tunnel into the bark and sometimes the terminals. In late spring, they migrate to the



Figure 6 Pitch masses caused by Zimmerman pine moth

base of branches, tunneling into the whorl area where pitch masses (fig. 6) exude from the wound site. The larvae continue to feed, pupate within the pitch mass, and emerge as adults in August. After mating, female moths lay eggs, often near wounds or previous pitch masses. Eggs hatch in about a week, and the larvae feed for only a brief time before preparing to overwinter.

**Management:** Damaged wood should be pruned out as soon as dieback and pitch masses are seen. Larvae can be controlled by spraying bark and foliage with insecticides in mid-August; GDD 1900-2150 (this GDD derived from several universities, not “Coincide”). Michigan State indicates that adult flight may occur as early as 1700 GDD.

### Japanese beetle update

For the most part, Japanese beetle populations seem very sparse. Most reports we are getting indicate very small populations. We have had a report of a larger population in southern Lake County, in the Barrington area.

### Pest Updates: Diseases

#### **Bur oak blight (potentially serious)**

We are not seeing a lot of diseases this season, likely due to lack of rainfall during the time when leaves are most susceptible to infection. But we do want to keep our guard up and be on the lookout for bur oak blight (BOB). This disease is caused by the fungal pathogen *Tubakia iowensis*. There are other species of *Tubakia* that cause less serious fungal diseases. BOB infects bur oak (*Quercus macrocarpa*), and recent research by Iowa State shows that swamp white oak (*Quercus bicolor*) may be infected, although this is rare.

We have not had any calls about this disease yet, but this is the time to be looking for symptoms. The first symptoms are purplish spots on the veins on the lower side of the leaves. The spots then spread and develop into purple coloration along the veins (fig. 7) on both the lower and upper side of the leaves. In August and September, symptoms will worsen, with veins dying and the



Figure 7 Vein discoloration due to bur oak blight

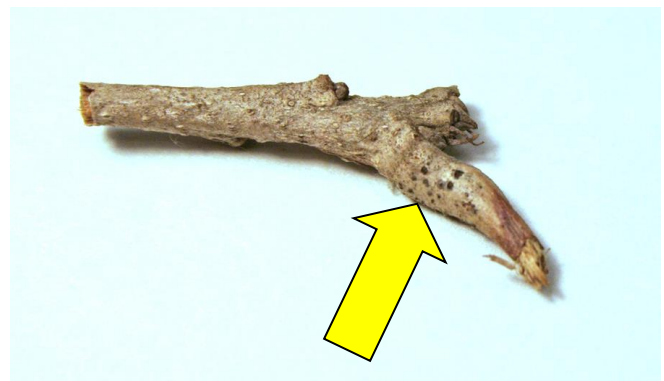


Figure 8 BOB pustules on petiole (arrow)



infection moving to the end of the leaf, leading to a wedge-shaped dead area. While there may be some defoliation, some infected leaves will remain on the tree, and the fungal spores will overwinter in pustules located on the petioles (fig. 8) of these infected leaves. The main part of the leaf may fall, but the petiole often remains attached to the tree. The presence of these pustules is considered a requirement for the confirmation of BOB. New spores will be released in spring. Repeated years of defoliation may predispose the tree to other problems, such as Armillaria root rot and two-lined chestnut borer. Often, these secondary problems contribute to the death of a tree as much as BOB itself.

**Management:** First, confirm that the tree actually has bur oak blight. Get a sample tested at the University of Illinois Plant Clinic (<http://web.extension.illinois.edu/plantclinic/>). Keep trees vigorous through proper watering and pruning (during dormant season). Iowa State and University of Minnesota are indicating that injections of propiconazole in spring may be useful in slowing the disease. Injections must be done by a licensed professional. Raking fallen leaves does not help manage this disease because the petioles that remain on the tree are a source of infection.

Good websites:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/bur-oak-blight>  
<http://hyg.ipm.illinois.edu/article.php?id=752>

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## 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 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 all the staff and volunteers that report disease and pest problems when they find them. Your hard work is appreciated. Our volunteer scouts for 2023 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://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects)  
[http://extension.unh.edu/resources/files/Resource000986\\_Rep2328.pdf](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](mailto: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. On weekends and national holidays, Arboretum members need [a timed entry ticket](#) to enter the Arboretum and visit Plant Clinic in person. Non-members need [a timed ticket](#) every day and must pay the entry fee.

Inquiries or comments about the PHCR should be directed to Sharon Yiesla at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org).

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## 2023 Plant Health Care Report Index



THE  
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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 2023.01 or the newsletter dated April 7, 2023. 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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