

# Plant Health Care Report

Scouting Report of The Morton Arboretum



THE  
CHAMPION  
of TREES

Aug 6, 2021

Issue 2021.10

For comments regarding PHCR, or to subscribe to email alerts regarding posting of new issues, contact Sharon Yiesla at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org).

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. Plant Clinic staff and volunteers are now back to working onsite, with the Plant Clinic open to walk-in visitors. Questions can also be answered by email at [plantclinic@mortonarb.org](mailto:plantclinic@mortonarb.org), or by phone at 630-719-2424 (Monday thru Friday, 10 am to 4 pm).

## Quick View

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

Canada goldenrod (*Solidago canadensis*) is just beginning to flower (fig. 1).

### Accumulated Growing Degree Days (Base 50): 1908 (as of Aug 5)

#### Insects/other pests

- Bagworm
- Magnolia scale update
- Milkweed beetles and bugs
- Grubs in the lawn



Figure 1 Canada goldenrod (photo: S. Yiesla)

## Soil temperatures around Illinois (from Illinois State Water Survey)

For more data go to <https://www.isws.illinois.edu/warm/soil/> (you will need to set up an account to access data.)

Max. Soil temps For Aug 5, 2021*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	81.4	87.3	99.2
4-inch, bare soil	88.5	93.5	88.1
4-inch, under sod	79.1	82.3	81.9
8-inch, under sod	74.4	76.9	77.3

\* 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 Aug 5, we have 1908 base-50 growing degree days (GDD). The historical average (1937-2020) for this date is 1836 GDD<sub>50</sub>. 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 the first issue of 2020, 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 8/5/21	GDD as of 8/6/20	GDD as of 8/6/15	GDD as of 8/7/14
Carbondale, IL*	2515	2541	2759	2517
Champaign, IL*	2162	2151	2320	2162
Chicago Botanic Garden**	No report	1947	1616	1561.5 (8/6)
Glencoe*	1542	1539	No report	No report
Chicago O'Hare*	2107	2013	2012	1982
Kankakee, IL*	2013	2003	2018	1964
Lisle, IL*	2102	2054	No report	No report
The Morton Arboretum	1908	1966.5	1738	1701.5
Quincy, IL*	2301	2266	2444	2311
Rockford, IL*	1936	1894	1719	1704
Springfield, IL*	2241	2220	2426	2242
Waukegan, IL* (60087)	1896	1763	1674	1714
Waukegan, IL (60085)	1992	1834	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 (rain and melted snow) in inches.			
	2021	2020	average
Jan	1.5	2.14	1.952
Feb	1.49	.85	1.769
Mar	1.24	4.15	2.536
April	1.39	4.37	3.692
May	3.34	8.24	4.194
June	6.57	4.91	4.190
July	2.04	2.87	3.893
Aug	0 (as of 8/5)	1.1	3.802
Year to date	17.57 (as of 8/5)	27.53 (as of 7/31)	22.22 (as of 7/31)
Total (Jan-Sept)		32.18 (Jan-Sept)	29.33 (Jan-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

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
1950	Magnolia scale	Crawlers begin to emerge <a href="#">(National Phenology Network)</a> indicates they may already be starting to emerge)	Feeding on sap

### Bagworm (potentially serious)

We have had very few reports of bagworm (*Thyridopteryx ephemeraeformis*) this summer...until now. In the last two weeks or so, we have been getting a number of reports of bagworms. In some cases, the reports were accompanied by photos of very large populations and very damaged evergreens. Some were damaged to the point where it is unlikely that they will recover.

Bagworms overwinter as eggs inside the female bag (fig. 2). The bag can contain between 300 and 1,000 eggs. The eggs hatch in early summer, and the young larvae suspend from a



Figure 2 bagworm bag on host

silk string and are often “ballooned” by wind to nearby plants. When a suitable host plant is found, larvae begin to form bags over their bodies. The tiny cone-shaped bags are constructed from silk and camouflaged with bits of twigs and foliage from the host plant. Larvae stick their heads and front legs out of the top of the bags to feed and move (fig. 3). The feeding by young larvae results in holes in the foliage of deciduous plants and loss of needles on evergreens. As the larvae grow, they enlarge their bags and feed on the entire leaf, leaving only veins. They move to a sturdy branch, attach the bag with a strong band of silk, and then pupate. By August the larvae have matured and are 1 to 1-1/2 inches in length, and their completed bags are 1-1/2 to 2-1/2 inches long. About four weeks later, adult males emerge and mate with the sedentary females. The female, which has no eyes, wings, legs, antennae, or functional mouthparts, lays eggs and is then mummified around the egg mass within the bag.



Figure 3 Bagworm larva peeking out of the bag

Bagworm populations can build rapidly and quickly defoliate their hosts. This is the situation we are seeing in some places this year. Healthy deciduous trees can usually tolerate consecutive years of severe defoliation before they are killed. Evergreen trees, on the other hand, can be killed by just one year of severe defoliation. Bagworm larvae feed on over 120 species of trees and shrubs. Their bags are made of the foliage they're feeding on, so a bagworm feeding on pine will have pine needles in its bag, while a bagworm feeding on a crabapple will have pieces of crabapple leaves decorating its bag.

**Management:** It is too late in the season to consider using insecticides. Once the larvae stop moving around and attach the bag to the stem, they are safe from insecticides. Handpicking bags from now until early spring will help control populations for next year. If they can't hatch, they can't feed, so this is more effective than people think. Remove as many of the bags as possible.

Good websites:

<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/bagworms/#overview>  
<http://ento.psu.edu/extension/factsheets/bagworm>

## Magnolia scale update (potentially serious)

Magnolia scale (*Neolecanium cornuparvum*) has been an ongoing problem in northern Illinois for a number of years now and this year is no different. It is worth reviewing this pest as the crawlers are expected out any day now (and may already be out in some areas).

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.

Initially, magnolia scales 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 (fig. 4), in late August or early September. This year it is more likely they will be out by mid-August. Some universities report that the beginning of emergence should start around 1900 to 1950 GDD. We already have 1908 GDD. 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 it must come in contact with them to destroy them. Once crawlers begin to emerge, you may want to wait a few days for a good number of them to emerge, so you can kill as many as possible with your spray. Because they will not all emerge at once, it would be wise to check for live crawlers and be prepared to spray a second time 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, trying to kill the adults.

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



Figure 4 Magnolia scale crawlers (arrow)

### Milkweed beetles and bugs (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. We have not had many reports of these unwanted guests, but I will bet they are out there already. I am talking about milkweed bugs and milkweed beetles.



Figure 5 Adult milkweed beetle

Red milkweed beetles (*Tetraopes tetrophthalmus*) are 1/2 to 3/4 inch-long and rosy red with black spots and long black antennae (fig. 5). Adults feed on milkweed leaves; while in the larval stage they bore into and feed on milkweed stems and roots. 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 (fig. 6). Young bugs (nymphs) also have these colors, but lack fully developed wings. 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 6 Adult milkweed bug

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

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

### Grubs in the lawn (potentially serious)

We are getting to the time of year when homeowners start thinking about grubs (whether or not that actually have them). It is worthwhile to review the problem as it seems like there is always some wrong information floating around out there. White grubs are the larvae of several beetles including Japanese beetles, chafers and June beetles. While eggs of these species will hatch into grubs at various times in late summer, most of the damage begins around early August. The grubs will continue to feed on turf roots until the weather gets cold. Then they will go deeper into the soil to spend the winter. When spring returns, the grubs will come back to the surface, but they are older and tougher and insecticides are less successful.

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. We have had

a lot of hot, dry weather, and that can cause lawns to turn brown. We are also seeing some fungal diseases in lawns that can lead to browning. 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 of you who are watering may be more likely to deal with grubs this year.

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. Also, we have had fewer reports of Japanese beetles this year, so the grub population may be down.

If you plan to manage grubs 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 insecticides, like trichlorfon and carbaryl, are applied to the lawn when young grubs are active (August and September). Imidacloprid can be applied once in mid-July in areas where adult beetles were numerous. Another product, known as chlorantraniliprole, is applied in spring to kill new grubs that hatch out in late July. It will not kill grubs present in spring. Usually, one treatment of any of these is adequate when followed up with good turf management. (Insecticide information from University of Illinois and Michigan State University). The bottom line is to read the product label carefully to see which ingredient the product contains and exactly when it should be used. Timing is important. Most of these products need to be watered in to be effective. Check the label for this information as well.

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 in colder, northern states. Also, if you have grubs that come from another type of beetle, it won't work on them at all.

There are also products that contain *Bacillus thuringiensis* var. *galleriae*, a naturally occurring bacterium. [Clemson Cooperative Extension](#) indicates that "research has shown control to be marginal".

Good website:

[https://www.canr.msu.edu/news/how\\_to\\_choose\\_and\\_when\\_to\\_apply\\_grub\\_control\\_products\\_for\\_your\\_lawn](https://www.canr.msu.edu/news/how_to_choose_and_when_to_apply_grub_control_products_for_your_lawn)

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### ***Bartlett Tree Experts, Plant Clinic sponsor***

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.

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.

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 online at <https://mortonarb.org/about-arboretum/plant-health-care-report/>

For pest and disease questions, please contact the Plant Clinic. The Plant Clinic building is now open to walk-in customers, Monday through Friday 10 am to 4 p.m. You can still contact the Plant Clinic via email at [plantclinic@mortonarb.org](mailto:plantclinic@mortonarb.org). Emails will be answered during business hours Monday through Friday. Plant Clinic can also be reached by phone (630-719-2424), Monday thru Friday 10 am to 4 pm. Inquiries or comments about the PHCR should be directed to Sharon Yiesla at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org).

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## 2021 Plant Health Care Report Index



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, Cankers.... 1 means that it was discussed in the PHC report 2021.01 or the newsletter dated April 2, 2021. 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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