

# Plant Health Care Report

Scouting Report of The Morton Arboretum



THE  
CHAMPION  
of TREES

Aug 5, 2022

Issue 2022.10

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. 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](mailto: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?

Rose of Sharon (*Hibiscus syriacus*) is in flower (fig 1)

### Accumulated Growing Degree Days (Base 50): 1974 (as of Aug 4)

#### Insects

- Spotted lanternfly in Iowa
- Milkweed tussock moth
- Galls, part 3
- Tobacco budworm
- Chrysanthemum lacebug

#### Diseases

- Septoria leaf spot on dogwood
- Aster yellows or eriophyid mites??

#### Miscellaneous

- Drought.gov
- Proper watering: sprinklers and watering by hand

#### Upcoming Education

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



Figure 1 Rose of Sharon

## 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 8/4//2022*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	86	95.6	84.4
4-inch, bare soil	87	88.8	81.2
4-inch, under sod	80.9	86.2	83.8
8-inch, under sod	76.4	81.3	82.1

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

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

As of Aug 4, we have 1974 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2021) for this date is 1811 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 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 8/4/22	GDD as of 8/5/21	GDD as of 8/6/15	GDD as of 8/7/14
Carbondale, IL*	2762	2515	2759	2517
Champaign, IL*	2282	2162	2320	2162
Chicago Botanic Garden**	1950	No report	1616	1561.5 (8/6)
Glencoe*	1520	1542	No report	No report
Chicago O'Hare*	2110	2107	2012	1982
Kankakee, IL*	2027	2013	2018	1964
Lisle, IL*	2130	2102	No report	No report
The Morton Arboretum	1974	1908	1738	1701.5
Quincy, IL*	2397	2301	2444	2311
Rockford, IL*	1890	1936	1719	1704
Springfield, IL*	2355	2241	2426	2242
Waukegan, IL* (60087)	1825	1896	1674	1714
Waukegan, IL (60085)	1927	1992	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://gdtracker.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	.13 (as of 8/4)	2.12	3.78
Sept			
Year to date	25.81 as of 8/4	19.69 (Jan thru Aug)	25.95 (Jan thru Aug)

### 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

#### Spotted lanternfly in Iowa (serious)

Dr. Fredric Miller has passed on an [alert](#) to us indicating that spotted lanternfly has been found in Iowa. This is a serious pest of many plants. For more information see the links below. To report a sighting of this pest, contact your state Department of Agriculture. In Illinois, that would be Scott Shirmer (email: [Scott.Shirmer@illinois.gov](mailto:Scott.Shirmer@illinois.gov))

<https://www.aphis.usda.gov/aphis/resources/pests-diseases/hungry-pests/the-threat/spotted-lanternfly/spotted-lanternfly>

[https://www.agriculture.pa.gov/Plants\\_Land\\_Water/PlantIndustry/Entomology/spotted\\_lanternfly/SpottedLanternflyAlert/Pages/default.aspx](https://www.agriculture.pa.gov/Plants_Land_Water/PlantIndustry/Entomology/spotted_lanternfly/SpottedLanternflyAlert/Pages/default.aspx)

<https://nysipm.cornell.edu/environment/invasive-species-exotic-pests/spotted-lanternfly/spotted-lanternfly-ipm/biology-life-cycle-identification-and-dispersion/>

### Milkweed tussock moth (minor)

Milkweed tussock moth caterpillars (*Euchaetes egle*) were found feeding on the leaves of butterfly milkweed (*Asclepias tuberosa*). They have black and white “hair pencils” along their front, back, and sides and six pairs of thick yellow and black tufts of hair along their middle and grow up to an inch long (fig. 2). The female moth lays eggs on the undersides of milkweed leaves in early summer. When the tiny caterpillars hatch, they are cream-colored with a slightly bristly look. At this point, they feed in colonies (fig. 3). As they grow, they molt and change size and color until they are fully covered in tufts of black, orange and white hairs. This coloring serves, as it does for monarch butterflies, to tell predators that the caterpillars are poisonous from feeding on the milkweed.



Figure 2 Late season milkweed tussock moth larva

The caterpillars are late season feeders on all kinds of milkweeds. They feed on the leaves, often leaving the major veins that are full of the glue-like sap. They may defoliate patches of milkweed, but there is no long-term harm to the plant.



Figure 3 First instar larvae

**Management:** Since the damage occurs in late season, management may not be needed.

### Galls, part 3 (minor)

This has been a slower year for galls, but we are still seeing some of our old favorites. We are featuring a nice selection of them for you this week. We write about these just so you know what you are looking at. Most galls are very minor and we don’t need to treat for them.

Our native buttonbush (*Cephalanthus occidentalis*) is showing a weird gall (fig. 4) that we have seen in previous years. Buttonbush galls, caused by a mite, are small, bumpy galls. They sometimes show up in large numbers, giving the whole shrub an unattractive look, but doing very little real damage.



Figure 4 Buttonbush gall

Oak apple gall, true to its name, is found on oaks. This gall is caused by a cynipid wasp. The galls are globe-shaped, and filled with a spongy mass, and they are found on the leaves (fig. 5). These galls can be an inch or so in diameter when fully developed.



Figure 5 Oak apple gall

We are seeing mite galls on fragrant sumac (*Rhus aromatica* 'Gro-low'). These are caused by eriophyid mites and look like small round bumps in the leaves (fig. 6). Sometimes the population is heavy and makes the plant look odd, but they do not do any long-term harm to the shrub.



Figure 6 Galls on sumac

### **Tobacco budworm (potentially serious)**

We have had a couple of reports that tobacco budworm (*Heliothis virescens*) is attacking petunias. Besides petunias, this caterpillar also favors geraniums, chrysanthemums, roses, flowering tobacco and other flowering plants.

In southern states, the pupae overwinter in the soil. Hard freezes may prevent this in more northern states. In colder climates, the moths may fly up from the south in the summer. The moths are light colored with wavy bands on their wings. Eggs are laid on flower buds and foliage. In a few days, the young caterpillars emerge and begin to feed on the buds. They may occasionally feed on leaves. The caterpillars can vary widely in color from green or red to almost black. There are often stripes or bands on the caterpillars. They will feed for about 3 weeks or so, doing a great deal of damage. Then they will drop to the soil to pupate.

**Management:** If the pest is noticed early, the caterpillars can be handpicked. For larger populations, or for areas with a lot of host plants, an insecticide may be needed. [University of Minnesota Extension](https://extension.umn.edu/yield-loss-and-plant-damage/tobacco-budworm) reports that *Bacillus thuringiensis* may not be fully effective, since the caterpillars are often eating into the bud and the *Bt* is on the surface of the bud. The caterpillar may not be able to ingest enough to kill it.

Good websites: <https://extension.umn.edu/yield-loss-and-plant-damage/tobacco-budworm>  
<https://extension.colostate.edu/topic-areas/insects/tobacco-geranium-budworm-5-581/>

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

From time to time we see lace bugs on trees, like sycamore and oak. Last year we had 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. 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 may be 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 website: <https://blogs.k-state.edu/kansasbugs/2016/06/29/lace-bugs-nothing-to-worry-about/>

## **Pest Updates: Diseases**

### ***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 (fig. 7) with pale centers, 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.



Figure 7 *Septoria* leaf spot on dogwood

**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

## Aster yellows (or not?) (Potentially serious)

Do your coneflowers suddenly seem deformed into weird shapes? It may be aster yellows. This disease was once thought to be caused by a virus, but the causal organism has been reclassified as a phytoplasma. It can affect a wide range of flowers and vegetables, around 300 species. It is common in members of the aster (daisy) family, like marigolds, zinnias and mums. We mostly

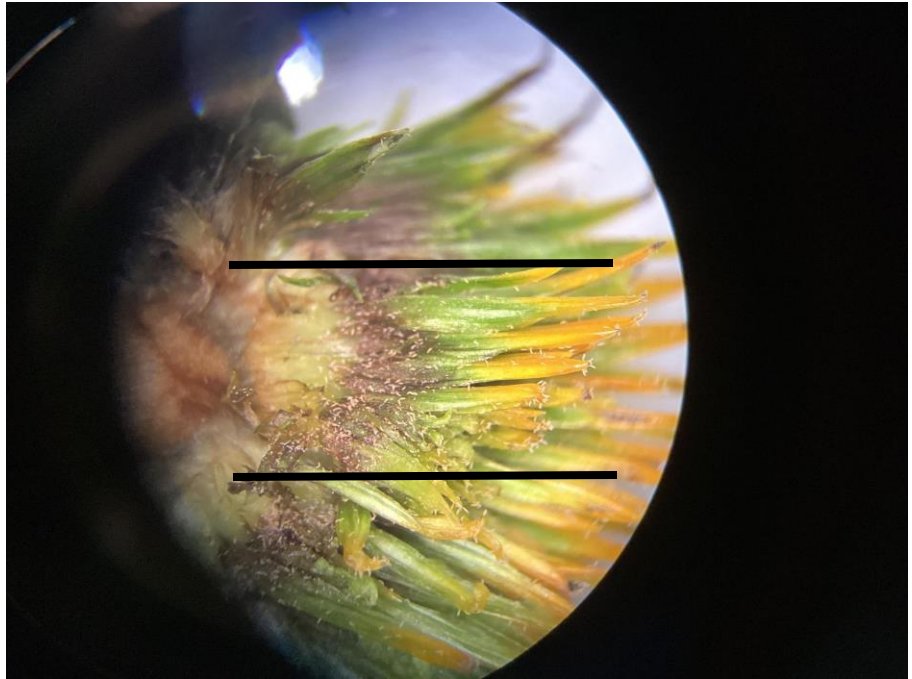


Figure 8 Eriophyid mites in aster (mostly in between lines (photo: Dr. Stephanie Adams)

see it on purple coneflower (*Echinacea purpurea*). Aster yellows causes strange, deformed growth of the flowers, foliage, and sometimes roots (seen in carrots). Purple coneflowers are showing floral deformities: stunted and/or green petals, completely deformed flowers poking out of the damaged originals. The disease organism is transmitted by leafhoppers, which are sap feeding insects. They spread the organism when they feed on the host.



Figure 9 Aster Yellows (photo: Heather Prince)

There is also an eriophyid mite that can cause similar symptoms. Do we care about the cause of the damage? Yes. If it is aster yellows, you may have to dig up the plant and destroy it. If you can find the mites in the flower, then removing infested flowers or cutting the plant down to the ground in the fall and getting rid of the debris may be all that is needed. Dr. Stephanie Adams has provided us with a close up of the mites (elongated white flecks) within the flower head (fig. 8)

So how can we tell who is who? Ohio State reports that when aster yellows is the culprit, the distorted flower parts tend to be green in color (fig. 9), but when mites are involved, the distorted flower parts maintain their normal color (fig. 10). Mites will affect only the flowers while aster yellows can affect other parts of the plant.

**Management:** There is no cure or treatment for aster yellows. Infected plants should be removed from the garden to prevent spread to other plants by the leafhoppers. Do not compost the plants. Manage the mites by removing infested flowers. Cut down and remove plants in the fall.



Figure 10 Eriophyid mite damage (photo: Dr. Stephanie Adams)

## **Miscellaneous**

### **Drought.gov**

Drought seems to be a very common occurrence these days. There is a website that addresses everything drought related. It is [drought.gov](http://drought.gov) and is run by National Oceanic and Atmospheric Administration's (NOAA's) National Integrated Drought Information System (NIDIS).

### **Proper watering: sprinklers and watering by hand**

This is the third article in our series about watering. We do want to water our plants, but water is a very precious commodity, so we want to use it wisely. We want to be 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 the use of sprinklers and hand watering. Remember that we want to focus on watering deeply and infrequently. This is important, no matter which watering device we use. Get to know the watering device, how it delivers water and, most importantly, how quickly it delivers that water.

Let's talk about sprinklers first. This includes lawn sprinklers that can be placed in different locations on the lawn or in the garden, as well as permanent in-ground sprinkler systems. Both can be useful tools for watering, but they do have to be used correctly. Since sprinkler systems throw water up into the air, there is potential loss of water to evaporation. In some situations (high winds and/or day air), this can be a substantial loss. If water pressure is high, water may be delivered faster than the soil can accept it. That can lead to runoff and loss of water into storm drains. Improper placement of sprinkler heads can send water off-target, landing on driveways and streets, instead of planted areas.



To combat these problems, be sure that the sprinklers are placed so that they water the landscape and lawn. Avoid turning the water pressure up too much. Observing the sprinkler system while it is running can help evaluate if the water is going where it should. Use the sprinkler when winds speeds are lower, to reduce loss to evaporation. When using a system that is on a timer, turn it off on days when rain is falling and water is not needed.

In addition to turning the system off on rainy days, also take the time to have the timer set properly. A number of Plant Clinic clients indicate that their systems run about 15 minutes per zone, every second or third day. That is not going to provide the deep watering our plants need and may actually be wasting water. Having the sprinkler run for 15 minutes may not wet the soil deeply at all and certainly will not provide the suggested one inch on water. The old-fashioned method of putting a can out to collect water still works. One of our Plant Clinic volunteers put this method to use a few years ago. She put cans out on the lawn while the sprinkler ran. She reported that it took nearly three hours to get an inch of water in the cans. Set the sprinkler system to run less often (maybe every 5 to 7 days, depending on weather) and for a longer period of time. Using the cans once can give you an idea of how long to run the system at your house. When using a sprinkler of any kind, avoid watering late in the day. Sprinklers provide overhead watering and it does wet the foliage. Foliage that stays wet longer is more at risk for fungal disease.

Now let's turn to watering by hand. Watering by hand can be tedious in large gardens, but it may be exactly right for small gardens or for gardens with a lot of containers. The problem with hand watering is that it can be difficult to know when you have enough. You can't really tell if you have applied an inch of water or not. To get a deep watering in a smaller garden, water the area once, and then go back and water a second time. The first round moistens the soil and will make it easier for water from the second round to really penetrate deeper into the soil. Using a water wand (fig. 11) on the end of the hose allows application of the water down near the base of the plants. This keeps the foliage dry and reduces the potential for fungal diseases.



Figure 11 Water wand (photo: S. Yiesla)

Hand watering can also be efficient when we need to target certain plants, like those in containers, or plants that may need more water than others. Hand watering allows us to direct water exactly where it is needed, and avoid wasting water. This can also be applied to watering trees. A tree can be watered with an open-ended hose, delivering a stream of water about the size of a little finger. Lay the hose on the ground out at the drip line and let it run for 20 to 30 minutes. For a small tree, the hose then can be laid on the ground under the drip line on the other side of the tree and run for an additional 20 to 30 minutes. For medium or large trees, this process can be done at 3 or 4 locations along the drip line.

Watering with any type of device can be efficient. It is important to understand the device and use it properly

### **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://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. 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](mailto:syiesla@mortonarb.org) .

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## 2022 Plant Health Care Report Index



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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 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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