

Plant Health Care Report

Scouting Report of The Morton Arboretum

Aug 20, 2021

Issue 2021.11

For comments regarding PHCR, or to subscribe to email alerts regarding posting of new issues, contact Sharon Yiesla at 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 or by phone at 630-719-2424 (Monday thru Friday, 10 am to 4 pm).

Our season is starting to wind down. There will be one more Growing Degree Day issue published next week. We are extending our season into September this year, so look for two more full issues addressing late season concerns and a look to the future.

Quick View

What indicator plant is in bloom at the Arboretum?

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

Accumulated Growing Degree Days (Base 50): 2248 (as of Aug 19)

Insects/other pests

- Viburnum leaf beetle update
- Mimosa webworm
- Fall galls
- Tobacco budworm

Diseases

- Verticillium wilt

Miscellaneous

- Remontant flowering



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 19, 2021*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	88	88.3	101
4-inch, bare soil	89	96.4	89
4-inch, under sod	81.2	85.2	85.6
8-inch, under sod	76.5	79.6	80.1

* 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 19, we have 2248 base-50 growing degree days (GDD). The historical average (1937-2020) for this date is 2150 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 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 8/19/21	GDD as of 8/20/20	GDD as of 8/20/15	GDD as of 8/21/14
Carbondale, IL*	2902	2896	3111	2886
Champaign, IL*	2521	2469	2670	2472
Chicago Botanic Garden**	No report	2289	1949 (8/19)	1824
Glencoe*	1880	1857	No report	No report
Chicago O'Hare*	2464	2349	2366	2289
Kankakee, IL*	2359	2299	2342	2260
Lisle, IL*	2456	2387	No report	No report
The Morton Arboretum	2248	2279	2066.5	1972.5
Quincy, IL*	2662	2613	2795	2643
Rockford, IL*	2278	2192	2035	1982
Springfield, IL*	2612	2546	2777	2558
Waukegan, IL* (60087)	2229	2070	2002	1992
Waukegan, IL (60085)	2336	2152	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	1.38 (as of (8/19)	1.1	3.802
Year to date	18.95 (as of 8/19)	28.63 (as of 8/31)	26.03 (as of 8/31)

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

Viburnum leaf beetle update (serious)

Viburnum leaf beetle egg-laying sites should be visible soon (or possibly, already visible in some areas). The eggs will hatch into larvae next spring. Viburnum leaf beetles lay their eggs in the tips of viburnum twigs (usually on the underside of the twig). If we clip those twig tips off in fall and winter and destroy them, we can minimize populations for next spring. The egg-laying damage usually occurs in rows. The eggs are laid in holes chewed by the adult. The holes are then covered by a cap of chewed bark. These caps are fairly easy to see as they are a different color than the stem (fig. 2), but they will be SMALL since they are out at the very tips of the stems.



Figure 2 Viburnum leaf beetle egg laying sites

While the thought of cutting out egg-infested twigs may not be appealing, getting rid of an insect at the egg stage can be very effective. Food for thought: the fewer that hatch, the fewer we have to try to kill next spring. That means we can use less insecticide, and that is a good

thing for the environment. Ultimately, it also means less damage to our viburnums. You might say “But I have 20 arrowwood viburnums on my property!” More food for thought: we should probably stop planting 20 of anything. With all the pests on the horizon, it pays to diversify as we install new plants. Even with a number of shrubs, we can still reduce the population for next season. The eggs are there during fall and winter. That gives us about 7 months to find and destroy those twigs. This does work!

Mimosa webworm (minor)

Last year, arborist Chris Mest let us know that mimosa webworm (*Homadaula anisocentra*) was showing up in our area. Chris sent me an email recently to say that it is showing up again in northern Cook County. With changes in weather in the last few years, we are starting to see things that are uncommon here, so it is good to keep scouting. We don't grow mimosa here, but this insect also likes Honey-locust (*Gleditsia triacanthos*), and apparently the cultivar ‘Sunburst’ is a big crowd pleaser for this pest. The relatively mild winters we have had may be helping this pest exist here on a more regular basis.



Figure 3 Webbing and dead leaves caused by mimosa webworm (Photo: Chris Mest)

Mimosa webworm adults are silvery-white to gray moths with black spots (sort of like [dalmatians with wings](#)). The adults emerge from late spring into early summer and mate and lay eggs. Further south in Illinois, there are two generations per year, but we can't verify that we had two here. The first generation is usually a smaller one and the damage may go unnoticed, scattered among the branches of a large tree. The first-generation caterpillars will web together only 2 to 3 leaflets and feed on those leaflets inside the web. They will pupate in the web and, when the moths emerge and mate, they will use the webbing as a place to lay the eggs of the second generation.



Figure 4 Mimosa webworm damage

The second generation is larger and will web together more leaflets (fig. 3), so the problem is much more

obvious, with the webbing being more noticeable, especially when the leaflets inside turn brown (fig. 4). Also, the webbing is filled with frass (insect excrement). When the second generation is ready to pupate, they will do so under loose bark or on nearby buildings, under siding and around windows. Since we are seeing mimosa webworm again this year, it might be a good idea to note trees with the webbed leaves and be watching for them in the same area next year.

Management: This is an occasional pest and at this point, not a highly damaging one in our area, so management is not needed. This will be a pest to watch for the future, especially when we have milder winters.

Good website: <https://www.forestpests.org/vd/8635.html>

Fall galls (minor)

It is turning out to be another busy year for galls. We are featuring a nice selection of late season galls 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.

We have two galls showing up on goldenrod. They are the goldenrod fly gall and the goldenrod bunch gall. The goldenrod fly gall (*Eurosta solidaginis*) shows up as those interesting ball shapes in the goldenrod stem. The gall maker lives inside that round gall and will pupate there in spring. The goldenrod bunch gall is caused by a midge (*Rhopalomyia solidaginis*). The larva of this midge secretes a chemical that stops the goldenrod stem from growing any taller. The leaves keep forming, though. This leads to a bunch of shortened leaves at the end of the stem (fig. 5). Actually, very pretty! This one has been very prevalent this season.



Figure 5 Goldenrod bunch gall

Tobacco budworm (potentially serious)

We have a report from a staff member that tobacco budworm (*Heliothis virescens*) has turned our petunias into a quick meal. 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](#) 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/yard-and-garden-insects/tobacco-budworms>
<https://extension.colostate.edu/topic-areas/insects/tobacco-geranium-budworm-5-581/>

Pest Updates: Diseases

***Verticillium* wilt (serious)**

We have seen a number of trees this year that we suspect may have *Verticillium* wilt.

Verticillium wilt is a fungal disease that affects over 300 herbaceous and woody plants. The disease is caused by many host-specific strains of two soil-borne fungi, *Verticillium albo-atrum* and *V. dahliae*.

Verticillium dahliae is believed to be the predominant species attacking trees in the Midwest. The disease attacks many herbaceous plants as well as woody plants and has both acute and chronic (long-term) symptoms.

This soil-borne fungus remains in the soil in microscopic structures called microsclerotia which can survive in soil for up to 10 years. The fungus often enters the root through wounds. Once inside a root, the fungus colonizes water-conducting tissue (xylem) and gradually spreads upward through the plant. The fungus produces toxins that cause the plant to block off the xylem in an attempt to limit the growth of the fungus. This cuts off the flow of water which results in leaf wilting, yellowing (fig. 6) and browning, early fall color and branch dieback (these are the acute symptoms). The wood beneath the bark is streaked in many species because of the “plugging” response. Typically, when the bark of an affected branch is peeled back, brown streaks (fig. 7) can be seen. These streaks can be seen as soon as



Figure 6 Wilting and dieback due to *Verticillium* wilt

the bark is peeled back. Some plants, like ash and Japanese tree lilac, will not show streaking. In maple, the streaking may look more green.

Verticillium can be a chronic problem, that is, killing a branch or two annually, or it can kill the whole plant in one season. Chronic symptoms may also appear such as: stunted, chlorotic, and deformed foliage; slow growth; and abnormal seed production.

Verticillium can be spread by seeds, tools, and in the soil and roots of new transplants and nursery stock.

Symptoms are not enough to determine that a plant is infected with *Verticillium*. Other problems, such as root damage and environmental stress may cause many of these symptoms. A culture lab, like the [University of Illinois Plant Clinic](http://www.uiuc.edu/PlantClinic/), should be used to verify the diagnosis. In case the tree dies and needs to be replaced, you want to replace it with a tree resistant to the *Verticillium* fungus. These include conifers, crabapple, ginkgo, hackberry, hawthorn and others.

Management: *Verticillium* wilt is difficult to control because of the pathogen's ability to hunker down and survive in the soil with or without a host plant. Fungicides are ineffective in controlling *Verticillium*. The best course of action is sanitation and prevention. Dead branches should be pruned out as they occur to help overall plant vigor. Because the disease can be transmitted via sap, sterilize pruning tools between cuts. Remove chronically infected trees.

Good Websites:

<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/verticillium-wilt/>

<http://extension.cropsciences.illinois.edu/fruitveg/pdfs/1010.pdf>

<http://www.ipm.iastate.edu/ipm/hortnews/1998/3-13-1998/verticil.html>

Miscellaneous

Remontant flowering

Now for something pretty. This time of year, you may notice some of the magnolia trees putting out a few flowers (fig. 8). Since magnolias are spring-flowering trees, what's going on? Actually, it is not unusual for magnolias to do this. Sometimes a few flowers on magnolias get tricked into blooming at the wrong time (we call this remontant



Figure 7 Streaking under bark due to *Verticillium*

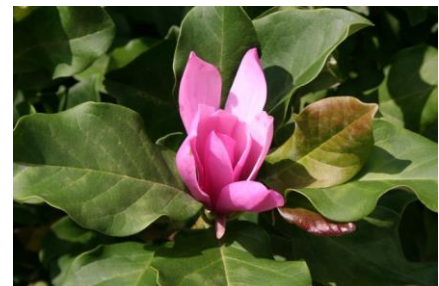


Figure 8 'Ann' magnolia flower in August

flowering). Some magnolias do it every year. Since only a few flowers on each tree are blooming, the remaining flower buds will remain dormant and should bloom at the normal time next spring. While this can be common with certain magnolias, other trees and shrubs also do it from time to time.



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://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 . 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 .

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2021 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, 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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