

Plant Health Care Report

Scouting Report of The Morton Arboretum



THE
CHAMPION
of TREES

June 14, 2024

Issue 2024.6

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. Contact us via email at plantclinic@mortonarb.org or by phone at 630-719-2424 (Monday thru Friday, 10 am to 4pm).

Quick View

What indicator plant is in bloom?

Catalpa (*Catalpa* species) is in full flower (fig. 1)

Accumulated Growing Degree Days (Base 50) at The Morton Arboretum: 772.5 (as of June 13). (GDD updated 9/23/24)

Insects/other pests

- Viburnum leaf beetle update
- Bagworm
- Galls, galls, galls
- Good guys

Diseases

- Witch-hazel blight
- Guignardia on ivy
- Brown rot of stone fruit

Weeds

- Helleborine



Figure 1 Catalpa (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://warm.isws.illinois.edu/warm/soil/> (you will need to set up an account to access data.)

Max. Soil temps For 6/13/2024*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	90.1	88.4	92.7
4-inch, bare soil	90.3	87.6	84.7
4-inch, under sod	75.5	84	78.5
8-inch, under sod	71.5	77.1	77.3

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

Seasonal precipitation

Seasonal precipitation (rain and melted snow) in inches.			
2024 data was updated on 9/20/2024	2024	2023	Historical average (1937-2023)
Jan	3.9	2.85	1.95
Feb	.56	4.88	1.81
Mar	2.64	2.29	2.53
April	4.44	2.23	3.65
May	3.73	.79	4.17
June	2.43 as of 6/13	1.23 (whole month)	4.16 (whole month)
July			
Aug			
Sept			
Year to date	18.26 (thru 6/13)	14.27 (thru June)	18.27 (thru June)

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

As of June 13, we have 772.5 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2023) for this date is 602 GDD₅₀. The table below shows a comparison of GDD in different years. We are comparing the GDD₅₀ reported in this issue with the GDD reported last year, and in 2019 and 2018. These years were selected since publication dates of the issue were within a day or two of each other. Glencoe, and Waukegan (60085) were not used in 2018, so there is 'no report' from those stations.

Location	GDD as of 6/13/2024	GDD as of 6/15/2023	GDD as of 6/13/2019	GDD as of 6/14/2018
Carbondale, IL*	1494	1217	1164	1305
Champaign, IL*	1114	994	903	1130
Chicago Botanic Garden**	729	No report	434	538.5 (6/12)
Glencoe*	470	334	271	No report
Chicago O'Hare*	970	822	608	799
Kankakee, IL*	954	836	707	932
Lisle, IL*	977	837	639	828
The Morton Arboretum	772.5	639.5	521.5	776.5
Quincy, IL*	1205	1053	927	1255
Rockford, IL*	857	762	550	790
Springfield, IL*	1200	1012	938	1226
Waukegan, IL* (60087)	764	651	437	591
Waukegan, IL* (60085)	843	717	490	No report

*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/>

**Thank you to Elizabeth Cullison, Chicago Botanic Garden, for supplying us with this information.

***Data updated 9/23/24

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
700-800	Bagworm	Caterpillars emerging	Chewing foliage
900-1200	Japanese beetle	adults	Chewing foliage; mating and laying eggs
1200-1800	Fall webworm		

Viburnum leaf beetle update (serious)

The viburnum leaf beetle larvae are now likely to be underground pupating. At this point, we can do nothing to manage them. The adults should emerge in early July. The beetles are small (1/3 inch) and brown to golden brown (fig. 2). 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 2 Viburnum leaf beetle

Bagworm (potentially serious)

We are watching for bagworm (*Thyridopteryx ephemeraeformis*), but so far, have no confirmed reports. This insect may be emerging right now, but it can be overlooked because, at this point, it would be very, very small. It might look like a tiny ice cream cone that has been dropped (fig 3). We need to catch them in the early stage of life, if insecticides are to be used. Now is the time to be scouting. In 2021, we did have some reports of heavy populations of bagworm devastating arborvitae. This pest is often on evergreen trees and shrubs, but does not feed on them exclusively. They are also known to attack a variety of deciduous trees.



Figure 3 Very young bagworm

Bagworms overwinter as eggs inside the female bag. The bag can contain between 300 and 1,000 eggs. The eggs hatch in early summer, and the young larvae suspend from a 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. 4). 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 (fig. 5) 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 4 Bagworm larva peeking out of bag

Bagworm populations can build rapidly and quickly defoliate their hosts. 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 an oak tree will have pieces of oak leaves decorating its bag.



Figure 5 bagworm bag

Management: We are in the early stage of development and insecticides may be very effective at this time. Once the larvae stop moving around and attach the bag to the stem, they are safe from insecticides. Handpicking bags from that time 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 later in the season.

Good websites:

<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/bagworms/#overview>

Galls, Galls, Galls (minor)

We feature galls from time to time, just so people get to know what these odd structures are. They are caused by a variety of tiny insects and mites. The feeding of these little critters, stimulates the host plant to grow tissue around them. Thus, the gall is formed. Galls look weird, but the overwhelming majority of them do no long-term harm to the host. We have not reported on many galls so far this year, but this group is starting to get into gear.

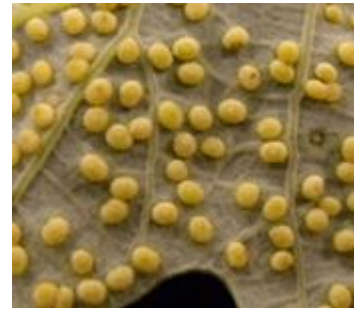


Figure 6 Jumping oak gall

Every year, the oaks have more than their fair share of galls and this year is no different. We have two oak galls to feature in this issue. Jumping oak gall is very prevalent this year. Jumping oak gall is caused by the gall wasp *Neuroterus saltatorius*. They start out looking like small beads on the back of oak leaves (fig. 6). The galls are now starting to pop off and fall to the ground. The activity of the larvae inside will cause the galls to jump around. This is free entertainment from the insect world. A small brown spot remains on the leaf where the gall was once attached. Since no evidence of the gall remains, people assume that the tree has a fungus.



Figure 7 Oak spangles

Oak spangles are another favorite showing up this year. You have to love a name like spangles. They are also caused by a tiny gall wasp (*Neuroterus* species), and when the gall is fully developed, it looks like a little disk stuck on the lower side of the leaf (like spangles on a costume) (fig. 7).

We have reports of spindle galls on linden (*Tilia*). Spindle galls occur on a variety of plant species. The galls are long and thin and protrude out of the upper surfaces of leaves (fig. 8). They are caused by eriophyid mite species.



Figure 8 Spindle gall on linden

Witch-hazel cone gall is showing up on witch-hazel (thus the name!). Witch-hazel cone gall is caused by an aphid. The gall does indeed look like a pointy little cone (fig. 9) emerging from the upper surface of the leaf.



Figure 9 Witch-hazel cone gall

Ash midrib gall is less common and we don't get to report on it very often. One of our scouts managed to find it this year. Just what the ash trees need, one more problem. The maker of this gall is a midge (related to flies). The gall forms along the midrib of some or all of the leaflets, causing the midrib to enlarge significantly (fig. 10).



Figure 10 Ash midrib gall

Good guys

Every once in a while, it pays to stop and think for a minute. It is human nature to see an insect and want to get rid of it. We should rethink that. There are a lot of insects that are harmless. More importantly there are some that help us. This season we have seen a number of ladybug larvae and pupae, so we know that that these beneficial insects are thriving. We have also seen an insect called the mealybug destroyer, which eats mealybug and scale crawlers. This insect is the larvae of a certain species of ladybug (*Cryptolaemus montrouzieri*). Unfortunately, the larva looks a lot like a mealybug and so it often is killed by well-meaning gardeners. We have friends among the insect world. These insects feed on other insects. Sometimes they do wander into our homes and become a nuisance, but when they are outside, they are beneficial to the gardener.

The bottom line is to take a minute to think before you squash or spray an insect. Sometimes they are the good guys. They appreciate it when we temper our use of insecticides. Insecticides can be good tools, but their use can be harmful to our friends, the beneficial insects.

Pest Updates: Diseases

Witch-hazel blight (potentially serious)

We are seeing symptoms of blight on witch-hazel (*Hamamelis* species), caused by the fungus *Phyllosticta hamamelidis*. In the past, we have reported this as a leaf spot or blotch because the primary symptom has been irregular leaf blotches (fig. 11) with very narrow dark-brown margins. The lesions often, but not always, begin at the leaf base and extend upward and outward eventually covering the entire leaf. In some years, it is more of a blight, due to it killing the tip of the twig and all the attached leaves. So far, the infection this year is a blotch on some plants and more of a blight on others. This disease can defoliate witch-hazels when severe.



Figure 11 Witch-hazel blight

Management: Prune branches and give plants ample space to improve air circulation. This fungus overwinters in fallen leaves; therefore rake and destroy leaves to reduce the source of inoculum. Fungicides can be applied in spring when leaves emerge.

***Guignardia* on ivy (minor)**

Boston ivy (*Parthenocissus tricuspidata*) is showing up, infected with a leaf spot caused by *Guignardia bidwellii*. The spot is relatively round with a dark margin (fig. 12). The dark fruiting bodies can also be found in this leaf spot. This disease also affects Virginia creeper (*Parthenocissus quinquefolia*). While this disease is fairly minor on ornamental plants, it also causes black rot of grapes, which is more serious. Due to wet weather in May, the infections on Boston ivy are already well established.



Figure 12 *Guignardia* on Virginia creeper

Management: Removing fallen leaves may help to destroy the overwintering inoculum. On Boston ivy and Virginia creeper, removing badly infected leaves may help. Improving air flow may also help, since the spores are spread and germinate under moist to wet conditions.

Good website: <http://hort.uwex.edu/articles/guignardia-leaf-spot>

Brown rot of stone fruit (serious)

The Plant Clinic at The Morton Arboretum has received a couple of reports of brown rot on cherries. Brown rot is caused by the fungus *Monilinia fructicola* which can infect peaches, plums, cherries, apricots, and other *Prunus* species. The disease is sometimes seen as blossom blight – the browning and sudden collapse of blossoms. The infection can spread into shoots and twigs during the next several weeks resulting in shoot and twig blight (fig. 13). We are seeing the shoot blight already this year. Cankers, which may be accompanied by a gummy ooze at their margins, form on twigs, often causing twig dieback. Infections of fruit start as brown spots that rapidly infect the entire fruit, completely covering it with spores and giving it a fuzzy look. So far, we have not seen fruit infections, but they are likely to be out there as fruit develops and matures. Infected fruits



Figure 13 Shoot blight caused by brown rot

decay and shrivel; some will stay attached to the tree throughout winter while others will fall to the ground. These 'mummies' provide inoculum for the following spring.

Management: Sanitation is crucial to control of brown rot. Prune out active infections immediately during dry weather. Don't forget to disinfect pruning tools. Rake and clean up debris under the tree during the summer to remove fallen leaves and fruit. Prune to promote good air circulation through the tree canopy. Wild or neglected stone fruit trees (e.g., wild plum and cherry) in the area are likely to have the disease and be sources of inoculum that should be removed. Later in the year remove rotted fruit 'mummies' that are persistent, and prune out cankers and infected twigs. If damage is severe, fungicides need to be applied when blossoms first open in early spring.

Good websites: http://ohioline.osu.edu/hyg-fact/3000/pdf/HYG_3009_08.pdf

Pest Updates: Weeds

Helleborine (aggressive)

When is an orchid a bad thing? When it is helleborine (*Epipactus helleborine*), a non-native orchid. The Plant Clinic at The Morton Arboretum has received emails again this season regarding this orchid turned weed. Why is it a weed? It spreads underground very aggressively via fleshy rhizomes. Large patches can develop quickly. Wisconsin lists this as a restricted invasive plant. Helleborine grows up to three feet tall and has a thick stem with dark green leaves that clasp the stem (fig. 14). The leaves are lance-shaped and up to six inches long. The flowers do look like orchids and vary in color, with a mix of green, pink and purple. Numerous flowers are produced on a spike.



Figure 14 Helleborine (Photo: Rob Routledge, Sault College, bugwood.org)

Management: Individual plants may be dug up, but you must be careful to get all of the underground structures or the plant will re-sprout. Chemical management is possible, but can be challenging. [Michigan State](http://www.michiganstate.edu) offers some guidance in this area.

Good website: <https://www.minnesotawildflowers.info/flower/helleborine>



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 Juluia Lamb, 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 2024 are Deb Link, Maureen Livingston, Loraine Miranda, Molly Neustadt and Moira Silverman.

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/>

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Inquiries or comments about the PHCR should be directed to Sharon Yiesla at syiesla@mortonarb.org .

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2024 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 2024.01 or the newsletter dated April 5, 2024. 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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