

Plant Health Care Report

Scouting Report of The Morton Arboretum



THE
CHAMPION
of TREES

April 4, 2025

Issue 2025.1

Welcome to the first issue of the Plant Health Care Report (PHCR) for 2025. My name is Sharon Yiesla. I am on staff at The Morton Arboretum Plant Clinic, and I will be responsible for compiling the newsletter again this year. 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. We are continuing last year's format: full issues alternating with growing degree day (GDD) issues; focus on more serious pests; alerts issued for new major pests. As we did last year we will provide an index that gets updated with each new full issue; a list of insects that might be emerging at the growing degree day range occurring when each full issue is published; comparisons of current growing degree days, base 50 (GDD₅₀) with the same date in past years; a report on rainfall to look not only at the total for the year, but also the distribution of rain from month to month; and soil temperatures across the state.

Quick View

What indicator plant is in bloom at the Arboretum? (see article about indicator plants on page 5)

Cornelian-cherry dogwood (*Cornus mas*) is in early flower (Figure 1). It can serve as an indicator plant for a variety of pests. In early flower (0-30 GDD) it can indicate the time when pine bark aphid is becoming active. In later flowering (50-100 GDD), it can indicate Cooley and Eastern spruce gall adelgid activity.

Accumulated Growing Degree Days (Base 50) at The Morton Arboretum: (unavailable at this time)

Miscellaneous

- Using growing degree days
- What do indicator plants tell us?
- Tools you can use
- Timing use of fungicides
- Crabgrass preventer
- Weather, climate and water

Insects/other pests

- Magnolia scale
- Egg masses and more

Weeds

- *Ficaria verna*



Figure 1 *Cornus mas* in flower

Oak and Elm Pruning

Oak and elm pruning should be finished in most locations where this newsletter is read. Sap and bark beetles, the insects that spread the pathogens that cause oak wilt and Dutch elm disease, are already active. The beetles are attracted to pruning wounds. Historically, we don't prune oaks and elms between mid-April and mid-October, when the beetles are active. This year's up and down temps have changed that. According to the University of Wisconsin Extension's online [Oak wilt thermal model](#), the beetle that can spread oak wilt is active in our region. **Note that this model uses growing degree days base 41, not base 50.**

The bark beetles that can spread Dutch elm disease are likely to be out as well. They generally start to emerge when GDD₅₀ is between 7 and 120. In many years that does occur in mid-April. This year, we are already there.

If you must prune oaks or elms now, seal the pruning cuts immediately.

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.) Crabgrass does not germinate until soil temps are above 55 degrees for 5 to 7 days (use more shallow depth for this). Root growth on trees/shrubs occurs when soil temps are above 45 degrees (use deeper depth).

Max. Soil temps For 4/3/2025*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	52	57.5	63.6
4-inch, bare soil	50.2	57.3	61.8
4-inch, under sod	49.4	56.8	61.4
8-inch, under sod	48	54.6	58.9

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

Seasonal precipitation

Seasonal precipitation (rain and melted snow) in inches.			
	2025	2024	Historical average (1937-2024)
Jan	.97	3.42	1.96
Feb	1.3	.56	1.8
Mar	4.59	3.68	2.55
April	1.09	4.44	3.66
May			
June			
July			
Aug			
Sept			
Year to date	7.95 (thru 4/3)	12. 1(thru April)	9.97 (thru April)

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

The historical average (1937-2024) for this date at The Morton Arboretum is 0 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 in the first issue of last year, 2019 and 2014. 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 2019 and 2014, so there is 'no report' from those stations. Lisle was not used in 2014, so there is 'no report'.

Location	GDD as of 4/3/2025	GDD as of 4/4/2024	GDD as of 4/4/2019	GDD as of 4/3/2014
Carbondale, IL*	230	250	60	72
Champaign, IL*	121	110	18	6
Chicago Botanic Garden**	44.5	No report	4.5 (4/3)	No report
Glencoe*	9	13	No report	No report
Chicago O'Hare*	70	66	6	5
Kankakee, IL*	74	61	9	3
Lisle, IL*	75	70	6	No report
The Morton Arboretum	No report	30.5	.5	0
Quincy, IL*	127	135	21	21
Rockford, IL*	48	37	4	3
Springfield, IL*	136	139	22	19
Waukegan, IL* (60087)	30	37	1	1
Waukegan, IL* (60085)	41	50	No report	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.

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.

Miscellaneous:

Using growing degree days

In every issue of the Plant Health Care Report, we list growing degree days, base 50 (GDD₅₀) accumulated at The Morton Arboretum and other sites throughout Illinois. Here's why we do this. The development of plants, insects and fungi is dependent on heat. Development speeds up as the temperature increases and slows as temperature decreases. Many plants and insects have been studied in regard to this relationship between heat and development. We can anticipate the flowering of a shrub or the emergence of an insect based on how many growing degree days (units of heat, not actual days) have accumulated. We can give this information to our scouts and ask them to look for specific problems based on GDD. This helps to refine the process of scouting. Making those GDDs available to our readers helps them plan for pests and diseases.

Accumulation of GDD can vary quite a bit from year to year, and by tracking that information we can be more accurate than if we just look at the calendar. Here is an example: Eastern tent caterpillars begin to hatch out of their eggs when GDD₅₀ is between 100 and 200. In 2014 we had accumulated 100 GDD by May 9. We often do expect to see this pest in early May, so 2014 was fairly 'average'. In 2012, we had accumulated 100 GDD by March 19 (nearly two months earlier than 'normal'). If we had gone with the calendar method and waited to deal with this pest in May, we would have missed it completely.

GDD days are fairly easy to calculate. We use base 50 and the averaging method of calculation. Add the maximum temperature to the minimum temperature for a day, divide by two to get the average temperature for that day, and subtract 50 (the base number). If the number resulting from this calculation is above zero, then that is the number of degree days for that day. If the result is zero or below, then the number of GDD is zero for that day. This is a very simple method, but there are other methods that utilize computer modeling. They are more precise than the averaging method.

These growing degree days (again, think of them as units of heat if the word "day" confuses you) are cumulative. We count them each day and add them to the total from the previous day. When we have accumulated 100 GDD, we expect certain insects to begin emerging (and certain plants to be in flower). When we get to 500 GDD, there will be different insects emerging and different plants flowering. We use base 50 because 50 degrees F is the temperature at which most plants and pests begin to grow.

Resources: Don Orton's book Coincide

http://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects
http://extension.unh.edu/resources/files/Resource000986_Rep2328.pdf

What do indicator plants tell us?

We always give an indicator plant in each issue of the PHCR. These plants tie in with our use of growing degree days (explained above). The development of both insects and plants is influenced by the accumulation of heat units, or growing degree days (GDD). At a certain accumulation of GDD we can expect certain insects to be present at a certain stage of their life cycle. At that same level of GDD, a particular plant will be in flower. Here is an example: Between 100 and 200 GDD₅₀, we can expect to see Eastern tent caterpillars emerging from their eggs. At that same number of GDD we will also see redbud (*Cercis canadensis*) beginning to flower. The redbud can be used as an indicator plant. Its early flowering stage indicates that we have had enough GDD to cause the Eastern tent caterpillars to hatch out. Now we know when to look for them. The redbud, and other indicator plants, are good visual cues for GDD that are easy to spot in the landscape.

Tools you can use

As we start our seasonal battle to protect our plants, it is a good idea to gather our tools, our online tools that is. For years, we have tapped into Michigan State's [GDD tracker](#) to help us track GDD across the state. The [Illinois State Water Survey](#) website helps us keep tabs on soil temperatures. Let's look at some other online tools that can be very useful.

University of Wisconsin Extension has an online [Oak wilt thermal model](#), which can help determine risk in your location. It tracks the emergence of the beetles that can carry oak wilt. This model can be useful in term of helping us know when the beetles are emerging and the risk is high enough that we should discontinue pruning oaks. **Note that this model uses growing degree days base 41, not base 50.**

NC State, partnering with USDA, has a website called SAFARIS. It has a number of modeling tools including [PestCAST](#), which forecasts the life stages of certain pests using real time weather data from NOAA weather stations.

[USA National Phenology Network](#) (USA-NPN) is a collaborative effort of several groups that forecasts the emergence of various pests and also tracks the status of spring. This site tracks GDD of more than one base number, so check each forecast to see which base is being used.

[EDDMapS](#) (Early detection and Distribution Mapping System) documents the presence of invasive species and the distribution of various pests.

Timing use of fungicides

By the time we write an article on a disease for the Plant Health Care Report, the time to treat has often passed. In the interest of being proactive, let's talk about fungicide applications. Many fungicides are applied as protectants to keep fungi from penetrating into plant tissue.

Often this application process needs to start at the time new foliage is emerging and may require 2 to 3 applications as the leaves continue to emerge. The weather has been very up and down this year, with 2 or 3 warm days, alternating with short, but significant cold spells. Some trees and shrubs are ready to leaf out. A longer warm spell could bring about a quick change. Rainfall is playing a role as well. January and February were fairly dry, but rain is becoming frequent and fungi love moisture. Watch the weather and be prepared.

Crabgrass preventer

If you've been in the hardware stores lately, you might have noticed bags of crabgrass preventer (perhaps as early as February). Does that mean it is time to put them down? Not necessarily. March offered us some up and down temperatures, as well as some nice days, but the time was not right. Now, April is here and we should start planning. We do want to get the crabgrass preventer down before the germination starts, but many of these preventers only last about 60 days, so if you apply in February or March you may not get the most use from it. Crabgrass seed will not germinate until SOIL temperatures are greater than 55 degrees F for 5-7 consecutive days. We are close to that in northern Illinois. In an 'average' year we might be applying crabgrass preventer in mid-April (hopefully a couple of weeks before germination). This year has been anything but average.

Iowa State gives this helpful guideline: "Crabgrass seed germination usually begins ... when redbud trees reach full bloom". Since we want to get our preventer down before germination begins, don't wait for redbud to be in full flower. Watch for the flower buds to be swelling. Do NOT use forsythia as an indicator plant. Forsythia is not reliable as it tends to flower whenever it feels like it. Depending on the weather, it can start to flower any time between December and April.

One last thought on crabgrass. We often get reports in early spring of green clumps of crabgrass established in the lawn. Crabgrass is an annual, so it died with the frost last fall. If you see green clumps in your lawn right now, it is most likely tall fescue.

Weather, climate and water

The old saying goes that if you don't like the weather in the Midwest, wait 10 minutes and it will change. Does it seem more like 5 minutes these days? The environment has become one of the biggest challenges for horticulture. We have always had up and down temperatures in spring and fall, but now we are seeing more extremes and often for a good part of both spring and fall. In the last 10 years, we have had several severely wet springs that lead to root damage. These were often followed by droughty summers. Drought after flooding does not even out the situation. Instead, it potentially adds damage on top of damage.

Environmental problems do not stand alone. The stress they cause leads plants to be more open to attack by diseases and insects. Sometimes we treat for the disease or insect, but forget that we need to try to alleviate the stress that invited them in. We also have to realize that the stress under which our trees and other plants live is not due to just weather (what is happening today), but also to climate (what is happening over the long term). Stress builds up over time, and we are seeing a lot of trees and shrubs struggling due to ten or more years of an ever-changing climate.

We really need to keep all this change in mind, for several reasons:

- Climate does affect the health of our plants. As noted above, a tree may be struggling today because of what has occurred in the environment for the last several years, rather than something that happened this week.
- We can't rely on the calendar entirely for scheduling garden activities. We need to look at the stage of development of our plants, as well as the current and upcoming weather. A lot of the 'rules' of horticulture don't work very well anymore.
- With the number of dry summers we have had recently, we are always talking about watering to keep our trees and other plants healthy. That is important, but so is our water supply. Water is a precious commodity, and we need to use it wisely. Water plants by observed need and not the calendar. Rain does not always come when we want it to, or in the quantity we need. In some years, we may have average to above average rainfall, but when we look at when that rain fell, it might reveal a different picture. We have had a few years when we had excess rainfall in spring, followed by a deficit in the summer and fall months. That makes for water stress over most of the year. So, keep a watch on the rainfall month by month and not just the year's average. For more about watering, look at the [special watering issue](#) we published in June 2023.

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
20-90	Magnolia scale	Overwintering nymphs become active	Feeding on sap
100 (possibly less)	Viburnum leaf beetle	Larvae (may be feeding when leaves are half expanded)	Chewing leaves
100-200	Eastern tent caterpillar	Caterpillars	Chewing leaves
100-200	Pine sawfly	Larvae	Chewing needles
145-200	Spongy moth (formerly gypsy moth)	Caterpillars just hatching	Chewing leaves

Magnolia scale (potentially serious)

Populations of magnolia scale (*Neolecanium cornuparvum*) have been high for the last few years. These insects have sucking mouthparts and extract sap from the host plant's branches and twigs. Badly infested trees are weakened and growth is slowed. When infestations are severe, branch dieback can result, and with repeated severe attacks, trees may decline.

Late last summer into fall, adult females gave birth to live young, called crawlers. The crawlers are tiny, flattened, and vary in color from yellow to reddish-brown. The crawlers settled down on one- to two-year old twigs to feed and remained there through the winter as overwintering first instar nymphs. They are still there (fig. 2) and will soon be (or maybe already are) active again (in terms of moving around and feeding).



Figure 2 Magnolia scale after winter

Management: Check twigs for signs of the tiny nymphs. If they are moving around, they are alive. If they seem dry and fall off easily when you rub them, they are dead. Dead nymphs, means you won't need to treat this spring. It should be noted that adult scales are dead (from old age), but will remain in place. Dead adults will be dry and easy to pick off.

If you find live nymphs, you can treat them before leaves emerge with a dormant oil. Check the label for any temperature restrictions to prevent damage to the plant. These products should be used when the temperatures stay above freezing for a specific number of hours and we are still getting very cold night temperatures. Avoid spraying dormant oil when new emerging tissue is present. Note that some oils are sold as "horticultural oil" or "multi-season oil" rather than dormant oil. These are all basically the same oil, but with two rates or sets of mixing instructions: one for use as a dormant oil and one for use as a summer oil (when foliage is present). Select the right set of mixing instructions for the situation. Insecticidal soaps are also effective against the nymph stage and can be used when foliage is present. The oils and the soap must be sprayed directly on the nymphs.

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

Egg masses and more

Winter and early spring are good times to look for eggs. There is still some time to look for insects in their overwintering stage. The best time to look for egg masses like those of [Eastern tent caterpillar](#), [spongy moth](#) (formerly gypsy moth), [viburnum leaf](#)



Figure 3 Spongy moth egg mass

[beetle](#) and [bagworm](#) is before the season gets going. Look for egg masses now and destroy them to reduce the population for the coming season.

Eastern tent caterpillar egg masses are dark gray to black and are wrapped around twigs that are about the diameter of a pencil. Prune out branches with egg masses attached. Spongy moth egg masses (fig. 3) are buff colored, covered with hairs, and about 1 1/2 inches long. Each female usually lays one egg mass, which could contain as many as 1,000 eggs. Egg masses can be carefully scraped off bark and destroyed before they hatch. Viburnum leaf beetle eggs are laid in the tips of twigs and covered with caps of chewed wood (fig. 4). Clip off the ends of twigs that show the egg laying sites.



Figure 4 Viburnum leaf beetle egg-laying sites

Bagworm eggs spend the winter in the bag that was made by the caterpillar last season. The bags are made from leaves of the host plant (fig. 5) and can be found hanging from branches. Pull the bags off the host plant. Any egg masses that you remove should be destroyed. Don't just drop them on the ground by the host plant.



Figure 5 Bagworm bag

Since we will soon be working on spring clean-up in the garden, this would be a good time to look at groundcover euonymus. If yours is infested with scale insects, prune out heavy infestations now. There are eggs under those overwintering scales, so once again we are getting rid of the pest before the eggs can hatch later this season. Reducing the population now will make insecticides more effective when it is time to treat in summer.

Pest Updates: Weeds

***Ficaria verna* (invasive; classified as an exotic weed in Illinois)**

It is time to be watching for the *Ficaria verna*, an early season invasive plant. We have not received any calls about this plant yet. You may know this plant as fig buttercup, lesser celandine or pilewort. Or maybe you know it by its other scientific name, *Ranunculus ficaria*. Some of those names almost sound friendly, but this is not a plant to invite into your yard.



Figure 6 *Ficaria verna*

Illinois classifies this plant as an exotic weed under the [Illinois Exotic Weed Act](#). The Midwest Invasive Plant Network, on their [invasive plant list](#), shows that four Midwestern states have legislated against this plant and three Midwestern states have the plant on a watch list.

What makes this plant a problem? This low growing, spring-blooming plant is very pretty (fig. 6), but can be quite a spreader. It can grow quickly and crowd out spring wildflowers that grow in moist woodlands. I have even spotted it in some suburban parkways, which are neither moist or wooded, so there is some adaptability here. The time to manage it is often very short, so we want to be ready.

Management: Manage this weed by spraying it with a systemic herbicide. This works best in early spring when the plant is in active growth. These products generally kill just about anything green, so do not get them on any desirable plants. The foliage of this plant may die back in early summer, so treat as soon as you see it growing in your yard. It may take more than one year to get rid of it since there is such a short time to treat and the plant has robust underground tubers. Manual removal of the plant may be sufficient when the population is small.

Good websites:

<https://www.invasive.org/alien/pubs/midatlantic/five.htm>

<https://www.invasiveplantatlas.org/subject.html?sub=3069>



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The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by 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/>

For pest and disease questions, please contact the Plant Clinic. You can contact the Plant Clinic via email at plantclinic@mortonarb.org . Emails will be answered during business hours Monday through Friday.

You can call the Plant Clinic (630-719-2424) or visit in person, Monday thru Friday noon to 4 pm.

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

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2025 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, *Ficaria verna*..... 1 means that it was discussed in the PHCR 2025.01 or the newsletter dated April 4, 2025. 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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