

Plant Health Care Report

Scouting Report of The Morton Arboretum



THE
CHAMPION
of TREES

May 17, 2024

Issue 2024.4

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?

Black locust (*Robinia pseudoacacia*) is in full flower (fig. 1)

Accumulated Growing Degree Days (Base 50) at The Morton Arboretum: 263 (as of May 16).

Insects/other pests

- European pine sawfly update
- Boxwood leafminer update
- Euonymus scale
- Oystershell scale
- Calico scale
- Viburnum crown borer
- Woolly apple aphids on elm

Diseases

- Peach leaf curl
- "Measles" on peony

Weeds

- Poison hemlock
- Butterweed and golden ragwort
- Cleavers (bedstraw)



Figure 1 Black locust (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 5/16/2024*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	69	75.8	81.4
4-inch, bare soil	69.7	70.8	74.6
4-inch, under sod	67.4	70.8	72.1
8-inch, under sod	64	67.5	70.7

* 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	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	2.21 (thru 5/16)	.79	4.17
June			
July			
Aug			
Sept			
Year to date	13.75 (thru 5/16)	13.04 (thru May)	14.11 (thru May)

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

As of May 16, we have 263 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2023) for this date is 170 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 2019 and 2018, so there is 'no report' from those stations.

Location	GDD as of 5/16/2024	GDD as of 5/18/2023	GDD as of 5/16/2019	GDD as of 5/3/2018
Carbondale, IL*	882	655	527	568
Champaign, IL*	550	452	315	437
Chicago Botanic Garden**	314	296	99 (5/15)	No report
Glencoe*	143	100	No report	No report
Chicago O'Hare*	444	351	191	272
Kankakee, IL*	420	355	221	327
Lisle, IL*	447	353	203	284
The Morton Arboretum	263	257	134.5	264
Quincy, IL*	617	517	368	516
Rockford, IL*	366	308	150	263
Springfield, IL*	622	485	350	502
Waukegan, IL* (60087)	316	265	120	184
Waukegan, IL* (60085)	367	299	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.

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
400-600	Bronze birch borer	Larvae hatching out and beginning to enter bark	Tunneling under bark
400-500	Pine needle scale	Crawlers emerging	Feeding on sap
500-700	Euonymus scale	Crawlers emerging	Feeding on sap
500-600	Viburnum crown borer	Caterpillars hatching and entering bark	Tunnel under bark
700-800	Bagworm	Caterpillars emerging	Chewing foliage

European pine sawfly update

We finally have confirmation that European pine sawfly larvae are out. The Plant Clinic at The Morton Arboretum received a photo last week of larval activity on a mugo pine. This week we were shown a live sample with a lot of missing needles, and no larvae. Activity of this pest may be almost over in some areas.

Boxwood leafminer update

Late last week, we received a report from one of our scouts verifying that adult boxwood leafminers are out. This is a little early for their emergence. See the article in the [May 3, 2024](#) issue. The adults look like orange mosquitoes and can be found flying around the host plant.

Euonymus scale... (potentially serious)

Euonymus scale (*Unaspis euonymi*) is one of those insects that we can find all year round. Right now, we are seeing the overwintering adults. Even though we see the adults all season, the young crawlers are out and active for only a short time (and now is the time to look). Many insecticide treatments are targeted at the crawlers when they emerge, which is generally around the early part of June, but is likely to be a bit earlier this year (GDD 500-700). The crawlers are a pale, yellow-orange. Male adult scales are white, and the females are brown (fig. 2) and oyster-shaped. Euonymus scale overwinters as fertilized females on plant stems. Euonymus scale does not produce honeydew.



Figure 2 Euonymus scale adults, Male (white) and female (brown)

Management: On smaller plants, like groundcover euonymus and pachysandra, heavily infested branches may be pruned out to reduce the population. Sprays of insecticide are commonly targeted at the young (crawler stage) of the scale. Systemic products have limited use with armored scale species. Armored scale do not feed in the vascular system where the systemic insecticide is located. Systemic insecticides are most useful and effective on armored scale insects that feed on the foliage because they burst plant cells and extract their content. In contrast, armored scale species that feed only on branches, twigs, and trunks of woody plants avoid direct exposure to systemic insecticides. (Sadof and Neal 1993).

Good website:

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

... and oystershell scale (potentially serious)

Speaking of scale insects that are shaped like oyster shells, that brings us to, you guessed it, oystershell scale (*Lepidosaphes ulmi*). On plants like pachysandra, it may be possible to have both oystershell and euonymus scale at the same time. They can be hard to tell apart. Both scales do have the overall shape of an oyster shell, but the female euonymus scale often tends to be more pear-shaped and a bit flattened. The male euonymus scale is white and elongated. The oystershell scale is closer to really looking like an oyster shell and is usually more convex. There may be some banding on oystershell scale, but it is not always obvious. Like euonymus scale, oystershell scale does not produce honeydew.



Figure 3 Large population of oystershell scale

One of our scouts did bring in a sample of oystershell scale on pachysandra and the crawlers are already out! This scale has a wide host range, and we did see it on some trees and shrubs last year. Populations can get very dense, sometimes to the point where the bark of the branch cannot be seen (fig. 3).

Oystershell scale overwinters as eggs under the female's protective cover. The crawlers emerge just slightly earlier (GDD 300) than those of euonymus scale (GDD 500). Be looking now and if using sprays for crawlers, the time to apply is at hand.

Management: With the emergence of both crawlers so close to one another, it may not matter if you are sure which scale you have on pachysandra, or if you have both. When you spray for one, you may catch both, if you time it right. Careful scouting of plants will be

important. Start looking for crawlers around that GDD 300 mark. Like euonymus scale, oystershell scale is also one of the armored scales and systemics have limited usage (see above).

Good website:

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

Calico scale (minor)

Every year we see a number of common scale insect species, but in the last few years we have started to see some uncommon ones, or ones we consider more southern species. We have a report this week of calico scale (*Eulecanium cerasorum*) adults on the trunk of a magnolia tree. It can attack a variety of trees including crabapple, elm, hackberry, honey locust, maple, pear, redbud, serviceberry, sweetgum and tulip tree.

Calico scale is a soft scale. The adult is black with white markings (fig. 4). There is one generation per year. This species overwinters as partly grown nymphs on branches and bark. As these begin to mature in spring, they get larger, take on their distinctive black and white coloring, and begin to lay eggs. The eggs will hatch, usually around GDD 750 in northern Illinois. After the crawlers emerge, the adult scales die and turn a brown to reddish-brown color. They generally remain attached to the tree, making the population look bigger than it really is. The crawlers will move to the leaves to feed along the veins. They will feed there all summer and move back to twigs and bark prior to leaf drop in the autumn.



Figure 4 Calico scale adults

Unless present in large populations, this can be a relatively minor pest for the host tree. It is often controlled by beneficial insects. One annoying thing, though, is the fact that this species can produce large quantities of honeydew, which drops onto whatever is under the tree. This leads to a sticky mess, and the honeydew also serves as a growth medium for black sooty mold, which can add to the mess.

Management: In low populations, there may be no need for management. Beneficial insects may keep this pest in check. Universities seem to vary on which insecticides may or may not be effective against this pest. Some of their websites are listed here for more information:

<https://bygl.osu.edu/node/1252>

<http://kentcoopextension.blogspot.com/2009/04/landscape-scale-insects-calico-scale.html>

https://www.canr.msu.edu/news/calico_scale_cottony_maple_scale_and_lecanium_scale_species_are_raining_hon

<https://bygl.osu.edu/node/639>

Viburnum crown borer (serious)

The Plant Clinic at The Morton Arboretum is starting to get reports on damage by the viburnum crown borer. Viburnum crown borers (*Synanthedon* sp.) are clearwing moths that lay eggs on the bark or in wounds of viburnums near the soil line. The larvae hatch and tunnel into the cambium from several inches below the soil line to about 18 inches above. Larvae are white and legless with brown heads and eventually grow to $\frac{3}{4}$ inch long. Damage looks like gnarled and scarred stems (fig. 5). Eventually there is dieback of main branches, and the whole plant may die. The insects overwinter as larvae and pupate in spring. The moths usually emerge from infested viburnums at GDD 500 to 600 to lay eggs near wound sites on other viburnums.



Figure 5 Stem damaged by viburnum crown borer

Young plants are especially susceptible. Sometimes plants are able to survive attack as they age. Susceptible species include *Viburnum carlesii* (Korean spice viburnum), *V. lantana* (Wayfaring tree), *V. lentago* (Nannyberry), *V. opulus* (European Cranberrybush Viburnum), *V. opulus* var. *americanum* (formerly *V. trilobum*) (American Cranberrybush Viburnum), and *V. x rhytidophylloides* (hybrid leatherleaf viburnum). Arrowwood viburnum shows some resistance, but is not immune.

Management: Beneficial nematodes (*Heterorhabditis bacteriophora*) can be drenched into the soil in late August when larvae are present. Be sure to keep the soil moist so the nematodes don't dry out. They are living organisms. Chemical control can also be applied when adults are laying eggs. The insecticide should be sprayed on the base of the stems from the ground level to a height of 18 inches.

Good websites: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/viburnum-crown-borers/>

Woolly apple aphids on elm (minor)

Yes, on elms, not apples. Our scouts found woolly apple aphids (*Eriosoma lanigerum*) on 'Valley Forge' American elm (*Ulmus americana* 'Valley Forge'). Woolly aphids differ from regular aphids in that they are covered with a little fluff, giving them a woolly look.

The woolly apple aphid has an interesting story behind it. Back before Dutch elm disease (DED) took down so many of our elms, the woolly apple aphid would use elm trees as an alternate host. On the elm trees, this pest was able to reproduce sexually, while on other hosts (like

apple), reproduction was completed asexually, with no males involved (see this [link](#) for more info on life cycles). Now with more DED resistant cultivars around, our population of elms is up and perhaps the insect is finding that useful.

On elms, the aphid feeding results in leaves that are curled and distorted. You have to unroll the leaves to find the aphids hiding inside (fig. 6). Like other aphids, they produce honeydew. Eventually, a winged form is produced, and this migrates to the other hosts (including apple and hawthorn).



Figure 6 Woolly apple aphids on elm

Management: Control on the elm may not be needed since the population will move on to the other hosts. Because the insects are protected in the curled leaves, insecticide sprays may not come in contact with the insects. There are some predators and parasitoids that can help manage this pest.

Pest Updates: Diseases

Peach leaf curl (potentially serious)

Peach leaf curl is caused by the fungus *Taphrina deformans*. It is related to the fungus that causes oak leaf blister. Common hosts are peach and nectarine (*Prunus* spp.). This fungal disease is most severe when cool, wet weather is prevalent at the same time new leaves are emerging. Our weather has been a bit up and down this year, but we have had enough cool, wet periods. In the last two weeks, the Plant Clinic at The Morton Arboretum has received several emails with photos of peach trees infected with this disease. Young, succulent leaves become puckered and deformed as they develop. The puckered areas turn yellow, pink and red (fig. 7).



Figure 7 Peach leaf curl

Later, as spores are produced, the leaf surfaces will turn gray or have a powdery appearance. Eventually, the leaves turn yellow and fall off. Diseased fruits can become distorted and swollen with discolored areas on the skin. Peach leaf curl generally does not kill the tree, but annual infections may weaken a tree and predispose it to other problems.

Management: The fungus overwinters in buds. Fungicides are only effective when applied in fall after leaf drop or in spring before bud swell. Once the leaves have emerged, fungicides are no longer effective.

Good websites:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/peach-leaf-curl>

<https://extension.psu.edu/peach-disease-peach-leaf-curl>

<https://extension.illinois.edu/blogs/good-growing/2016-06-21-peach-leaf-curl>

Measles on peony (minor)

Leaf blotch has been reported on peony this season. This disease is also known as measles, since the early symptom of the disease is small, red to red-purple spots. Late-season symptoms (fig. 8) are large, circular, dark purple to purple-brown spots on the upper surface of the leaves and corresponding light brown spots on the lower surface of the leaves. The disease is caused by the fungus *Graphiopsis chlorocephala* (formerly known as *Cladosporium paeoniae*, both fun, catchy names).



Figure 8 Measles on peony

Management: Sanitation is important. Dispose of diseased plant parts at the end of the growing season to reduce inoculum. Avoid wetting the foliage during watering. Fungicides are available, but must be used early in the season as new foliage is emerging.

Pest Updates: Weeds

Poison hemlock (dangerous)

The Plant Clinic has already received several reports of poison hemlock (*Conium maculatum*) in home gardens. This weed has been fairly prominent for the last few years, not only in home gardens, but popping up along the side of the road in many areas. Poison hemlock (fig. 9) is a member of the carrot family (which contains both edible and toxic plants, so beware!!). Most members of this family have the same type of



Figure 9 Poison hemlock (photo: S. Yiesla)

umbrella-shaped flower cluster known as an umbel. Because the flower cluster of Queen Anne's lace and the flower cluster of poison hemlock look similar, plants may be incorrectly identified. This can lead to contact with a dangerous plant.

Poison hemlock is a large, non-native plant, often six to ten feet tall. The smooth stem is stout, has a ridged appearance, and is marked with purple spots (fig. 10). The stem is hollow. Leaves are large and very ferny in appearance (fig. 11). Poison hemlock is a biennial plant, which means it will form foliage in the first year and flower and set seed in the second year. Plants in their second year will have the typical white flower cluster (umbel) of the carrot family. Queen Anne's lace has one red floret in the center of its flower cluster, poison hemlock does not.

All parts of the plant are toxic and may lead to death if ingested. The plant's sap may be absorbed through cuts in the skin, so long sleeves and gloves will be needed when handling the plant. Sap can also be absorbed if it comes in contact with mucus membranes (eye or nose).

Management: Plants can be cut down or dug out. This should be done before the plants go to seed and is most easily done when plants are small. Cover your skin during this process. In spring, small, actively growing plants may be treated with an herbicide containing glyphosate.

Good websites: <http://hyg.ipm.illinois.edu/article.php?id=380>
<https://www.extension.purdue.edu/extmedia/fnr/fnr-437-w.pdf>

Butterweed and golden ragwort

Butterweed is showing up already, so can golden ragwort be far behind. These plants stir up that controversy, can a native plant also be a weed? [Butterweed](#) (*Packera glabella*) and [golden ragwort](#) (*Packera aurea*) are close relatives and both are native in Illinois. Butterweed is far



Figure 10 Spotted stem of poison hemlock (photo: S. Yiesla)



Figure 11 Leaves of poison hemlock (photo: S. Yiesla)

more common in the southern half of the state than it is in the Chicago region. Yet, we have had numerous reports of it in the past few years. This plant does well in partial to full sun and is reported to prefer a loamy soil, with moist to wet conditions. It is sometimes sold in garden centers. Butterweed (fig. 12) is actually fairly attractive, with yellow daisy-like flowers, that provide nectar for pollinators. It flowers for 6 to 8 weeks. The leaves are interesting too, being deeply and irregularly cut. Those leaves contain alkaloids which prevent rabbits and deer from feeding on them.



Figure 12 Butterweed

Golden ragwort is a cousin to butterweed and has similar yellow flowers that also provide for pollinators. The basal leaves of this plant are oval to almost rounded, with rounded teeth. Leaves higher on the stem are much smaller, narrower and deeply dissected. The leaves also contain the alkaloids.

Are these plants weeds or wildflowers? This is a decision each person has to make. They are native plants, but every native is not desirable (poison ivy is native, too). Weigh the pros (benefits to pollinators) and cons (potential to colonize too much) of each plant. I have linked the name of each plant to a webpage, so you can gain more information to make that decision. I wanted to present these here since they are showing up so much in our area.

Good websites: https://www.illinoiswildflowers.info/woodland/plants/gold_ragwort.htm
<https://www.illinoiswildflowers.info/wetland/plants/butterweed.htm>
<https://bygl.osu.edu/node/1023>
<https://farmdoc.illinois.edu/field-crop-production/weeds/what-is-that-yellow-flowered-plant.html>

Cleavers (bedstraw) (aggressive)

This has been a weedy spring, most likely a side effect of the mild winter we enjoyed. Garlic mustard and dandelions have been prolific. Now another weed is running rampant. Samples of bedstraw or cleavers (*Galium aparine*) are coming into the plant clinic (and showing up in my yard too!). This annual weed has tiny white flowers (fig. 13) and a slightly sticky surface. It is related to the ground cover sweet woodruff (*Galium odoratum*) but not nearly as welcome as that plant.



Figure 13 Cleavers (photo: S. Yiesla)

Bedstraw has tiny white flowers and is presently flowering and starting to go to seed. Because

the plant is slightly sticky and the stem breaks off very readily, it is easy for this plant to get stuck to animals (and gardeners) and this helps to spread the seeds.

Management: Since this is an annual weed, chemical control is not warranted. The stem breaks easily, so pulling the plant out of the garden may be the best bet. You won't get the root, but with an annual you don't really need to. This plant needs to be pulled now before the seeds are fully ripe.



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/>

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 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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2024 Plant Health Care Report Index



THE
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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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