

Plant Health Care Report

Scouting Report of The Morton Arboretum



THE
CHAMPION
of TREES

May 26, 2023

Issue 2023.5

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). The Plant Clinic is also open to walk-ins, but a [timed entry](#) and payment of entry fee is required for non-members.

The Morton Arboretum welcomes Spencer Campbell as the new Plant Clinic Manager. Spencer has been on staff in the Collections and Facilities Department of The Arboretum since 2014. He began his new duties as Plant Clinic Manager on May 15, 2023. Welcome Spencer!!

Quick View

What indicator plant is in bloom at the Arboretum?

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

Accumulated Growing Degree Days (Base 50) at The Morton Arboretum: 320 (as of May 25).

Insects/other pests

- Viburnum crown borer
- Viburnum leaf beetle
- Aphids on viburnum and other species
- Woolly apple aphids on elm
- Elm leafminer
- Fruitworms, leafhoppers, leaf rollers, etc
- Carpenter bees
- Galls, part 1

Diseases

- Powdery mildew on ninebark
- Oak leaf blister

Miscellaneous

- Cold damage

Weeds

- Creeping bellflower
- Poison hemlock



Figure 1 Black locust

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 5/25/2023*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	83	88.6	84.7
4-inch, bare soil	79.7	78.3	79.4
4-inch, under sod	68.3	75.1	76.7
8-inch, under sod	64.3	70	72.1

* 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 May 25, we have 320 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2022) for this date is 281 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 2022, 2017 and 2016. 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 2017 and 2016, so there is 'no report' from those stations.

Location	GDD as of 5/25/2023	GDD as of 5/26/2022	GDD as of 5/25/2017	GDD as of 5/25/2016
Carbondale, IL*	774	808	949	785
Champaign, IL*	568	570	663	558
Chicago Botanic Garden**	368	349 (5/25)	No report	203 (5/24)
Glencoe*	133	195	No report	No report
Chicago O'Hare*	446	445	394	389
Kankakee, IL*	454	455	482	428
Lisle, IL*	450	453	416	414
The Morton Arboretum	320	405.5	335	287
Quincy, IL*	619	613	751	643
Rockford, IL*	392	358	344	324
Springfield, IL*	592	600	697	601
Waukegan, IL* (60087)	340	338	271	264
Waukegan, IL (60085)	381	377	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

Seasonal precipitation (rain and melted snow) in inches.			
	2023	2022	Historical average (1937-2022)
Jan	2.85	1	1.935
Feb	4.88	2.61	1.775
Mar	2.29	3.88	2.536
April	2.23	3.88	3.667
May	.79 (thru 5/25)	6.1	4.206
June			
July			
Aug			
Sept			
Year to date	13.04 (thru 5/25)	17.47 (thru May)	14.12 (thru May)

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
300-700	Oystershell scale	Crawlers emerging	Feeding on sap
400-600	Bronze birch borer	Larvae hatching out and beginning to enter bark	Tunneling under bark
400-600	Emerald ash borer	Adults beginning to emerge	Mating and laying eggs
400-500	Pine needle scale	Crawlers emerging	Feeding on sap
450	Boxwood leafminer	Adults emerging	Laying eggs
500-700	Euonymus scale	Crawlers emerging	Feeding on sap

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 ¾ inch long. Damage looks like gnarled and scarred stems (fig. 2).



Figure 2 Stem damaged by viburnum crown borer

Eventually there is dieback of stems, and the whole plant may die. The insects overwinter as larvae and pupate in spring. The moths usually emerge from infested viburnums in June to lay eggs near wound sites on other viburnums.

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 rhytidophloides* (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/>

Viburnum leaf beetle (potentially serious)

[Viburnum leaf beetle](#) (*Pyrrhalta viburni*) has become a common problem in the Chicago region. The larvae have been out feeding for a while and are about 1/3 inch now. They may be pale green, pale orange or yellow. They do have a distinctive pattern of black spots along their sides and a row of black dashes running down their backs (fig. 3). At maturity, the larvae are a little less than half an inch long. The larvae chew on the undersides of foliage.

When mature, the larvae crawl down the stems to the ground, usually in mid-June, and pupate in the soil. Adults emerge from the soil around early July and also chew on the leaves. Their feeding damage forms irregular holes in the leaves. The beetles are about ¼ inch long and brown in color. On close inspection, golden hairs can be seen on the wing covers of the adult beetle. The adult beetles will be mating and laying eggs from summer into fall. There is one generation of the beetle each year. Heavy and repeated defoliation by the viburnum leaf beetle can lead to death of the shrubs.



Figure 3 Viburnum leaf beetle larva

Management: Insecticides can be used on the larvae from late April through June when they are feeding. [Michigan State University](http://www.maizecrops.com/extension/2012/04/24/viburnum-leaf-beetle/) suggests treating **larvae** with spinosad, insecticidal soap or chlorantraniliprole. To be effective, spinosad and insecticidal soap must be sprayed on the larvae, which are usually found on the undersides of the leaves. Chlorantraniliprole can be sprayed on the insect or on the plant. Cornell University also suggests a single soil application of imidacloprid in spring to control **adults** this summer. Because imidacloprid is systemic, it can be translocated into the flowers and pose a hazard for pollinators. If previous damage warrants the use of this product, protect pollinators by applying imidacloprid immediately after flowering ends. Other insecticides can be used in summer when the beetles are out. Insecticidal soap is not effective against the adult beetles. If the larvae are successfully controlled in spring, there will be no adults to treat. The larvae do a lot of damage and are easy to kill, so it is worth attacking that stage of the life cycle.

Good websites: <http://www.hort.cornell.edu/vlb/manage.html>
<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/viburnum-leaf-beetle/>
https://www.canr.msu.edu/news/keep_your_eyes_open_for_the_viburnum_leaf_beetles

Aphids on viburnum and other species (minor)

We are starting to see aphids showing up in the landscape. This week we have had a few reports of black aphids on viburnum. Aphids have also been reported on burning bush (*Euonymus alatus*) and honeysuckle vines (*Lonicera* species). There are a number of different species of aphids that vary in color (yellow, green, pink, black), as well as host species. They are all tear-drop shaped (fig. 4) and have two cornicles on the back end (they look like twin tail-pipes). Aphids are small, about 1/16 inch.

These insects suck out sap from the leaves. The feeding often leads to curled or distorted leaves. Uncurling the leaves exposes the insects. Aphids also produce honeydew, which is a sticky substance. Sticky leaves are often noticed before the insects themselves. Aphid damage is generally fairly minor, but they can be vectors for spreading viruses.

Management: Aphids are relatively easy to manage. Some species do not stay with a particular plant for the whole season. By the time the damage is noticed, the insects may have moved on. Aphids tend to feed in groups at the ends of branches. Clipping off those branch ends can get rid of the whole population quickly. Spraying the plant with a strong stream of water from the garden hose may also dislodge much of the population. There are also natural predators, like lady bugs, that will feed on aphids, so avoid insecticides and let the good insects do their job.

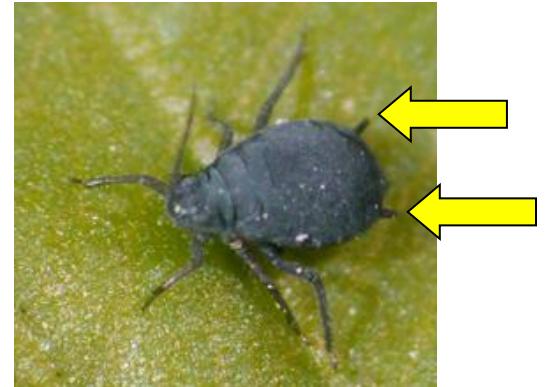


Figure 4 Aphid (arrows mark cornicles)

Good websites: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/aphids/>
<https://extension.missouri.edu/publications/g7274>

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.



Figure 5 Woolly apple aphids on elm

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. 5). Like other aphids, they produce honeydew. On

the sample that the scouts brought in, the aphids were producing little drops of honeydew quite actively. Eventually, a winged form is produced, and this migrates to the other hosts (including apple and hawthorn).

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.

Elm leafminer (minor)

Elm leafminer (*Fenusa ulmi*) has been found on Scots elm (*Ulmus glabra*). Elm leafminer is a type of sawfly. The adults emerge in spring to lay eggs in elm leaf tissues. A week later, the eggs hatch, and young larvae begin to make mines in the leaves. The sawfly larvae will feed on the leaf tissue between the upper and lower epidermis of the leaves. The mines start as elongated brown spots between veins in the leaf and may eventually spread to a large part of the leaf (fig.6). Later, the insects will eat a hole through the leaf epidermis, fall to the ground, and excavate a hole in the soil to overwinter. Severe damage can result in defoliation, but since there is only one generation per year, trees often have time to make another set of leaves. To test a leaf for miners, hold the leaf up to the light. If the insect is still in the leaf, you can see it. You will also be able to see frass (insect feces) which looks like pencil shavings within the mined area. They spend most of their life cycle burrowed about an inch in the ground.



Figure 6 Elm leafminer damage

Management: Because leafminer damage is often cosmetic, insecticides may not be warranted. By the time damage is noticed, it may be too late to treat successfully.

Good websites: <https://bygl.osu.edu/index.php/node/1965>

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

Fruitworms, leafhoppers, leaf rollers, etc. (minor)

Suddenly it seems like every plant you touch has some little critter on it. It is that time of year when we see immature insects in abundance. Luckily, many of them are fairly minor problems. Two species of fruitworm have been found at The Morton Arboretum this week, but there are several species in the area. Fruitworms are often associated with fruit trees, but can attack a wide variety of woody hosts. These caterpillars are green, but each species is variable in its

white markings (fig. 7). These are minor pests that will be present only for a short while (through mid-June or so).

Several species of leafhoppers are feeding on various woody plants. This week our scouts found nymphs (fig. 8) feeding on a variety of woody species. This is just the beginning of a long season of leafhopper activity, as there are thousands of species that infest woody and herbaceous plants. They will be active throughout the growing season.

Leafhoppers have piercing/sucking mouthparts and feed on leaf sap, causing yellow-white stippling and leaf curling. The stippling is similar to spider mite damage but more noticeable. Leafhoppers attack several host trees, with red maples showing the most damage. Feeding on maples produces stunted tree shoots and leaves with brown edges that curl downward. Sometime feeding leads to scorched-looking margins. This is referred to as 'hopper burn'. Leafhoppers can be vectors of several woody plant diseases including elm yellows, aster yellows, and bacterial scorch diseases. Controlling the vector helps to control these diseases.



Figure 7 fruitworm

Most leafhopper species overwinter as eggs in the bark of host plants or among fallen host plant leaves. Eggs hatch in the spring, and several nymphal stages are passed through before the adult stage is reached. Adults are generally less than 3 mm long.



Figure 8 leafhopper nymph

Leaf rollers are also starting to show up. They are aptly named as they roll up the leaf and hide inside. Our scouts found a species of oak leaf roller on the Arboretum grounds. This insect overwinters as eggs on the bark of the tree. The larvae hatch out in May. The larva is green with a black head. They spin loose webbing around expanding leaves to roll them. Then they skeletonize the rolled leaf. In late June, the larvae will pupate within the rolled leaves, emerging as adult moths after 10-14 days. The moths are about ½" long and tan. There is one generation per year.

Management: Management is not always needed for some of these pests. Fruitworms may be managed through handpicking. Also *Bacillus thuringiensis* var. *kurstaki* (Btk) can be used to control young larvae, but is not as effective against older larvae.

For leafhoppers, remove and destroy leaf debris in the fall. Keep trees healthy and vigorous by keeping them mulched and watering during drought periods to lower tree stress. In severe infestations, insecticides can be used and should be applied when hoppers are visible on the foliage but before leaves begin to curl.

While oak leaf roller can be a serious defoliator in forests and stands of oaks, it is seldom a major problem in home landscapes. *Bacillus thurengiensis kurstaki* (*Btk*) can be used in heavy infestations. This is most effective when the caterpillars are young and have not yet rolled the leaves.

Good websites:

<http://bugguide.net/node/view/29931>

Carpenter bees (minor)

Carpenter bees are out. I did not even need to scout. While walking past an old wood fence in my own neighborhood, I suddenly found myself in the middle of a group of about six carpenter bees. Carpenter bees bore into wood trim, outdoor wooden furniture, porch ceilings, dead tree limbs, and any weathered wood (like that fence I passed). They excavate tunnels and can cause damage. They look like bumble bees, but are larger and have a shiny black abdomen. The males cannot sting. Females will only sting if they are agitated. They do not nest in living wood. Carpenter bees have strong jaws and chew ½ inch, round entrance holes on the underside of wood. They then chew horizontal tunnels up to seven inches long. The bees are not actually eating the wood. They only create tunnels for nesting sites. We don't have any good pictures of this insect, so visit the websites listed below to see what carpenter bees look like.

Management: Insecticides can be applied to the tunnel entrances on cool evenings when bees are less active. Do not plug the tunnel entrance. All bees are pollinators, so don't kill them unless necessary.

Good websites: <http://www.ces.ncsu.edu/depts/ent/notes/Urban/carpenterbees.htm>
<https://entomology.ca.uky.edu/ef611>

Galls, part 1

Galls are starting to show up on some of our favorite plants. The vast majority of galls are harmless, but they are included here so you can learn to recognize them in the landscape. No control measures are needed.



Figure 9 Elm sack gall

Elms are showing off the elm sack gall. The elm sack gall (fig. 9) sticks up from the upper leaf surface like a little pouch. It is caused by an aphid.

We have reports of spindle galls on linden (*Tilia*). Spindle galls occur on a variety of plant species. The galls are long and thin (fig. 10) and pop out of the upper surfaces of leaves. They are caused by eriophyid mite species.



Figure 10 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. 11) emerging from the upper surface of the leaf.



Figure 11 Witch-hazel cone gall

Pest Updates: Diseases

Powdery mildew on ninebark (minor to potentially serious)

Powdery mildew has been found on the leaves of ninebark (*Physocarpus opulifolius*). The straight species of ninebark is relatively resistant to powdery mildew, but some of the cultivars can be very susceptible and can sustain quite a bit of damage. University of Connecticut has done some research on this. Go to this [link](#) to see their findings. Hundreds of plant species are susceptible to powdery mildew, but the disease is caused by many different species of fungi which are host specific. This means that the powdery mildew on coralberry will not infect lilacs and so forth.

Powdery mildew appears as a superficial white to gray coating over leaf surfaces, stems, flowers, or fruits of affected plants. Initially, circular powdery white spots appear. These spots coalesce producing a continuous patch of “mildew.” On ninebark, the tips of branches often develop a thick coating of white powder (fig. 12), while other parts of the same plant may show

very few symptoms. Later in the season, fungal fruiting bodies that look like black pepper under a hand lens will appear. Warm days and cool nights, like we have been having lately, favor this fungal disease. The fungi that cause powdery mildew are deterred by water since spores will not germinate on wet leaves. However, the fungus still needs high humidity to infect the plant. Leaf curling and twisting result, and in severe infestations you may see premature defoliation and deformed flower buds. Although unsightly, powdery mildew is usually not fatal in the landscape.



Figure 12 Powdery mildew on ninebark

Management: Infected plant parts should be removed as soon as symptoms appear. Dispose of fallen leaves. Water plants during periods of drought to keep them healthy. Put plants in locations where there is good soil drainage and sufficient sunlight. Provide proper plant spacing for good air circulation. Powdery mildew on some plants can result in significant damage, and fungicides may be needed. To obtain optimum results, spray programs should begin as soon as mildew is detected. In the future, plant mildew-resistant cultivars and species.

Good website: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/powdery-mildews/>

Oak leaf blister (minor)

Oak leaf blister, caused by the fungus *Taphrina caerulescens*, has been found already this season. Leaves develop wrinkled, raised, pale whitish-yellow blisters on their upper surface (fig. 13) and corresponding gray depressions on the lower leaf surface in spring and early summer. Blisters range from 1/10 of an inch to an inch in diameter. As they age and merge, the blisters become thickened and puckered and the leaf may become distorted. Red oak (*Quercus rubra*) is the most susceptible species. Oak leaf blister, like other *Taphrina* diseases, usually develops only during cool, wet springs. Oak leaf blister mostly a cosmetic problem. Infected leaves become distorted and may prematurely drop. The disease usually slows during the summer.



Figure 13 Oak leaf blister

Management: The fungus survives the winter on twigs and bud scales. On oak, leaf blister is more unsightly than harmful, so control is not a high priority.

Good website: <http://plantclinic.cornell.edu/factsheets/oakleafblister.pdf>

Miscellaneous

Cold damage

Why are we talking about cold damage as we approach Memorial Day? Because we had some very cold nights in late April and early May.

We have had reports of cold damage on ginkgo, yellowwood and oaks. Plants that were leafing out at that time may have been damaged. Some of that damage showed up at that time and some of it is showing up now.

At the time of the cold nights established plants that had leafed out, or plants recently purchased in full leaf, suffered damage to those new leaves (fig. 14). Those trees and shrubs won't die, but will lose a few leaves.

Many of these plants will be able to produce new leaves and carry on as usual. Be sure to supply water so that the tree is able to produce those new leaves.



Figure 14 Ginkgo leaves killed by cold

We are also seeing some cold damage developing now. Leaves that were just starting to open at the time of the cold weather may have suffered some damage, but it is not noticeable until the leaf unfurls. This now may be seen as slits or holes in the leaves (fig. 15). It may give the impression that insects are feeding, but the patterns of these slits and holes are often very neat and tidy. The edges of the holes caused by cold damage are often smooth, while insect chewing tends to be more ragged.



Figure 15 holes caused by cold

Pest Updates: Weeds

Creeping bellflower (aggressive)

For the last few years, we have been receiving reports of an annoying weed making itself known in flower gardens and lawns. There are actually two plants that are nearly identical, ladybells (*Adenophora* spp.) and creeping bellflower (*Campunula rapunculoides*). The two plants differ only by a small structure within the flower. Ladybells and creeping bellflower are closely related, but on doing a little research, it seems that the creeping bellflower may be the ‘bad seed’ of this family. It is the one that seems to be overly aggressive. Unfortunately, because the plants are so identical, if a friend shared some ladybells with you from their garden, you may actually have creeping bellflower.



Figure 16 Low-growing mat of creeping bellflower

Young plants have leaves that are heart-shaped to lance-shaped (fig. 16). This innocent looking plant has fleshy roots growing horizontally under the soil. These fleshy roots help to spread the plant and before you know it you have a healthy patch of them in your flower bed. If the plants are not removed, a flowering stalk with purple, nodding, bell shaped flowers will form (fig. 17).

Management: Plants can be removed manually through digging, but any roots left will continue to produce new plants. As new plants develop and are actively growing, spray them with a weed killer containing glyphosate. Glyphosate will be absorbed by the leaves and taken down to kill out the roots. Do not get the glyphosate on desirable plants as it will kill them as well.



Figure 17 Flowers of creeping bellflower

Poison hemlock (dangerous)

The Plant Clinic has already received a report of poison hemlock (*Conium maculatum*) in a home garden. 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. 18) 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 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.



Figure 18 Poison hemlock, first year (Photo: S. Yiesla)

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. 19). The stem is hollow. Leaves are large and very ferny in appearance (fig. 20). 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.



Figure 19 Spotted stem of poison hemlock (Photo: S. Yiesla)

All parts of the plant are toxic and may lead to death if ingested. The plant's oil 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.



Figure 20 Foliage of poison hemlock (Photo: S. Yiesla)

Good websites:

<http://hyg.ipm.illinois.edu/article.php?id=380>

<https://www.extension.purdue.edu/extmedia/fnr/fnr-437-w.pdf>



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 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. Our volunteer scouts for 2023 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://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 by phone (630-719-2424) or visit in person, Monday thru Friday 10 am to 4 pm. On weekends and national holidays, Arboretum members need [a timed entry ticket](#) to enter the Arboretum and visit Plant Clinic in person. Non-members need [a timed ticket](#) every day and must pay the entry fee.

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

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2023 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 2023.01 or the newsletter dated April 7, 2023. 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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Aphids, woolly apple (on elm)	5	Hydrangea leaf-tier	4
Bishop's weed	4	Indicator plants, what they tell us	1
Black knot.....	2	Insects, disease and stress.....	1
Boxwood blight	2	Leafhoppers	5
Boxwood leafminer.....	4	Leafminer, elm.....	5
Boxwood psyllid	4	Leaf rollers	5
Carpenter bees.....	5	Pine bark adelgid	3
Cicadas	1	<i>Rhizosphaera</i> needle cast.....	3
Crabgrass preventer	1, 2	Rust, cedar	4
<i>Cytospora</i> canker	3	Spongy moth.....	2
Deadnettle, purple.....	3	Spotted lanternfly.....	1
<i>Diplodia</i> tip blight.....	2	Tools you can use	1
Eastern tent caterpillar	2, 3	Using growing degree days.....	1
Egg masses and more	1	Viburnum crown borer	5
Elm flea weevil	4	Viburnum leaf beetle.....	2, 5
European pine sawfly.....	2, 3	<i>Volutella</i> blight on pachysandra	3
Euonymus webworm	4	Watch the weather, not the calendar	3
<i>Ficaria verna</i>	2	Weather, climate and water.....	1
Fruitworms.....	5	Winter weather	1
Fungicides, timing	1		
Gall, elm sack	5		
Gall, spindle.....	5		
Gall, witch-hazel cone.....	5		