

Plant Health Care Report

Scouting Report of The Morton Arboretum



THE
CHAMPION
of TREES

April 19, 2024

Issue 2024.2

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 at the Arboretum?

Korean spice viburnum (*Viburnum carlesii*) (fig. 1) is in full flower. This is an indicator plant for juniper webworm. At this time, we might expect the overwintering larvae to become active and feed on junipers. Any plants that were infested last year, should be checked for larval feeding.

Accumulated Growing Degree Days (Base 50) at The Morton Arboretum: 77.5 (as of April 18).

Insects/other pests

- Bark damage on swamp white and bur oaks in Northeastern Illinois
- Periodical cicadas
- Viburnum leaf beetle
- Eastern tent caterpillar
- Spongy moth
- European pine sawfly
- Juniper webworm
- Aphids on viburnum and other species

Diseases

- Cedar-rust
- Boxwood blight or something else?
- Black knot

Weeds

- Creeping bellflower



Figure 1 Korean spice viburnum

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). Cicadas should be emerging when soil temp is 64 degrees at the 8-inch level.

Max. Soil temps For 4/18/2024*	St. Charles reporting station (north)	Champaign reporting station (central)	Carbondale reporting station (south)
2-inch, bare soil	59.9	77.4	78.7
4-inch, bare soil	59.5	69.5	71.6
4-inch, under sod	55.1	66.2	67.6
8-inch, under sod	54.7	61.7	65.6

* 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	2.65 (thru 4/18)	2.23	3.65
May			
June			
July			
Aug			
Sept			
Year to date	9.75 (thru 4/18)	12.25 (thru April)	9.94 (thru April)

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

As of April 18, we have 77.5 base-50 growing degree days (GDD) at The Morton Arboretum. The historical average (1937-2023) for this date is 5.6 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 2018. 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 2018, so there is 'no report' from those stations.

Location	GDD as of 4/18/2024	GDD as of 4/20/2023	GDD as of 4/18/2019	GDD as of 4/19/2018
Carbondale, IL*	440	309	210	132
Champaign, IL*	234	183	110	54
Chicago Botanic Garden**	115.6	143	24.5 (4/17)	No report
Glencoe*	37	60	No report	No report
Chicago O'Hare*	163	158	67	11
Kankakee, IL*	159	146	80	27
Lisle, IL*	167	153	69	12
The Morton Arboretum	77.5	100	40.5	9
Quincy, IL*	278	205	140	68
Rockford, IL*	116	120	51	5
Springfield, IL*	284	207	130	66
Waukegan, IL* (60087)	104	130	32	3
Waukegan, IL* (60085)	130	145	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
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	Elm flea weevil	Overwintering adults	Chewing leaves
100-200	Pine sawfly	Larvae	Chewing needles
145-200	Spongy moth (formerly gypsy moth)	Caterpillars just hatching	Chewing leaves
100-200	Zimmerman pine moth	Larvae emerging from overwintering sites on trunk	Feeding on small branches and tunneling into their bark

Bark damage on swamp white and bur oaks in Northeastern Illinois (Contributed by Dr. Stephanie Adams)

Since February 2024, there have been several reports of unusual bark damage (Figure 2) on 2-10" diameter swamp white oak (*Quercus bicolor*), bur oak (*Q. macrocarpa*), and white oak (*Q. alba*) branches and stems in Northeast and Central Illinois. To date, it has been reported across the seven-county Chicago Region and as far south as Rochester. It is suspected, not confirmed, in southeastern Wisconsin.

The bark damage has been observed from the soil line through the canopy until branches are smaller than 1/3 inch in diameter. In larger trees, the damage is found higher in the canopy.

The insect involved is a 2 mm long x 1 mm wide gall wasp cynipid gall wasp, *Callirhytis flavipes* (Figure 3) that lays its eggs and overwinters in the bark of the trees. Later this year the wasp will create leaf galls (Figure 4). The bark damage is caused by downy woodpeckers and squirrels digging to feed on the wasps.



Figure 2 Bark damage on swamp white oak. Photo credit: Jeff Brink

Monitoring and Management:

Monitoring the trees with bark damage is recommended throughout the growing season to better understand how the trees respond to the wasp and bird activity. Reports from South Dakota State University have indicated that heavily damaged trees can have branch dieback. To manage infested trees, ensure trees are watered appropriately for the species, soil type, and topography. Diagnosing and managing other insect pest, disease, and abiotic issues will reduce tree stress. Focus on ensuring the trees have a healthy and vigorous fine root system that includes feeder roots. Feeder roots are responsible for water and mineral uptake and are necessary for overall preventative tree health management.



Figure 3 Adult gall wasp, *Callirhytis flavipes* (1cm scale)



Figure 4 *Callirhytis flavipes* (sexgen) leaf gall.
Photo credit: Adam Kranz

Citations:

Ball, J. 2015. Pest Update. South Dakota Department of Agriculture. Vol. 13, no. 3.

<https://danr.sd.gov/Conservation/Forestry/ForestHealth/Docs/TreePestAlerts-2015/pest-alert-2015-Feb-4.pdf>. Accessed 4/9/24.

Ball, J. 2019. Woodpeckers Attacking Bur Oaks. South Dakota State University Extension.

<https://extension.sdstate.edu/woodpeckers-attacking-bur-oaks>. Accessed 4/9/24.

Cranshaw, W. 2020. Presentation: Secret Lives of Gall Makers. Pro Green Expo, Denver Colorado. Slides 133, 146-152.

<https://webdoc.agsci.colostate.edu/bspm/InsectInformation/Talks2020/secretlives.pdf>. Accessed 4/9/24.

Periodical cicadas update (minor damage, but very annoying). This article is being repeated. **Update: Plant Clinic has been receiving scattered reports of periodical cicadas being found close to the surface of the soil here in Northern Illinois.**

You have likely heard this by now. The periodical cicadas (fig. 5) will be emerging soon. Northern Illinois will get only one brood, the 17-year cicadas. The other brood, the 13-year cicadas will come out in central and southern Illinois. There has been a lot of hype about this in both the regular media and social media. We should keep in mind that this is a natural



Figure 5 Periodical cicada

phenomenon that has been happening for centuries. The cicadas have survived, the trees have survived and so have the humans. The birds, wildlife, and likely your dog, will be enjoying an amazing feast. The Morton Arboretum does have a full [webpage](#) on the cicadas. Here are a few factoids you might find useful.

- The cicadas will be here for only 4 to 6 weeks, sometime in May and June (timing is weather dependent). This is NOT a season-long event.
- There are options for planting trees this year. Plant this spring and protect the tree, wait until after the cicadas leave to plant, or plant in fall.
- Protect young trees and shrubs with a fine mesh netting (tulle, bird netting or insect netting with mesh no bigger than ¼ inch works well). Cover the tree and be sure to close the bottom of the netting to keep them from getting inside (fig. 6).
- Wrap so there are no gaps to let the cicadas in.
- Consider using the netting like a bag over the plant, bringing the bottom of it to the trunk and tying it in place (snug to keep cicadas out, but not so tight as to strangle the tree, as this is the time of year when the trunk will increase in girth). It could be tied with jute twine or the stretchy tape used by florists (sold as floral tape or plant tape)
- Materials used must allow air and light to get in and must be able to dry out after rain, so NO to burlap, landscape fabric, frost covers and other solid fabrics.
- The smaller branches (under ½ inch diameter) are at risk for damage from egg laying. The trunk will not be damaged
- Insecticides are NOT recommended for cicadas
- Conifers (cone-bearing trees) are not a preferred host.



Figure 6 Shrub protected by netting

Viburnum leaf beetle (potentially serious)

[Viburnum leaf beetle](#) (*Pyrrhalta viburni*) has been a common problem in the Chicago region for several years. We have not yet observed it feeding, but with the warmer weather, it is time to be looking. Its main hosts are arrowwood viburnum (*Viburnum dentatum*) and the American cranberrybush viburnum (*Viburnum opulus* var. *americanum*, formerly *V. trilobum*). Blackhaw viburnum (*Viburnum prunifolium*) is often



Figure 7 Egg sites as seen in winter and early spring

attacked, but the feeding is often less extensive. *Viburnum* species vary in their susceptibility (see [webpage](#) for more details).

This is a pest of concern because it is a serious defoliator of viburnums. Both the larvae and the adult beetle will feed on leaves, so we can see damage all season. The beetle overwinters as eggs in the tips of stems. The egg-laying damage occurs in rows. The eggs are laid in holes chewed by the adult female. The holes are then covered by a cap of chewed bark. These caps are small, but are fairly easy to see as they are a slightly different color than the stem. Figure 7 shows the egg-laying sites in winter and spring before egg hatch. We may still have time to minimize populations by cutting out and destroying these egg-laying sites. You only have to cut out the infested twig tips, not the whole branch. If we can kill a large portion of the population before they hatch, management of this pest will be easier for the rest of the season.



Figure 8 Very young VLB larva below penny

When the larvae do hatch, they are tiny. In fact, they are so small that they are easily overlooked. In figure 8, the little spot next to the penny is a very young viburnum leaf beetle larva. Be looking for them on leaves that are only about half open. The larvae can be found feeding between the veins and doing damage before the leaf has completely expanded. Figure 9 shows a leaf that is only partially expanded, but already being fed upon by newly hatched larvae.



Figure 9 Very young VLB larvae feeding on half-expanded leaf

The larvae, when larger, are easier to see (about 1/3 inch), 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. 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.

Management: From October through April, twigs with eggs in them can be pruned out and destroyed. This is the most effective way to reduce populations and minimize damage and is highly recommended. If the larvae can't hatch, they can't eat. Trim out only the last few inches of each twig where egg-laying sites are visible. You do not need to cut the whole stem. Insecticides can be used on the larvae from late April through June when they are feeding. [Michigan State University](#) 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.

If you plan to add new viburnums to the landscape, don't plant big groups (remember diversity is the way to go). Plant one or two, and this pest will be easier to manage.

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

Eastern tent caterpillar (minor to potentially serious, depending on population)

[Eastern tent caterpillar](#) (*Malacosoma americanum*) has not been spotted yet, but it is a pest that often starts to show up at GDD 100-200, so we will want to be looking for it [very soon](#). When the caterpillars start to emerge, look for small tents beginning to form. They gather at a fork in a tree and build a web or "tent" (fig. 10), but at this point you may need to look carefully to spot it. The caterpillars will ultimately grow to two inches long and are hairy with white stripes down their backs and blue spots and yellow lines (fig. 11). These markings will not be as distinct on younger caterpillars. The caterpillars leave the web to feed during the day, but return at night. Severe



Figure 10 Eastern tent caterpillar tent

defoliation only occurs when populations are high. Eastern tent caterpillars prefer trees in the rose family, such as wild black cherry, apple and crabapple, plum, and peach, but will also feed on birch, willow, maple, oak, and poplar.

Management: The most efficient method for managing the caterpillar is pruning out the nests. This should be done on cloudy or rainy days or at night when the caterpillars are in the nest and not out feeding.



Figure 11 Eastern tent caterpillar

Good website:

<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/eastern-tent-caterpillar/>

Spongy moth (formerly Gypsy moth) (serious)

Spongy moth (*Lymantria dispar dispar*) caterpillars are serious defoliators that feed on over 300 species of trees and shrubs. The caterpillars begin to hatch between GDD 145 and 200. This is another pest that should be out fairly soon. Note that very early instar caterpillars (fig. 12) will not look the same as older caterpillars. As the caterpillars mature, they will develop 5 pairs of blue bumps, followed by 6 pairs of red bumps (fig. 13). Their favorite host trees include oak, crabapple, birch, linden, willow, and hawthorn. Although deciduous trees that are defoliated can put out a new set of leaves, the trees use a lot of resources to do so. Trees that suffer serious defoliation (greater than 50%) several years in a row may die. Severe defoliation also makes trees more susceptible to other problems. Needle-bearing conifers, including spruces and firs, cannot re-foliate and therefore may die after one season of attack.



Figure 12 Early instar spongy moth caterpillar

Once active, the caterpillars will be feeding for a few weeks. They pupate mid-June into early July (GDD₅₀ 900-1200). Each insect pupates for about 10 to 14 days, generally emerging as adults in mid-July through mid-August. The adults will mate and lay eggs, then die.



Figure 13 Late instar spongy moth caterpillar

Management: *Bacillus thuringiensis* var. *kurstaki* (*Btk*) can control young larvae but is not as effective against more mature larvae. Treat while larvae are still relatively small. The first

three instars remain in the tops of trees, so detection may be difficult. Mature larvae (fourth instar and later) feed at night and crawl down from tree tops to hide during the day in protected spots.

Good website:

<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/gypsy-moth/>

European pine sawfly (minor to potentially serious, depending on population)

Another pest to expect around GDD 100-200 is the [European pine sawfly](#) (*Neodiprion sertifer*).

When the larvae come out, they will be very small at first. Look at the ends of branches, as the eggs were laid in last year's needles. If you can't find any larvae, check the needles for unopened eggs. This insect can cause heavy defoliation on red, Scots, mugo, Japanese red, and jack pines. European pine sawflies are interesting to watch. Groups of sawfly larvae rear up their heads simultaneously when disturbed, making the group appear to be one much larger organism (fig. 14). This is a great defense mechanism. When fully grown, the sawflies will be about $\frac{3}{4}$ - 1 inch long and will have several light and dark green stripes on each side of their bodies. Their heads and the three pairs of legs are black. Their mouths are so small after hatching that they can only eat one side of each needle, and therefore the chewed needles look like straw.



Figure 14 European pine sawfly larvae

Eventually as the insects mature, they are able to eat entire needles. The larvae feed on old conifer needles but are finished feeding before current year's needles emerge. They then drop down into the ground to pupate, emerging in September as adults to mate and lay eggs in the current year's needles.

Management: Birds feed on the larvae, and rodents eat the pupae in the soil, but these predators are usually inadequate to control the larvae. Larvae can be removed by hand or washed off with a strong stream of water from the garden hose. They have no hooks on their feet like caterpillars do, so they can't hang on very well. Since European pine sawfly larvae are not caterpillars, *Bacillus thuringiensis* var. *kurstaki* (Btk) does not control them.

Good website:

<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/pine-sawflies/>

Juniper webworm (minor)

Juniper webworm (*Dichomeris marginella*), is one of those pests that shows up from time to time. It has not been reported to us this year yet, but since our indicator plant this week tells us it may be time to look for it, it is included in this issue. This would be the time when the overwintering larvae will become active. If you had this pest last year, start scouting for it now. Infestation is evident by brown needles bound together with silk, primarily in the inner foliage of the juniper (fig. 15). The larvae are small, light brown caterpillars, with dark reddish-brown stripes and dark brown heads. They reach 3/4 inch in length at maturity. The adult moths will emerge in June and lay eggs on current year's growth. Young larvae feed as needleminers and often build silken tubes around their feeding sites. Juniper webworm prefers *Juniperus horizontalis*, *J. depressa*, *J. aurea*, and *Juniperus chinensis*.



Figure 15 Juniper webworm damage

Management: Prune out and discard webbed needle masses now and whenever you see them. Insecticides are most effective against young larvae.

Good website: <https://ag.umass.edu/landscape/publications-resources/insect-mite-guide/dichomeris-marginella>

Aphids on viburnum and other species (minor)

Last year we saw a lot of [aphids](#) in the landscape. This week we have our first report of black aphids on viburnum (found in the Naperville area). This is only one of 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. 16) 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



Figure 16 Aphid (arrows mark cornicles)

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.

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

Pest Updates: Diseases

Cedar rust (unattractive, but generally not life-threatening)

The cedar-rust diseases are starting to be active on the evergreen host (juniper) and the rain we have had this week should push them forward. There are three main rusts on juniper: cedar-apple, cedar-hawthorn, and cedar-quince. Cedar-apple rust and cedar-hawthorn rust both form golf ball-shaped galls on junipers. During spring rains, the gelatinous telial horns (fig. 17) expand from the golf ball-like galls. The sample we saw recently is in the early stage and looks more like figure 18. Spores are released from the horns and are blown to a host in the rose family, e.g., apples, crabapples, and hawthorns. Orange leaf spots subsequently develop on the rose family plants during the summer.

Cedar-quince rust is a bit different. Of the three cedar rust diseases, cedar-quince rust can cause the most damage by infecting fruits and twigs on trees in the rose family, especially hawthorns and serviceberries. Although cedar-quince rust spends part of its life cycle on junipers similar to cedar-apple rust and cedar-hawthorn rust, it does not form galls on the junipers. Cedar-quince rust appears as orange ooze that seems to be leaking directly from the twigs and branches of junipers (fig. 19). We have seen one sample of cedar-quince rust starting to sporulate. It is possible for all three diseases to be present on the same host at one time.



Figure 17 Cedar-apple rust on juniper



Figure 18 Spore horns emerging

Management: The disease is usually not serious on the juniper host. Once the orange jelly horns and ooze stop, the juniper will look fairly normal. No real treatment is needed.

Management is usually more focused on the hosts in the rose family. The best management is to plant resistant varieties of crabapples and hawthorns. Remember, resistance is not the same thing as immunity. Being resistant does not mean that the tree will never get rust. It only means that, in an average year, it is not likely to have much problem with the disease. In a year that is very favorable to the fungus, even resistant trees may show some signs of disease. When considering the purchase of a new crabapple, check with your local nursery about which rust-resistant cultivars they offer. Chemical control for rose family hosts, if used, needs to start as leaves are emerging and when the telial horns are expanding on junipers (both are starting to happen now). Although the rust diseases will cause orange spots on leaves and infect fruit, actual long-term damage is mostly minor, and may not require treatment. Cedar-quince rust can lead to stem swelling on hawthorn, and those swellings can lead to dieback on infected twig tips. Dead branch tips should be pruned out.



Figure 19 Cedar-quince rust on juniper

Good web sites: <https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/cedar-apple-rust/>

<https://extension.umn.edu/plant-diseases/cedar-apple-rust>

Boxwood blight (serious) or something else?

The Plant Clinic at The Morton Arboretum gets questions about boxwood blight every month of the year. Yes, boxwood blight is in northern Illinois and, in some areas, there is quite a bit of it, but not in all areas. The symptoms of boxwood blight can be confused with the symptoms of other boxwood problems. Leaf spots are a symptom of boxwood blight. But leaf miners can also cause leaf spots. Holding a leaf up to the light can reveal the insect larva inside, if the cause is really leaf miner. You can also cut open a spot with a razor or even a pin and, if you find an insect larva inside, the problem is leaf miner.

Another symptom of boxwood blight is quick decline of foliage leading to major defoliation. The leaves quickly turn yellow and fall off, generally starting at the bottom and moving upwards through the plant. In contrast to that, we often see boxwood branches that are dying from

canker diseases. On these branches, all the leaves will turn tan on the diseased branch, but will stay attached to the branch for a long time.

Boxwood blight can also result in stem cankers. These cankers are along the stems and are long and narrow and very dark in color. Older boxwood stems will often develop elongated areas on the stem that are no longer green, but they are normal and usually tan or light brown in color. The canker diseases mentioned in the above paragraph often result in cracked or peeling bark, so they have a different appearance.

The bottom line here is that when a boxwood is doing poorly, it is wise to take some time and examine it carefully to determine the real cause of the decline. Boxwood blight is in the area, but we also have a number of other problems affecting boxwood. The first website link below takes you to a document from West Virginia University Extension that has good photos of boxwood blight and *volutella* canker (blight).

If you need some help sorting out the symptoms on your boxwood, you can call the Plant Clinic at The Morton Arboretum (630-719-2424) or email us photos taken at high resolution (plantclinic@mortonarb.org). The Morton Arboretum Plant Clinic CANNOT accept samples as it is not a diagnostic lab. Samples should be sent to an approved lab. In Illinois that lab is the [University of Illinois Plant Clinic in Champaign-Urbana](#).

Good websites: <https://extension.wvu.edu/lawn-gardening-pests/plant-disease/landscape-tree-disease/boxwood-blight>
<https://www.extension.purdue.edu/extmedia/bp/bp-203-w.pdf>

Black knot (potentially serious)

[Black knot](#) (*Apiosporina morbosa*) is a serious and widespread problem of trees in the genus *Prunus*, especially plum and cherry trees. The Plant Clinic at The Morton Arboretum also receives questions on this problem year-round since it is so prevalent and so easy to spot. Now is the time to look for new abnormal swellings on branches of cherry, peach, plum and related trees. The fungus overwinters in the hard, brittle, rough, black “knots” on twigs and branches of infected trees such as wild black



Figure 20 Black knot showing an old infection on the left, a newer infection in the middle and a new one developing on the right (swelling of stem)

cherries in the woods. These knots may be small or may be several inches long and wrap around the branch. In some instances, the main trunk of the tree can become infected.

In the spring, the fungus produces spores within tiny fruiting bodies on the surface of these knots. The spores are ejected into the air after rainy periods and infect succulent green twigs of the current season's growth. The newly infected twigs and branches swell. The extensive overgrowth of bark and wood is a response to hormones and produces the smaller swellings that we will soon be seeing. Frequently these swellings are not noticed the first year. The swellings become dormant in winter. But the following spring, velvety, green fungal growth will appear, and the knot increases in size. The knots darken and elongate during summer and, by fall, turn hard, brittle, rough and black (fig. 20). The black knots enlarge and can girdle the twig or branch, eventually killing it.

Management: This is a difficult disease to manage. Prune and discard all infected wood during late winter or early spring before growth starts and when new swellings appear. Pruning cuts should be made at least four inches below any swellings or knots. In advanced cases with many knots, pruning out branches may not be feasible as it may destroy the shape of the tree. Fungicides offer some protection against black knot, but are ineffective if pruning and sanitation are ignored. Fungicides are protective, not curative.

Good web site:

<https://mortonarb.org/plant-and-protect/tree-plant-care/plant-care-resources/black-knot/>

<https://extension.umn.edu/plant-diseases/black-knot>

Pest Updates: Weeds

Creeping bellflower (aggressive; considered a restricted invasive plant in Wisconsin)

For the last few years, we have been receiving reports of an annoying weed making itself known in flower gardens and lawns. Those complaints often come later in the season when this weed starts flowering, but we have already received several emails about creeping bellflowers this season. 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



Figure 21 Low growing mat of creeping bellflower

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 her garden, you may actually have creeping bellflower.

Young plants have leaves that are heart-shaped to lance-shaped (fig. 21). 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. 22).

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.



Figure 22 Flowers of creeping bellflower



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, 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 (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



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.

2024.1	April 5
2024.2	April 19
2024.3	May 3
2024.4	May 17
2024.5	May 31
2024.6	June 14
2024.7	June 28

2024.8	July 12
2024.9	July 26
2024.10	August 9
2024.11	August 23
2024.12	September 12
2024.13	September 26

Aphids on viburnum and other species	2
Bark damage of oaks	2
Black knot	2
Boxwood blight or something else	2
Cedar-rust	2
Cicadas, periodical	1, 2
Crabgrass preventer	1
Creeping bellflower	2
Eastern tent caterpillar	2
Egg masses and more	1
European pine sawfly	2
<i>Ficaria verna</i>	1

Fungicides, timing	1
Indicator plants, what they tell us	1
Juniper webworm	2
Purple deadnettle	1
Spongy moth	2
Spotted lanternfly.....	1
Tools you can use	1
Using growing degree days.....	1
Viburnum leaf beetle	2
Weather, climate and water.....	1
Winter weather	1