

Plant Health Care Report

Scouting Report of The Morton Arboretum

July 10, 2020

Issue 2020.8

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. You'll also find a table of accumulated growing degree days (GDD) throughout Illinois, precipitation, and plant phenology indicators to help predict pest emergence. Due to the current COVID-19 situation, we will not be scouting on the Arboretum grounds at this time. We will be including information about pest and disease problems based on questions emailed to The Arboretum's Plant Clinic. We are working remotely, but still able to answer questions via email at plantclinic@mortonarb.org

We are continuing to use last year's format: full issues alternating with growing degree day (GDD) issues; focus on more serious pests; minor pests covered in shorter articles; alerts issued for new major pests. Readers who receive our email blasts that announce the newsletter is posted online will continue to receive them this year. To be added to the email list, please contact me at syiesla@mortonarb.org. Comments or concerns regarding PHCR should be sent to the same email.

Quick View

What indicator plant is in bloom in Dupage County?

Panicked hydrangea (*Hydrangea paniculata*) is beginning to flower (Figure 1)

Accumulated Growing Degree Days (Base 50): 1324 (as of July 9)

Accumulated Growing Degree Days (Base 30): 3554 (as of July 9)

Insects/other pests

- Viburnum leaf beetle update
- Magnolia scale
- Fall webworm
- Head clipping weevils
- Aphids on native plants
- Swamp milkweed leaf beetle
- Galls, Chapter 3

Diseases

- Aster yellows
- Downy leafspot of hickory



Figure 1 Panicked hydrangea (photo: John Hagstrom)

Thank you!

Writing the Plant Health Care Report has been more challenging this year without the regular scouts in the field. As I have mentioned previously, I can glean information from the Plant Clinic email, the scouts looking around their own neighborhoods and observations I can make while driving around the area. I am also receiving help from our Plant Clinic volunteers. They live in many different communities (and counties) in the Chicago region and they are very observant. I put out the call to them to tell me what they are seeing. The response is great and has allowed me to write a fuller and more in-depth newsletter than I thought I would. Never doubt the power of a group of volunteers. Thanks to them for helping and thanks to you for reading.

Degree Days and Weather Information

We are once again offering Lisle readings right above the Arboretum readings. The spread between these two sites shows that temperatures can vary over a short distance, which means growing degree days can be quite variable as well.

As of July 9, we have 1324 base-50 growing degree days (GDD). The historical average (1937-2019) for this date is 1184 GDD₅₀. Since January 1, we have had 26.33 inches of precipitation. Historical average (1937-2019) for precipitation Jan-July is 25.2 inches. We should not assume that we have normal soil moisture at this time. We have excessive heat couple with several days in a row with little to no rain.

Location	B ₅₀ Growing Degree Days Through July 9, 2020
Carbondale, IL*	1763
Champaign, IL*	1481
Glencoe*	880
Chicago Botanic Garden**	1249
Chicago O'Hare*	1334
Kankakee, IL*	1375
Lisle, IL*	1375
The Morton Arboretum	1324
Quincy, IL*	1549
Rockford, IL*	1269
Springfield, IL*	1533
Waukegan, IL* (60087)	1127
Waukegan, IL* (60085)	1180

*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 <http://www.gddtracker.net/>

**Thank you to Chris Henning, Chicago Botanic Garden, for supplying us with this information.

How serious is it?

This year, articles will continue to be marked to indicate the severity of the problem. 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”. Articles that discuss a problem that is seen now, but would be treated with a pesticide at a later date, will be marked “treat later”. Since we will cover weeds from time to time, we’ll make some categories for them as well. “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

Viburnum leaf beetle update (serious)

Viburnum leaf beetle adults are out and chewing. The beetles are small (1/3 inch) and brown to golden brown (fig. 2). They are not easily noticed, but their feeding is. They will pick up where the larvae left off.

Management: Adults can be treated with one of the following insecticides: carbaryl, cyfluthrin, permethrin, resmethrin, malathion or acephate. Insecticidal soap is **not** effective on the adults. Do not spray for the adults until they are present. These insecticides are not preventative. If you used a systemic drench already this year, you should not have to use any additional insecticides.



Figure 2 Adult viburnum leaf beetle

In fall, look for egg-laying sites. The actual eggs are not visible. The eggs are laid in small holes on the ends of twigs and then the holes are capped (fig. 3).

The caps stand out against the bark of the twig, making them easy to see. Cut out the twigs that have the eggs in them, and get them out of the garden completely. This will greatly reduce the number of insects you have next year. If you have a number of shrubs, remember that you have all fall and winter to remove these twigs. Getting them in the egg stage greatly reduces the need to spray next year. We can’t stress enough the importance of this technique.



Figure 3 Egg-laying site

This is the most effective management approach and the least toxic to beneficial insects.

Magnolia scale (potentially serious)

The Plant Clinic at The Morton Arboretum is getting numerous emails from homeowners with magnolia scale (*Neolecanium cornuparvum*) on their magnolia trees. This is an unusual scale

insect because they're so big and easy to see! Magnolia scale has become an ongoing problem in northeastern Illinois. These insects have sucking mouthparts and extract sap from the host plant's branches and twigs. Badly infested branches and twigs are weakened and plant growth is slowed. When infestations are severe, branch dieback can result, and with repeated severe attacks, trees may be killed. As with most soft scale infestations, plant leaves are often covered with sooty mold (fig. 4), a black fungus that grows on the honeydew excreted by the scales. Sooty mold cuts down on photosynthesis because it blocks sunlight from the leaf.



Figure 4 Sooty mold growing on honeydew excreted by magnolia scale

Initially, magnolia scales are shiny, flesh-colored to pinkish brown, and smooth, but they become covered with a white mealy wax over time (fig. 5). This wax is lost at the time crawlers emerge. Adult females give birth to live young, called crawlers, in late August or early September. Some universities report that the beginning of emergence should start around 1900 to 1950 GDD. The crawlers are tiny, flattened, and vary in color from yellow to reddish-brown. The crawlers settle on one- to two-year-old twigs to feed and remain there through the winter.



Figure 5 Magnolia scale adults

Management: Beneficial insects, such as lady beetles, are frequently seen gobbling up crawlers. Fall and spring insecticide sprays (such as insecticidal soap and summer oils) to control crawlers are suggested for large populations. Soil drenches of systemic products containing either imidacloprid or dinotefuran can be used in summer, but will need some time to move through the plant and become effective. It should be noted that adult scale will remain in place even when dead. This often gives the impression that the insecticides did not work. Dead adults will be dry and easy to pick off. Live scale will ooze liquid when crushed.

Good web site: <http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/magnolia-scale-neolecanium-cornuparvum>

Fall webworm (minor)

It is a little on the early side, but I have already received a photo showing fall webworm (*Hyphantria cunea*) at work. This caterpillar is known to feed on more than 100 species of deciduous trees. Preferred hosts include hickory, ash, birch, black walnut, crabapple, elm, maple, oak, and pecan. The caterpillars are pale green to yellow, with black spots, and covered

with long, silky white hairs (fig. 7). There are two races, black-headed and red-headed. The black-headed webworms are supposed to appear about a month earlier than the red-headed race. Full-grown caterpillars reach about one inch in length.

Fall webworms overwinter in the pupal stage in the ground, under loose bark, and in leaf litter. Adult moths appear from late May through August, and females deposit eggs in hair-covered masses on the underside of host leaves. In about one week, eggs hatch into caterpillars that begin to spin a messy web (fig. 6) over the foliage on which they feed. The webs increase in size as caterpillars continue to feed. In about six weeks caterpillars will drop to the ground and pupate. Damage is generally aesthetic since this pest usually eats leaves late in the season, and webs are found in limited areas.



Figure 6 Fall webworm nest

Some people confuse fall webworm and eastern tent caterpillar. How can you tell the difference? Eastern tent caterpillars are spring caterpillars and form thick, neat tents in the angles of branches. Fall webworm caterpillars are active much later in the season and make a messy web at the ends of the branches. Eastern tent caterpillars go outside the tent to feed and return to the tent at night. Fall webworm caterpillars feed in the nest and expand the nest to enclose more leaves to feed on.

Management: Insecticides generally are not warranted. The unsightly webs can be pruned out of small trees. Since these caterpillars stay in the web while feeding, pruning the webs at any time of day will eliminate the caterpillars. Webworms also have many natural enemies including birds, predaceous bugs, and parasitic wasps.



Figure 7 Fall webworm larva

Good website:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/tent-or-web-making-caterpillars>

Head-clipping weevils (minor)

One of our volunteers has reported head-clipping weevils (*Haplorhynchites aeneus*) cutting the flower heads off of *Echinacea* and *Gaillardia*. The adult is a dark-colored weevil (a beetle with a snout). The insect is about ¼ inch long, and the snout is long and curved. The female uses her mouthparts, located at the end of the snout, to cut the flower stalk about 1 inch to 1 ½ inches below the flower head. The flower stalk is not cut all the way through, so the flower head dangles on a thin piece of stem tissue (fig. 8). The dangling flower head is used by the adults for mating and egg-laying.



Figure 8 Flower damaged by the head-clipping weevil

Once the flower head finally breaks off and falls to the ground, the larvae hatch and use the flower head for food. Mature larvae will move into the soil to overwinter, with pupation occurring in late spring.

Management: Good sanitation is the key in managing this pest. Timely removal of hanging flower heads and recently fallen flower heads will reduce the population for next year

Good websites: <https://bygl.osu.edu/node/1087>
<http://entomology.k-state.edu/extension/insect-information/crop-pests/sunflowers/sunflower-headclipping-weevil.html>

Aphids on native plants (minor)

During this growing season we have had scattered reports about aphids on a variety of plants. Most of the populations have been small. Now as we get into late summer, we are getting a lot of reports of large populations of aphids on some of our native plants like common milkweed (*Asclepias syriaca*) and cup plant (*Silphium perfoliatum*). There are a number of different species of aphids that vary in color: yellow, green, pink, black. Right now, we are seeing a lot of the yellow and red species. The yellow ones (*Aphis nerii*) are called oleander aphids or milkweed aphids (fig. 9). The red ones (fig. 10) are most likely a species of *Uroleucon*, which feed on members of the Aster family (to which many of our late season natives belong). They are all tear-drop shaped and have two cornicles on the back end (looks like twin tail-pipes). Aphids are small, about 1/16".

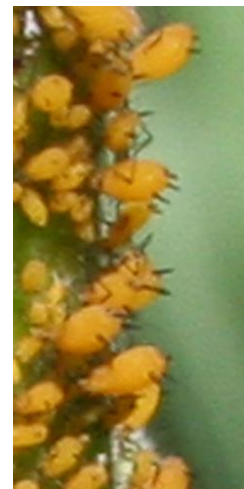


Figure 9 Yellow aphids

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 viruses.



Figure 10 Red aphids

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:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/aphids>

Swamp milkweed leaf beetle (minor)

In a previous issue, we covered the red milkweed beetle and the large and small milkweed bugs. Now one of our volunteers has reported the swamp milkweed leaf beetle (*Labidomera clivicollis*).

Really? How many more critters are going to descend on our poor milkweeds? Well, at least this insect showed up wearing the right outfit. Like so many other insects that visit milkweed, this one is also orange and black (fig. 11). That color combo seems to let some predators know that the insect in question is either poisonous or at least not tasty. The wing covers are orange (or sometimes yellow) with dark spots that can vary in their pattern quite a bit (see <https://bugguide.net/node/view/2970>).



Figure 11 Swamp milkweed leaf beetle

This beetle feeds on the leaves of milkweed, preferring swamp milkweed (*Asclepias incarnata*), but it will eat the common milkweed (*Asclepias syriaca*) as well. It feeds on the leaves, both in the larval and the adult stage. This insect is also an overachiever in the reproduction arena, being able to mate and lay eggs several times in the same season. Eggs are cemented to the leaves of the host plant and later hatch into larvae. On the bright side (for us), the larvae can be cannibals, eating eggs and even smaller larvae of their own species. This pest also has a number of predators, including stink bugs, spiders, and certain flies and damsel bugs.

Management: Since this insect does have some natural predators, hand picking adults may be sufficient in most years. Adults will overwinter in debris nearby, so good cleanup of garden debris may be beneficial.

Good websites: <https://uwm.edu/field-station/swamp-milkweed-leaf-beetle/>
<https://www.saveourmonarchs.org/blog/milkweed-ecosystems-101>

Galls, Chapter 3 (minor)

This has been a gall-filled summer, and here are a few of the common ones that we have been seeing. We present these here just so you know what these weird things are. They are very minor and generally don't need to be managed.



Figure 12 Hedgehog gall

As usual, the oaks have a number of galls this year. The hedgehog gall was reported to us recently. Hedgehog galls (fig. 12) are produced by the cynipid wasp *Acraspis erinacei*. The galls range in size from 1/4 to 1/2 inch in diameter and are a yellow and red color. They are actually attractive little fellas!

Witch-hazel cone gall (fig. 13) 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 emerging from the upper surface of the leaf.



Figure 13 Witch-hazel cone gall

We also received a photo of erineum gall (fig. 14) on birch. Erineum galls look like velvety patches (often red or white) and are caused by eriophyid mites. On birch, they are usually a very pretty rosy red. The galls are found on the underside of the leaves, while the upper surfaces show slight disfiguring due to feeding damage. Erineum galls are found on several plant species including maples, beech, and birch, even though the mites are host specific.



Figure 14 Erineum gall

Pest Updates: Diseases

Aster yellows (or not?) (Potentially serious)

Do your coneflowers suddenly seem deformed into weird shapes? It may be aster yellows.

This disease was once thought to be caused by a virus, but the causal organism has been reclassified as a phytoplasma. It can affect a wide range of flowers and vegetables, around 300 species. It is common in members of the aster (daisy) family, like marigolds, zinnias and mums. We mostly see it on purple coneflower (*Echinacea purpurea*). Aster yellows causes strange, deformed growth of the flowers, foliage, and sometimes roots (seen in carrots). Purple coneflowers are showing floral deformities: stunted and/or green petals, completely deformed flower heads, or secondary deformed flower heads poking out of the damaged originals. The disease organism is transmitted by leafhoppers, which are sap feeding insects. They spread the organism when they feed on the host.



Figure 15 Aster yellows (photo: Heather Prince)

There is also an eriophyid mite that can cause similar symptoms. Do we care about the cause of the damage? Yes. If it is aster yellows, you may have to dig up the plant and destroy it. If you can find the mites in the flower, then removing infested flowers or cutting the plant down to the ground in the fall and getting rid of the debris may be all that is needed. So how can we tell who is who? Ohio State reports that when aster yellows is the culprit, the distorted flower parts tend to be green (fig. 15) in color, but when mites are involved, the distorted flower parts maintain their normal color (fig. 16). Mites will affect only the flowers while aster yellows will affect other parts of the plant.



Figure 16 Eriophyid mite damage (photo: Stephanie Adams)

Management: There is no cure or treatment for aster yellows. Infected plants should be removed from the garden to prevent spread to other plants by the leafhoppers. Do not compost the plants. Manage the mites by removing infested flowers. Cut down and remove plants in the fall.

Downy leaf spot of hickory (minor)

Downy leaf spot, also known as white mold or white leaf spot, caused by the fungus *Microstroma juglandis*, has been found on hickory (*Carya* sp.). Powdery, white, fuzzy spots that are more concentrated near the leaf veins are forming on the underside (fig. 17) of the leaf surface. Corresponding chlorotic spots appear on the upper leaf surface. These spots vary in size and may coalesce to form large angular lesions. The fungus may also cause witches' brooms near the ends of branches with stunted and yellowish leaves that may drop in early summer.



Figure 17 Downy leaf spot on underside of leaf

Management: Downy leaf spot attacks hickories and walnuts but is not a significant threat to the trees. Witches' brooms can be pruned to improve the appearance of the tree. Chemical management is not recommended.



[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 Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum and Professor at Joliet Junior College; Julie Janoski, Plant Clinic Manager, 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 the volunteers who will be scouting for us this season. They find most of the insects and diseases reported here. The Scouting Volunteers include: Maggie Burnitz, LeeAnn Cospers, Ingrid Giles, Loraine Miranda, and Emma Visee. Your hard work is appreciated. Thanks also to many of the Plant Clinic volunteers for sharing things they find in their own yards and neighborhoods.

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://www.mortonarb.org/news-publication/plant-healthcare-report?tid=259>

For pest and disease questions, please contact the Plant Clinic. At this time due to the COVID-19 situation, the Plant Clinic building is closed. You can still contact the Plant Clinic via email at plantclinic@mortonarb.org. Emails will be answered during business hours Monday through Friday. Inquiries or comments about the PHCR should be directed to Sharon Yiesla at syiesla@mortonarb.org.

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