

Plant Health Care Report

Scouting Report of The Morton Arboretum

May 15, 2020

Issue 2020.4

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 in the early part of the season. Once the situation improves, Arboretum staff and volunteers will be scouting for insects and diseases. We will also 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?

Common lilac (*Syringa vulgaris*) is beginning to flower (Figure 1)

Accumulated Growing Degree Days (Base 50): 121.5 (as of May 14)

Accumulated Growing Degree Days (Base 30): 1231.5 (as of May 14)

Insects/other pests

- Viburnum leaf beetle update
- Aphids
- Hydrangea leaf tier
- Pine needle scale
- Murder hornet

Diseases

- Ralstonia pest alert
- Wetwood and slime flux
- Phomopsis tip blight
- Plant viruses

Weeds

- Bishop's Weed



Figure 1 Common lilac

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. This week I would like to give a little shout out to the volunteers of the Plant Clinic. Our 60 volunteers 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 (and asked them to check their own viburnums for the leaf beetle). The response was great and has allowed me to write a fuller and more in-depth newsletter this week 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 May 14, we have 121.5 base-50 growing degree days (GDD). The historical average (1937-2019) for this date is 155 GDD₅₀. Since January 1, we have had 15.4 inches of precipitation. Historical average (1937-2019) for precipitation Jan-May is 16.1 inches.

Location	B ₅₀ Growing Degree Days Through May 14, 2020
Carbondale, IL*	390
Champaign, IL*	191
Glencoe*	27
Chicago Botanic Garden**	No report
Chicago O'Hare*	125
Kankakee, IL*	142
Lisle, IL*	135
The Morton Arboretum	121.5
Quincy, IL*	263
Rockford, IL*	103
Springfield, IL*	235
Waukegan, IL* (60087)	64
Waukegan, IL* (60085)	80

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

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)

Earlier this week, several plant clinic volunteers informed me that Viburnum leaf beetle (*Pyrrhalta viburni*) larvae had hatched out in their neighborhoods. The larvae are VERY small at this time, but they are already munching away on partially opened leaves of arrowwood viburnum (*Viburnum dentatum*). The larvae were tucked in between the veins on the lower side of the leaf and fairly well hidden. This photo (fig. 2) shows how small they are this week.



Figure 2 Tiny VLB larvae feeding on a viburnum leaf that is only half open.

Even at the late stages of their development, the larvae are small (less than 1/2 inch). They can vary in color. 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). The larvae feed primarily on the undersides of new foliage.

Management: Insecticides can be used on the larvae in May/June when they are feeding and on the adults in summer when they are feeding. To treat the larvae, some university websites are suggesting spinosad or insecticidal soap (this product must be sprayed directly on the larvae, so the lower sides of the leaves will need to be sprayed). Reducing larval populations now will help reduce both the damage done and the need for stronger insecticides when the beetles emerge. Cornell University suggests a single soil application of



Figure 3 Close up of VLB larvae (photo: S. Adams)

imidacloprid in spring (not summer) to control adults this summer. Remember that imidacloprid is systemic in the plant and can go into flowers, possibly endangering pollinators.

If you plan to add new arrowwood 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. Not all species of viburnum are highly susceptible to this pest. A full list of viburnums and their relative susceptibility can be found at the link below.

Good websites:

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

Aphids (minor)

We are starting to see aphids showing up in the landscape. We have had two reports of aphids on honeysuckle vines and now one of our volunteers reports them on viburnums. There are a number of different species of aphids that vary in color; yellow, green, pink, black. They are all tear-drop shaped (fig. 4) and have two cornicles on the back end (looks like twin tail-pipes). Aphids are small, about 1/16".

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 4 Aphid (arrows point to cornicles)

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>
<http://extension.missouri.edu/p/g7274>

Hydrangea leaftier (minor)

This is an unusual little weirdo showing up in a couple of gardens. The hydrangea leaftier (*Olethreutes ferriferana*) is showing up on 'Annabelle' hydrangeas (*Hydrangea arborescens* 'Annabelle'). Two of our volunteers found this in their own yards. This little caterpillar (fig. 5) will tie leaves together to form a pouch-like structure (fig. 6) at the end of the branch. The caterpillar lives inside. In summer, the caterpillar will go to the ground to pupate. Adult moths will emerge in spring.

Management: Hand removal of the affected leaves is usually sufficient control.

Good website: <http://hyg.ipm.illinois.edu/article.php?id=359>



Figure 5 Hydrangea leaftier larva



Figure 6 Damage done by hydrangea leaftier

Pine needle scale (potentially serious)

Pine needle scale (*Chionaspis pinifoliae*) has been found on Scots pine (*Pinus sylvestris*). So far, we are only seeing small populations. Pine needle scale overwinters as eggs under a female adult. The female looks like a white, tear-drop shaped fleck (fig. 7) on a pine needle. After the eggs hatch (which should occur later this month), the tiny crawlers move to a new site on the host plant to feed. They suck juice from needles. As the crawlers develop, they secrete a white, waxy covering over their bodies. By late June or early July, they reach maturity, and second-generation eggs are laid. Second generation crawlers begin to appear in late July to early August. A heavy infestation will cause needles to turn yellowish brown. Pine needle scale does not produce honeydew.

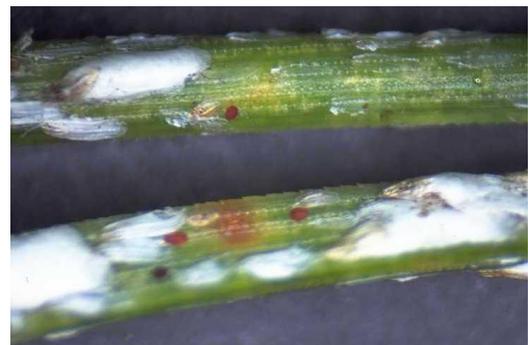


Figure 7 Pine needle scale adults (white)

Heavy infestations can give trees a flocked appearance. After multiple years of severe infestation, branches, and sometimes trees, can be killed. Pine needle scale prefers Scots and mugo pines and occasionally infests Austrian, white, and red pines.

Management: Insecticide treatments are commonly targeted at the young (crawler stage) of the scale, so knowing which scale you have and when the crawlers are expected helps with the timing of pesticide use. Systemic insecticides (applied as drenches or injected into the tree) may be used on many species of scale, but every systemic insecticide does not work on every species of scale, so check the label of the product for specific information. Planning is required, as these products are often applied early in the season to give them time to move through the plant to be available when crawlers are active. If a tree will be sprayed with an insecticide, treatment should be timed to occur when crawlers are present. For pine needle scale, we expect that to occur later this month. Before using any insecticide, check for the presence of beneficial insects or holes in the adult scale that indicate attack by parasitoids.

Good website:

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

Murder hornet (serious pest of bees)

No doubt you have seen reports of the ‘murder hornet’ online. This prompts me to include some information about this pest. The real name of this insect is the Asian giant hornet (*Vespa mandarinia*). At this time, this pest is NOT in Illinois. It has been found only in very limited locations in the Continental U.S. The nickname murder hornet comes from the fact that late in the season the hornets will stage mass attacks on bee colonies.

A report from USDA-APHIS:

[https://cms.agr.wa.gov/WSDAKentico/Documents/PP/PestProgram/Vespa_mandarinia_NPRG_10Feb2020-\(002\).pdf](https://cms.agr.wa.gov/WSDAKentico/Documents/PP/PestProgram/Vespa_mandarinia_NPRG_10Feb2020-(002).pdf)

From Michigan State: <https://www.canr.msu.edu/news/giant-wasps-arent-coming-for-you>.

Pest Updates: Diseases

Ralstonia Pest alert: In case you missed it, here is a repeat of a pest alert we posted in the April 24th growing degree day issue.

North American Plant Protection Organization posted a pest alert about *Ralstonia solanacearum* on geraniums. The alert can be found at

<https://www.pestalerts.org/official-pest-report/ralstonia-solanacearum-race-3-biovar-2-detection-united-states-greenhouse>

General information about this disease can be found at this link:

<https://www.ncipmc.org/projects/pest-alerts1/ralstonia-solanacearum/>

Wetwood and slime flux (minor)

The Morton Arboretum Plant Clinic has received a couple of emails regarding wetwood and slime flux. This bacterial disease is usually associated with elms and poplars, but can affect other tree species. The bark or trunk of the tree appears to be water-soaked (fig. 8). The causal organisms of wetwood are several different bacteria in the inner sapwood and heartwood. Gas produced by bacterial fermentation creates pressure that forces the wetwood ooze through openings and weak points in the tree. When wetwood ooze becomes a chronic problem, the resulting flow of ooze is called slime flux. If this toxic liquid is transported internally to branches, wilting and/or defoliation may occur. Wilting is rarely seen, but areas of dead bark are common. On the plant surface, this liquid supports the growth of many other kinds of bacteria and fungi that sometimes results in 'slime' being produced on the surface of the bark. The slime can be various colors. Another email was received with photos that showed alcoholic flux which is similar to slime flux. Alcoholic flux has a fermented smell and a white, frothy look.



Figure 8 Wetwood/slime flux

Management: There is no cure for wetwood (or alcoholic flux). Keep trees watered during dry periods because drought is thought to increase wetwood problems. The practice of boring a hole into the trunk and inserting a pipe to release gas pressure doesn't help much, plus you are creating another open wound for organisms to colonize. Dead and weak branches should be removed. Bacteria are easily transmitted by tools so disinfect tools before pruning another tree.

Good websites:

<http://www.mortonarb.org/trees-plants/plant-clinic/help-diseases/wetwood>

<https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=21997>

Phomopsis tip blight (minor to potentially serious)

Phomopsis tip blight is a leaf and shoot infection that affects the new, young foliage of various evergreens. Plant Clinic has received a couple of emails about this (diagnosis unconfirmed). This is a common disease of many junipers. The first symptom, yellow spots on young needles, occurs soon after infection. The fungus then enters young stem tissue causing dieback of the new shoot tips (fig. 9). Affected foliage turns dull red to brown and then ash gray. As the disease progresses, small lesions (cankers) form on the stems where infected and healthy tissue meet. Infection is spread primarily by splashing rain, wind, insects, or mechanical means.

Repeated infections occur when temperatures are between 70 -80 degrees F, during periods of high humidity, and when foliage is wet. The fungus can persist in dead parts of infected plants for as long as two years.

Severity of the disease is often tied to the age of the plant. Young plants may be seriously injured or even killed, while older plants are less severely injured. Repeated infections, year after year, may lead to decline.



Figure 9 Phomopsis tip blight

Management: Cultural techniques, such as avoiding wetting of foliage, proper spacing of trees for good air circulation, and sanitation (removal of dead tissue when feasible) will help reduce the incidence of disease. Small trees may need to be treated with fungicides in spring to protect them from damage.

Good websites:

<http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-diseases/juniper-tip-blight>
<http://plantclinic.cornell.edu/factsheets/junipertipblight.pdf>

Plant Viruses (some minor, some potentially serious)

We are starting to see some plants exhibiting viral symptoms already this year. We have already seen potential viral symptoms on a couple of perennials. Viruses seldom kill their hosts, but the plant will always be infected and many viruses can be spread by insects that feed on a diseased plant and then move to a healthy plant to feed. Virus symptoms can vary by plant and by virus. Common symptoms include mottling, mosaic patterns and excessive growth of plant parts (figs. 10 and 11).



Figure 10 Tobacco rattle virus on barrenwort

Management: There is no chemical management of viruses. Once the plant is infected, it cannot be 'cured'. There are two options for dealing with viruses. First, you can keep the plant and live with the fact that it has the virus. For some plants this is an acceptable option, especially if it does no serious damage to the plant or there are no other plants of the same species nearby to become infected. The second option is to destroy the plant. This is a good idea with small plants like roses, hostas or



Figure 11 Unidentified virus on katsura

raspberries where there are other plants of the same species nearby that might become infected.

Pest Updates: Weeds

Bishop's weed (aggressive)

For many years, Bishop's weed (*Aegopodium podagraria*) was sold as a ground cover and some garden centers still sell it. The variegated cultivar was especially popular (fig. 12). But times change, and the biggest question that the Plant Clinic gets regarding this plant is "How do I get rid of this?" Why the change? Bishop's weed is a strong grower and is very aggressive, often covering a lot more territory than is desirable. This plant spreads easily underground and can be difficult to control. Wisconsin law designates this as a "restricted invasive plant". (For more information on invasive species laws in Midwestern states visit www.mipn.org)



Figure 12 Variegated Bishop's weed

The leaves are compound with up to 9 leaflets. The arrangement of the leaves often leads people to mistake it for poison ivy. Leaves of the species are green, but the variegated cultivar has green leaves with creamy margins. The plants will produce clusters of white flowers that resemble Queen Anne's lace, followed by lots of seeds!

Management: Bishop's weed can be difficult to control. Remove flowers before they go to seed to minimize spread through that venue. Control of existing plants is difficult without herbicides because digging the plant seldom removes all the underground stolons. Glyphosate can be used to control this plant, but multiple applications may be needed. It is best to treat the plant when it is small, either at the time it is emerging from the soil or resprouting after being cut down. Glyphosate will be absorbed by the young leaves and transported down to the root system to kill out the entire plant. Glyphosate is a non-selective herbicide and can kill or damage any plant so care must be used to avoid getting it on desirable plants.



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The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum and 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 Cospier, Ingrid Giles, Loraine Miranda, and Emma Visee. Your hard work is appreciated. Thanks also to Donna Danielson who shares her scouting findings.

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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