

Plant Health Care Report

Scouting Report of The Morton Arboretum

June 7, 2013

Issue 2013.8

Our report includes up-to-date disease and insect pest reports, as well as color images, for northeastern Illinois. You'll also find a table of accumulated growing degree days throughout Illinois, precipitation, and plant phenology indicators to help predict pest emergence. The report is published bi-weekly on Fridays in April and August, and weekly May-July.

Arboretum staff and volunteers will be scouting for insects and diseases throughout the season. We will also be including information about other pest and disease problems based on samples brought into the Arboretum's Plant Clinic from homeowners and professionals.

If you have any comments or concerns regarding the Plant Health Care Report, please send them to Sharon Yiesla at syiesla@mortonarb.org.

Quick View

What indicator plant is in bloom at the Arboretum?

Arrowwood Viburnum (*Viburnum dentatum*) is in bloom (figure 1)

Accumulated Growing Degree Days (Base 50): 464 (as of June 6)

Accumulated Growing Degree Days (Base 30): 1730 (as of June 6)

Insects:

- Leafrollers
- Spittlebug
- Aphids
- More galls

Diseases:

- Downy leaf spot on hickory
- Oak anthracnose
- Fire blight
- More viruses

Weeds:

- Poison hemlock

Non-pest problems

- Chlorosis



Figure 1 Arrowwod viburnum (photo credit: John Hagstrom)

Degree Days and Weather Information

As of June 6, we are at 464 base-50 growing degree days (GDD). In 2012, when we were having an abnormally warm season, we had accumulated 741 GDD base-50 by this date. On average we usually have accumulated 466 GDD base-50 by this date. So we are still fairly close to average this year. From May 31 through June 6 we have had 2 inches of rain.

Location	B ₅₀ Growing Degree Days Through June 6 , 2013	Precipitation (in) May 31-June 6 , 2013
Carbondale, IL*	915	
Champaign, IL*	730	
Chicago Botanic Garden**	406.5	.47" (5/30-6/5)
Chicago O'Hare*	527	
Kankakee, IL*	663	
The Morton Arboretum	464	2.01 inches
Northbrook, IL**	464	.83" (5/30-6/5)
Quincy, IL*	711	
Rockford, IL*	510	
Springfield, IL*	733	
Waukegan, IL*	400	

**Thank you to Mike Brouillard, Northbrook Park District and Mike Annes, 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/>

New this year: To make the Plant Health Care Report (PHCR) more effective, each pest/disease article will be marked parenthetically this year to indicate the severity of the problem. Problems that have the potential to be serious and which may warrant chemical control measures will be marked "potentially serious". Problems that are included in the PHCR, but 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, are 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. As the season goes on please give me feedback as to whether this system helps you or not. Contact me at syiesla@mortonarb.org.

Pest Updates: Insects

Leafrollers (minor)

There are about 200 species of leafrollers that attack ornamental plants. This week our scouts found oak leafroller (*Archips semiferrana*). Leafrollers are caterpillars that roll up leaves and feed from within the shelter of the rolled-up leaf (Figure 2). Damage is usually minor.

Management: None required as leafrollers usually cause minimal damage.

Good website:

<http://urbanext.illinois.edu/hortanswers/detailproblem.cfm?PathogenID=89>

Spittlebug (minor)

We're starting to see spittle bugs on a number of plants (especially perennials). They can be identified by the frothy white mass (figure 3) they produce on foliage and twigs. The spittle, consisting of plant juices, is made by the immature bug to keep it moist and protect it from its enemies. Spittlebugs suck plant sap but inflict little damage on mature plants. There are a number of species of spittlebugs that feed on both deciduous and evergreen plants in our region.

Management: Control is rarely necessary, but hosing the plants down forcefully with water is usually sufficient to remove most of the insects. This may need to be repeated a few times.

Good website: <http://urbanext.illinois.edu/focus/spittlebug.cfm>

Aphids (minor)

We are seeing aphids showing up on a wide range of plants both woody and non-woody. There are a number of different species that vary in color (yellow, green, pink, black). They are all tear-drop shaped and have two cornicles on the back end (looks like twin tail-pipes) (figures 4 and 5). They 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,

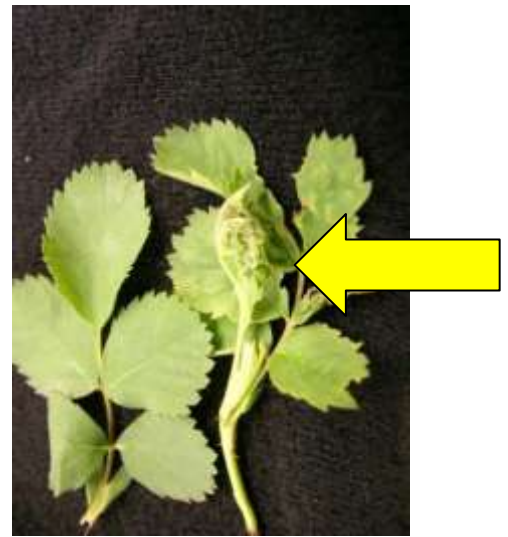


Figure 2 Typical leaf roller damage (see arrow)



Figure 3 Spittlebug froth



Figure 4 Aphids

which is a sticky substance. Sticky leaves are often noticed before the insects themselves.

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/component/content/article/193-insects-diseases/759-aphids-aphis-spp.html>

More galls (minor)

The parade of galls continues. Remember that galls are generally a cosmetic problem. Most of them do no harm to the host plant, and there is very little need for management. This week we have spotted nipple gall on hackberry (figure 6), which is so common that some people think it is a normal part of the plants. We have also seen spindle galls (figure 7). Spindle galls occur on many different species (we saw them on lindens this week). Plant Clinic also received a very cool looking spiny rose gall sample (figure 8).

Management: None needed. These galls are cosmetic problems only. Spiny rose galls are usually present in small numbers, so you could prune them out to reduce next year's population.

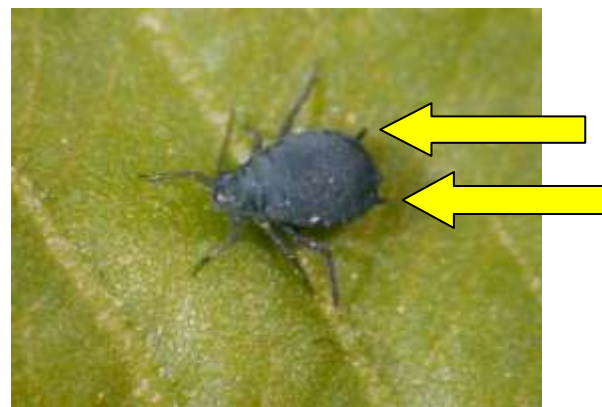


Figure 5 Aphid (note cornicles by arrows)



Figure 6 Hackberry nipple gall



Figure 7 Spindle galls



Figure 8 Spiny rose gall

Pest Updates: Diseases

Downy leaf spot on hickory (minor)

Downy leaf spot (figure 9), 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 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 9 Downy leaf spot on hickory

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

Good websites: http://web.aces.uiuc.edu/vista/pdf_pubs/600.pdf

<http://plantclinic.cornell.edu/factsheets/downyleafspothckory.pdf>

Oak anthracnose (minor)

A couple of weeks ago we reported on ash anthracnose. Now we are seeing anthracnose on oaks. Oak anthracnose (*Discula* spp.) (figure 10) has been found on oaks at the Arboretum. Symptoms on trees in the white oak group follow one of three patterns: 1) early infection in which young leaves turn brown and shrivel during leaf expansion; 2) a later infection in which large, irregular blotches develop and distort leaves. The lesions then dry, become papery, and may turn tan to white; and 3) mature leaves are infected and develop small necrotic spots. All three patterns typically start at the bottom of the tree because of high moisture and rainfall flow.



Figure 10 Oak anthracnose

Management: In most years, control of anthracnose on oaks is unnecessary because the disease does not affect the long-term health of oak trees. Collecting and destroying fallen leaves and twigs, and pruning dead twigs, will help reduce the overwintering population of the pathogen. Pruning during the dormant season will also increase air circulation and lower humidity within the canopy. Mulching and watering (not overhead) during dry periods will help keep trees healthy. Chemical sprays to control

anthracnose are rarely justified except when the disease occurs in stressed or recently transplanted trees, or when the disease causes repeated defoliations.

Good websites:

<http://www.mortonarb.org/tree-plant-advice/article/714/anthracnose-of-shade-trees.html>

<http://urbanext.illinois.edu/hortanswers/detailproblem.cfm?PathogenID=5>

<http://ohioline.osu.edu/hyg-fact/3000/3048.html>

http://www.na.fs.fed.us/spfo/pubs/fidls/anthracnose_east/fidl-ae.htm

Fire blight (potentially serious)

Fire blight has been found on our grounds infecting *Prunus* species. Fire blight is a serious disease of plants in the rose family and is caused by the bacterium *Erwinia amylovora*. Common symptoms are blossom and shoot blight. Branches are described as looking as though they were burned, thus the name fire blight. Blossoms, leaves, and shoots wilt, turn dark brown, and look water-soaked. Leaves usually persist, and succulent shoots that become infected frequently form what looks like a “shepherd’s crook” (figure 11). Fire blight infections move rapidly from the blossoms into branches and trunks, causing cankers. The cankers enlarge and may girdle a tree during the growing season. Clear, or sometimes milky, ooze often exudes from fissures on infected shoots and canker margins. The presence of ooze seems to depend on weather conditions. Fire blight bacteria overwinter in canker margins and buds. In spring, bacteria resume reproduction when temperatures rise above 65 degrees. Rain, heavy dews, high humidity, and vigorous tree growth favor the disease. Frequently trees that are heavily pruned and have a lot of subsequent succulent new growth become infested. The bacteria are spread in droplets of ooze carried by pollinating insects, rain, and pruning tools.



Figure 11 Fire blight damage showing shepherd's crook

Management: It is critical to respond quickly to this disease by removing infected limbs or the entire tree as the disease rapidly spreads. Prune blighted stems during dry weather as soon as they are spotted. Make pruning cuts at least six inches below infected areas and sterilize pruning tools between cuts. Longer term management requires avoiding crowded plantings, heavy pruning, and high nitrogen fertilizers that can increase succulent growth. Copper-containing chemicals can be used as protectants against fire blight. Plant resistant varieties of *Rosaceous* plants.

Good websites:

<http://www.mortonarb.org/tree-plant-advice/article/721/fire-blight.html>

<http://www.ag.uiuc.edu/~vista/abstracts/a801.html>

<http://www.extension.umn.edu/yardandgarden/ygbriefs/p223fireblight.html>

More viruses (minor)

Last week we reported on a virus on *Epimedium*. Additional virus infections are showing up around the Arboretum. A mosaic virus has been found on Katsuratree (*Cercidiphyllum japonicum*). Many viruses have the word 'mosaic' in their name. This term refers to the main symptom where the leaf seems to be composed of variously colored mosaic tiles (figure 12). Another interesting looking virus has shown up again this year on Rozanne geranium (*Geranium 'Rozanne'*) (figure 13).

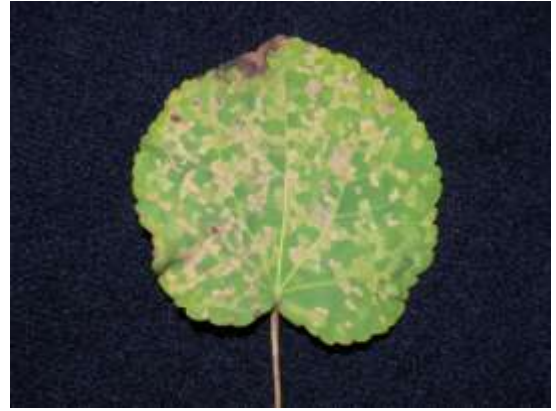


Figure 12 Mosaic virus on Katsuratree

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

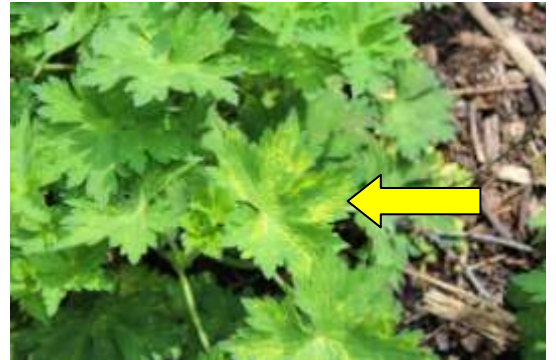


Figure 13 Virus on geranium (arrow) (photo credit: Donna Danielson)

Pest Updates: Weeds

Poison hemlock (dangerous)

The Plant Clinic has received a report of poison hemlock (*Conium maculatum*) popping up in a home garden. We saw quite a bit of this last year, so we should be prepared for it again. Poison hemlock 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 14 Poison hemlock plant (first year) (photo credit: Sharon Yiesla)

Poison hemlock is a large, non-native plant (often 6 feet or more) (figure 14). The smooth stem is stout, has a ridged appearance and is marked with purple spots (figure 15). The stem is hollow. Leaves are large and very ferny in appearance (figure 16). 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 start flowering soon now and 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 15 Poison hemlock stem (photo credit: Sharon Yiesla)

All parts of the plant are toxic and may lead to death if ingested. The plant's oil may be absorbed through the skin, so long sleeves and gloves will be needed when handling the plant.

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. Do NOT burn the plants. In spring, actively growing plants may be treated with an herbicide containing glyphosate.



Figure 16 Poison hemlock leaves (photo credit: Sharon Yiesla)

Good websites:

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

<http://www.btny.purdue.edu/weedscience/2003/articles/PHemlock03.pdf>

Non-pest problems

Chlorosis (potentially serious)

Chlorosis is showing up on a number of plants including river birch (*Betula nigra*), white oak (*Quercus alba*) and pin oak (*Quercus palustris*). Chlorosis is a yellowing of the leaf due to low levels of chlorophyll (the green pigment in leaves). In mild cases, leaf tissue appears pale green but the veins remain green (figure 17). Leaf tissue becomes progressively yellow, and may turn white in advanced cases. Leaf margins may become scorched or develop symmetrical brown spots between veins. Trees that commonly show chlorosis include pin oak, red oak, red maple, white oak, river birch, tulip-tree, sweet gum, bald cypress, magnolia, and white pine.

There are many causes of chlorosis. The most common chlorosis in our area is due to iron and manganese deficiencies resulting from alkaline soils. High pH causes iron and manganese that is present in the soil to become unavailable to the plant. Anything that negatively impacts the root system (physical damage, flooded soils, and drought) can also lead to chlorosis. There may be more than one possible cause. Take river birch for example. It is fairly common to see chlorosis from lack of iron. In this case, we see the typical yellow leaf with green veins. River birch also suffers when the soil is too dry. In that case, we tend to see leaves turn all yellow and fall off (sometimes as many as half the leaves may drop). Determining the cause helps us to determine management practices.



Figure 17 Chlorosis on oak

Management: In dry seasons, be sure to provide enough moisture to plants. Where soil pH is alkaline (northern Illinois), avoid planting trees that do not tolerate alkaline soils. If leaves do become chlorotic, first determine the pH of the soil by doing a soil test or sending a sample of soil to a laboratory. Take the necessary steps to remedy the situation based on the results of the test.

- Fertilize soil with a nitrogen- and sulfur-based fertilizer in early spring through mid-May.
- Use chelated iron which is not affected by soil pH.
- Place iron or manganese implants in the trunk of the tree.

Good websites: <http://www.ag.uiuc.edu/~vista/abstracts/aIRONCHL.HTML>
<http://www.mortonarb.org/tree-plant-advice/article/662/chlorosis.html>

The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Clinic Assistant and edited by Stephanie Adams, M.S. Research Specialist in Plant Health Care; Fredric Miller, Ph.D., Research Entomologist at The Morton Arboretum and Professor at Joliet Junior College; Doris Taylor, Plant Information Specialist, and Carol Belshaw, an 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 that are in this report. The Scouting Volunteers include: LeeAnn Cosper, Deborah Finch-Murphy, Anne Finn, Ann Klingele, Arnis Krusow, Jack Leider, Loraine Miranda, Bill Sheahan and Kathy Stephens. Your hard work is appreciated.

Literature recommendation:

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. This book may be purchased through the publisher at: <http://www.laborofloveconservatory.com/>

The Commercial Landscape & Turfgrass Pest Management Handbook (CPM), for commercial applicators, and the Home, Yard & Garden Pest Guide (HYG) for homeowners from the University of Illinois, are available by calling (800-345-6087).

This report is available as a PDF at The Morton Arboretum website at <http://www.mortonarb.org/tree-plant-advice.html>

For pest and disease questions, please contact the Plant Clinic at (630) 719-2424 between 10:00 and 4:00 Mondays through Saturdays or email plantclinic@mortonarb.org . Inquiries or comments about the PHC reports should be directed to Sharon Yiesla at syiesla@mortonarb.org .

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