

Plant Health Care Report

Scouting Report of The Morton Arboretum

July 19, 2013

Issue 2013.13

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?

Chicory (*Cichorium intybus*) is blooming (figure 1)

Accumulated Growing Degree Days (Base 50): 1365 (as of July 18)

Accumulated Growing Degree Days (Base 30): 3471 (as of July 18)

Insects:

- Linden looper
- Oak slug sawfly
- Two spotted spider miteS
- Grape phylloxera
- The galls keep on coming

Diseases:

- Aster yellows
- Tar spot of maple



Figure 1 Chicory (photo credit John Hagstrom)

Degree Days and Weather Information

As of July 18, we are at 1365 base-50 growing degree days (GDD). In 2012, when we were having an abnormally warm season, we had accumulated 1809 GDD base-50 by this date. On average we usually have accumulated 1393 GDD base-50 by this date, so we are still fairly close to average this year. From July 12-18 we have had .25 inches of rain.

Location	B ₅₀ Growing Degree Days Through July 18 , 2013	Precipitation (in) July 12-18 , 2013
Carbondale, IL*	2059	
Champaign, IL*	1770	
Chicago Botanic Garden**	1229 (7/17)	0" (7/11-17)
Chicago O'Hare*	1493	
Kankakee, IL*	1664	
The Morton Arboretum	1365	.25"
Northbrook, IL**	1377	.09
Quincy, IL*	1814	
Rockford, IL*	1465	
Springfield, IL*	1826	
Waukegan, IL*	1284	

**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 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 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

Linden looper (minor)

Linden looper (*Erannis tiliaria*) larvae (Figure 2) has been found feeding on American linden (*Tilia americana*). The larvae will consume the entire leaf, except midribs and major veins. Serious infestations may result in defoliation. The larvae have rusty-brown heads and yellow bodies, with thin, wavy black longitudinal lines on their backs. They reach 1.5 inches at maturity. Preferred hosts of the linden looper include maple, linden, oak, apple, birch, elm, hickory, crabapple, and hawthorn.



Figure 2 Linden looper larva

Management: Infestations are rarely severe so control is generally not warranted. For severe infestations, *Bacillus thuringiensis* var. *kurstaki* (Btk) is effective against young larvae.

Good web site: <http://bugguide.net/node/view/39092>

Oak slug sawfly (minor)

We've found oak slug sawfly (*Caliroa quercuscoccineae*) larvae (figure 3) feeding on white oak (*Quercus alba*). The sawflies feed on the lower layer of the leaf, leaving behind the upper epidermal layer and creating a 'window pane' effect. The larvae are about 3 mm (1/8 inch) long, pale yellow-green, and slimy; they will reach about 12 mm (1/2 inch) when mature. There are two to three generations per year.



Figure 3 Oak slug sawfly larvae

Completely skeletonized oak leaves drop prematurely. Pin oak and scarlet oak are preferred hosts, but this insect will feed on white and black oaks as well. Normally, damage is an aesthetic problem.

Management: This pest is generally kept in check by parasites, microbial disease, and other natural enemies. Even noticeable outbreaks are generally not dangerous to the health of the host oaks.

Good website: http://www.na.fs.fed.us/spfo/pubs/pest_al/sawfly/sawfly.pdf
<http://www.fs.fed.us/r8/foresthealth/pubs/oakpests/p9.html>

Two spotted spider mites (potentially serious)

With the heat we are having, it was bound to happen. The two-spotted spider mites are here. Our scouts have found them feeding on elderberry (*Sambucus canadensis*). Two-spotted spider mites (*Tetranychus urticae*) (figure 4) are very small, about 1/60 of an inch long. You need a hand lens to see

them clearly. Mites are not insects but insect relatives. Mites have eight legs and two body regions, while insects have six legs and three body regions. The two-spotted variety has two spots on their backs. Leaves attacked by spider mites show stippling or tiny, chlorotic flecks. If enough damage is done to a leaf, it begins to look bronzed and may drop prematurely. Spider mites attack many kinds of plants and are also very common on house plants, especially in winter when your house is warm and dry.



Figure 4 Two-spotted spider mite

Management: First, you may want to determine what kind of mites are on your plant by holding a white sheet of paper under a branch and shaking the branch firmly. If you have mites, tiny specks will start crawling on the paper. Squish some of the moving specks. If the resulting streaks are green, you are seeing mites that feed on plants. If you see red or brown streaks, you probably have predatory mites that are the natural predators of spider mites (a good thing). Beneficial mites move faster than the pest mites. Pest mites don't have to move fast to catch their food; plants don't run too fast. But the beneficials have to move faster in order to catch their prey. Anyway, if you see lots of green spider mites, you may want to treat the plant.

There are several options. A forceful stream of water may knock mites off the plant. This should be repeated for three days. Predatory mites can also be purchased and released on the plants. Insecticidal soaps and other insecticides can be sprayed to control mites.

Good websites: http://entnemdept.ufl.edu/creatures/orn/twospotted_mite.htm

<http://www.mortonarb.org/component/content/article/193-insects-diseases/770-mites.html>

Grape phylloxera (serious)

Grape phylloxera (*Daktulosphaira vitifoliae*) is a serious pest in commercial vineyards and can affect home grape growing as well. These insects are tiny and hard to see without magnification. The damage they do is far more noticeable. These insects cause round galls on the lower surface of grape leaves. The galls are often numerous and lead to deformation of the leaf (figure 5). Gall production may also lead to death of leaves and premature defoliation. Premature defoliation, in turn, can lead to reduced crop quality and



Figure 5 Galls of grape phylloxera

weakening of the vines, leading to winter injury. Phylloxera can also feed on roots, causing galls there.

Management: Avoid susceptible cultivars. French-American hybrids are most at risk (see the first website listed below for susceptible cultivars and rootstock resistant to the root form of the phylloxera). Practice good sanitation by removing and destroying leaves with galls as soon as possible. Destroy populations of wild grape nearby as this plant can harbor the pest. A few chemical controls are available to commercial growers. None are available to home grape growers.

Good websites: http://www.uaex.edu/Other_Areas/publications/PDF/FSA-7074.pdf
<http://ohioline.osu.edu/hyg-fact/2000/2600.html>

The galls keep on coming (minor)

Unlike the gall featured in the previous article, the ones here are more of the type that look interesting and basically do no real harm. This week, our scouts found vein pocket gall on pin oak, maple bladder gall on silver maple and a neat gall on hickory (*Carya* species). Vein pocket gall (figure 6) takes the form of an enlarged area that follows along the veins on the underside of the leaves. Feeding by the larval (maggot) stages of very small flies called midges cause the galls to form. The midges lay eggs along the veins. The eggs hatch into maggots which feed along the veins. Within a few days, the leaves grow tissue around the tiny maggots, forming the long, thin galls. Several maggots can be found inside the galls. Eventually they mature into adults and drop down to the ground to overwinter.

Maple bladder gall is found on the upper leaf surface, and looks like small round warts and are about three mm in diameter (figure 7). Initially green, the galls quickly turn pink to red and eventually black. They are caused by eriophyid mites (*Vasates quadripedes*) that overwinter in bark crevices and around callous growth of wounds, scars, and pruned branches. The mites become active in spring and migrate to feed on expanding leaf buds. The feeding induces formation of galls.



Figure 6 Vein pocket gall



Figure 7 Maple bladder gall



Figure 8 Gall on hickory

On hickory, our scouts found a fuzzy little gall (figure 8) caused by a midge (*Caryomyia holotricha*)

Management: None needed. These galls are cosmetic problems only.

Pest Updates: Diseases

Aster yellows (minor)

We are getting reports of aster yellows showing up in flower gardens. 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. Reports this year seem to mostly be 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 deformed flower heads in the form of stunted petals, completely deformed flower heads (figure 9), green petals (figure 10) or deformed flower heads poking out of other flower heads. The disease organism is transmitted by leafhoppers, which are sap feeding insects. They spread the organism when they feed on the host.

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.

Good websites:

<http://www.ipm.iastate.edu/ipm/hortnews/2006/9-13/asteryellows.html>

<http://hort.uwex.edu/articles/aster-yellows/>



Figure 9 Deformed flower due to aster yellows (photo credit Sharon Yiesla)



Figure 10 Green petals due to aster yellows (photo credit Heather Prince)

Tar spot of maple (minor)

Tar spot of maple was found on silver maple (*Acer saccharinum*). The disease looks just like shiny black spots of tar flung about on the upper surface of maple leaves (figure 11). Several different fungi in the genus *Rhytisma* infect the leaves of maples and cause the spots. The spots range from 1/5 to 4/5 inch in diameter. *Rhytisma* spp. most



Figure 11 tar spot

commonly infects leaves of silver and Norway maples, although big leaf, mountain red, Rocky Mountain, and sugar maples are also susceptible. It does little harm to the trees, but is unsightly.

Management: Management is generally not necessary. To reduce inoculum, rake up and discard the leaves in fall.

Good website: <http://plantclinic.cornell.edu/factsheets/tarspotofmaple.pdf>
http://www.ppd.l.purdue.edu/ppdl/expert/Tar_Spot_on_Maple.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 Cospers, Deborah Finch-Murphy, Anne Finn, Ann Klingele, 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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