

# Plant Health Care Report

Scouting Report of The Morton Arboretum

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July 12, 2013

Issue 2013.12

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](mailto:syiesla@mortonarb.org).

## Quick View

### What indicator plant is in bloom at the Arboretum?

Bottlebrush buckeye (*Aesculus parviflora*) is in bloom (figure 1)

Accumulated Growing Degree Days (Base 50): 1178 (as of July 11)

Accumulated Growing Degree Days (Base 30): 3144 (as of July 11)

### Insects:

- Kermes scale
- Magnolia scale
- Azalea bark scale
- Columbine leaf miner
- Lacebugs on white oak
- Green stink bug
- Hedgehog gall

### Diseases:

- Oak leaf blister
- Botrytis blight
- A couple of rusts
- *Schizophyllum commune*



Figure 1 Bottlebrush buckeye

## Degree Days and Weather Information

As of July 11, we are at 1178 base-50 growing degree days (GDD). In 2012, when we were having an abnormally warm season, we had accumulated 1606.5 GDD base-50 by this date. On average we usually have accumulated 1222.5 GDD base-50 by this date, so we are still fairly close to average this year. From July 5-11 we have had 2.23 inches of rain.

Location	B <sub>50</sub> Growing Degree Days Through July 11 , 2013	Precipitation (in) July 5-11 , 2013
Carbondale, IL*	1858	
Champaign, IL*	1574	
Chicago Botanic Garden**	1060 (as of 7/10)	1.04" (7/4-10)
Chicago O'Hare*	1284	
Kankakee, IL*	1468	
The Morton Arboretum	1178	2.23"
Northbrook, IL**	1186.5	.34" (7/5-10)
Quincy, IL*	1612	
Rockford, IL*	1270	
Springfield, IL*	1628	
Waukegan, IL*	1090	

\*\*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](mailto:syiesla@mortonarb.org).

## **Pest Updates: Insects**

### **Kermes scale (minor)**

Kermes scales has been reported to our Plant Clinic. This scale is showing up on bur oak. While scale might normally go unnoticed on a big oak, this insect makes itself known. As the scale crawlers mature into adults, they often settle in near the tips of the branch. When several collect in this area, it weakens the stem and the branch ends are easily dislodged in wind storms. The appearance of several twig ends on the ground tends to get the attention of the owner of the tree. Luckily there is little long term damage from the dropping of the twigs.



Figure 2 Kermes scale (Photo credit: University of Illinois Extension)

Even when examined closely, the scales may be mistaken for buds, galls or even developing acorns. Adult scale are 1/8 to ¼ inch in diameter, globe-shaped, and may be brown or black (figure 2). There are several different species with different emergence times for crawlers. They all overwinter on the bark and branches as first stage instars.

**Management:** Often none is needed since a variety of natural enemies that keep them in check. If the population warrants chemical control, dormant oil can be used to manage the overwintering population during the dormant season.

**Good website:** <http://hyg.ipm.illinois.edu/article.php?id=368>

### **Magnolia scale (potentially serious)**

The Plant Clinic is starting to get calls 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



Figure 3 Magnolia scale

sooty mold, 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.

Initially, magnolia scales are shiny, flesh-colored to pinkish brown, and smooth, but they become covered with a white mealy wax over time (figure 3). This wax is lost at the time crawlers emerge. Adult females give birth to live young, called crawlers, in late August or early September. 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.

**Management:** Before you buy a plant, check it carefully for scale. Beneficial insects, such as ladybird beetles, are frequently seen gobbling up crawlers. Fall and spring insecticide applications to control crawlers are suggested. To check for crawlers at the end of summer, put double-sided tape on each side of a scale colony. The crawlers will become stuck on the tape. This would not be used for control, just to check for the presence of crawlers.

Good web sites: <http://ohioline.ag.ohio-state.edu/hyg-fact/2000/2003.html>

[http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/Magnolia\\_Scale.html](http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/Magnolia_Scale.html)

### **Azalea bark scale (potentially serious)**

Adults of azalea bark scale (*Eriococcus azaleae*) (figure 4) have been found on the Arboretum grounds. The adult females are approximately 1/8 inch long and covered with a white waxy protective coating. They resemble small mealybugs but are nearly always found at branch crotches. If you squash them, you can see that they are actually red. Females feed on twigs and stems. The feeding sometimes causes chlorosis (yellowing) of the leaves. Branch dieback may occur in heavy infestations. This scale creates honeydew (sugary liquid insect excrement). Leaves and twigs are often covered with sooty mold, which is a dark saprophytic fungus (fungi that live on dead stuff, not on living organisms) that grows on the honeydew.



Figure 4 Azalea bark scale

Azalea bark scale overwinters as immature females. As the females mature in spring, they secrete white, waxy threads which become matted into a thick covering over their entire body. The crawlers, which are reddish pink and extremely tiny, emerge predictably at approximately 850 to 1,100 GDD and tend to settle in bark crevices and branch crotches. They use their piercing, sucking mouthparts to feed on plant sap. There is only one generation a year in this area. Common hosts are rhododendron, hawthorn poplar, and willow.

**Management:** Prune out dead or dying infested plant parts. Hand-picking method can be applied to adult scales before the crawlers hatch. Severely infested branches and twigs can be pruned

out. Apply dormant oil during winter or use an insecticidal spray in summer after all the crawlers have hatched. Beneficial insects (e.g., ladybird beetles and parasitic wasps) help control these pests, so use insecticides sparingly and only if less toxic means seem to be ineffective. Note that some summer and dormant oils may be toxic to azaleas. Also, oils should not be used on plants under drought stress or during excessive heat and humidity conditions.

Good web sites: [http://ipm.ncsu.edu/AG189/html/azalea\\_bark\\_scale.HTML](http://ipm.ncsu.edu/AG189/html/azalea_bark_scale.HTML)

<http://www.hort.uconn.edu/lpm/homegrnd/htms/43rhodo.htm>

### **Columbine leaf miner (minor)**

We are seeing mines in columbine (*Aquilegia* species and hybrids) leaves created by the columbine leaf miner (*Phytomyza aquilegivora*). Many plants this year are experiencing extensive mining. . Luckily the damage is not fatal to the plants. Damage is serpentine or snake-like white mines (figure5) in leaves, usually after the plants flower. The adults are small flies that deposit eggs on the underside of leaves. After hatching, the maggots burrow into the leaves, creating the mines

**Management:** Removing and destroying infested leaves early in the season will help reduce later infestations, because there are several generations.



Figure 5 Columbine leaf miner damage

Good web site: [http://www.urbanext.uiuc.edu/focus/per\\_aquilegia.html](http://www.urbanext.uiuc.edu/focus/per_aquilegia.html)

### **Lacebugs on white oak (minor)**

Lacebugs (*Corythucha* species) (figure 6) have been found feeding on white oak (*Quercus alba*). Lacebugs are a common pest of ornamental trees and shrubs, and most lacebug species are host specific. An exception is the hawthorn lacebug (*C. cydoniae*) that attacks several species within the *Rosaceae* family including cotoneaster, flowering quince, crabapple, mountain ash, *Pyracantha*, and hawthorn. Most lacebug species have two or more generations per year. The hawthorn lacebugs have only one generation per year.



Figure 6 Lacebug

Lacebug adults are broad, flat insects with transparent, lacy wings. They feed on the sap of the plant which causes chlorotic (yellow) flecking. Some leaves may fall off in a heavy infestation.

**Management:** There are several naturally occurring predators including green lacewings, mites, and assassin bugs. A forceful spray of water will dislodge newly hatched nymphs, and they will often die

before they find their way back to suitable leaves. Insecticides generally are not necessary except for severe infestations. Avoid using insecticides if natural predators are present.

**Good website:** <http://www.uri.edu/ce/factsheets/sheets/lacebugs.html>  
<http://edis.ifas.ufl.edu/mg326>

### Green stink bug (minor)

There are a number of different species of stink bugs that feed on a wide range of host plants. Many of their hosts are wild plants, but they can also be found on cultivated crops and ornamental plants as well. Some stink bugs are predatory on other insects. Our scouts at the Arboretum found green stink bugs this week. Green stink bug (figure 7) sucks out sap from the plant which may cause the plant tissues to be deformed or distorted. Adult stink bugs are shield-shaped and true to their name, they can produce an odor to repel predators. Young stink bugs (nymphs) are more rounded in shape and have coloration similar to their adult counterparts.



Figure 7 Adult green stink bug (photo)

**Management:** Stink bugs have a number of natural predators, so control is not always needed. In landscape plantings the damage done by stink bugs may be relatively minor and the natural enemies may be enough to keep the bugs in check. More damage can be done in commercial fruit planting where the feeding of the bugs leads to fruit that is distorted (catfacing). Chemical control may be warranted in those situations.

**Good website:** [http://entnemdept.ufl.edu/creatures/veg/bean/green\\_stink\\_bug.htm](http://entnemdept.ufl.edu/creatures/veg/bean/green_stink_bug.htm)

### Hedgehog gall (minor)

Only one gall to report this week. Hedgehog gall has been spotted by our scouts and this one is actually pretty! (figure 8). Hedgehog galls are produced by the cynipid wasp, *Acraspis erinacei*, and are usually attached to the leaf mid-vein. They range in size from 6 to 12 mm (1/4 to 1/2 inch) in diameter and are a yellow and red color.



Figure 8 Hedgehog gall

**Management:** These galls, like most leaf galls of oaks, cause no significant harm to the tree. Therefore, no controls are recommended.

## Pest Updates: Diseases

### **Oak leaf blister (minor)**

Oak leaf blister, caused by the fungus *Taphrina caerulescens*, has been found on bur oak. Leaves develop wrinkled, raised, pale whitish-yellow blisters on their upper surface (Figure 9) and corresponding pinkish-gray depressions on the lower leaf surface in spring and early summer. Blisters range from 1/10th of an inch to an inch in diameter. As they age and merge, the blisters turn reddish brown with pale yellow margins and the leaf may become distorted. Red oak (*Quercus rubra*) is the most susceptible species. Oak leaf blister, like other *Taphrina* –caused diseases, usually develops only during cool, wet springs and is more homely than harmful to the oaks. Infected leaves become distorted and may prematurely drop. The disease usually slows during the summer.



Figure 9 Oak leaf blister

**Management:** The fungus survives the winter on twigs and bud scales. On oak, leaf blister is more unsightly than harmful, so control is not a high priority.

Good web site:

<http://www.ag.uiuc.edu/~vista/abstracts/a663.html>

### **Botrytis blight (minor)**

Botrytis blight is starting to show up. This disease is most prevalent in humid conditions, which we certainly have been having. It attacks plants that are in a weakened state due to factors including poor nutrition, low light intensity, or low temperature. It is also common on senescing tissue and is often a problem in greenhouses. We often see the symptoms on flowers with many petals where moisture gets trapped, but it can be on leaves also. Tissues will turn brown (figure 10) and then become covered with fuzzy masses of gray spores (giving this disease its other name, gray mold)



Figure 10 Botrytis on petunia

**Management:** Preventing plant stress and promoting air circulation helps keep plant surfaces dry and reduces the disease severity. Practice good sanitation by removing affected plant parts to minimize spore production and spread.

**Good web sites:** <http://www.urbanext.uiuc.edu/focus/graymold.html>

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

### A couple of rusts (minor)

A couple of interesting rusts have popped up. Both are caused by fungi belonging to the genus *Puccinia*. One rust has showed up on veronica (figure 11). The spots are not the typical orange we associate with rust, but our pathologist has verified the presence of teliospores (spores common to rust diseases) of the rust fungus. Orange color may still develop.



Figure 11 Rust on veronica

Another interesting rust has shown up on elderberry in one of the local forest preserves. This is a very cool looking disease (figure 12) as it causes the stems to grow out of proportion. We have seen this rust from time to time in natural areas, but not in landscapes. In researching this rust on elderberry, we have found that the alternate host is sedge. Both hosts tend to be in natural areas, so this might explain why the disease is showing up there. Since we are now growing more sedges, we might start seeing it more. Time will tell.



Figure 12 Rust on elderberry

**Management:** These diseases are not frequently seen and at this time are not major problems. Good sanitation (removing infected parts and improving air circulation) should be suitable management techniques. Avoid planting the alternate host (sedges) near elderberry. Where elderberry is grown commercially, this disease may become more of a problem.

### *Schizophyllum commune* (serious)

Sapwood rot caused by *Schizophyllum commune* has been found on birch and maple recently. This is a common fungus that is both a saprophyte (living off of dead material) and occasionally a pathogen on trees weakened by heat, drought, or other stresses. The young maple we found it on had been planted too deep, had rocks piles at the base and had a crack in the trunk.

*Schizophyllum* enters the tree through wounds and causes a decay of the sapwood. The fruiting bodies of the fungus are small, pliable, leather-like, white conks with gills underneath. They usually grow in clusters along branches and trunks (figure 13). This fungus infects many tree species.



Figure 13 fruiting bodies of *Schizophyllum commune*

**Management:** Keep trees healthy by siting them correctly, planting correctly and mulching properly. Avoid wounds and water during dry periods.



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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, 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](mailto:plantclinic@mortonarb.org) . Inquiries or comments about the PHC reports should be directed to Sharon Yiesla at [syiesla@mortonarb.org](mailto:syiesla@mortonarb.org) .

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