Plant Health Care Report

Scouting Report of The Morton Arboretum

July 16, 2010 **Issue 2010.14**

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.

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This week's sightings:

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Two spotted spider mite
Solitary oak leafminer
Jumping oak gall
Leafcutter bee

Diseases
Lily of the valley anthracnose
Septoria leaf spot

Sightings elsewhere

Woody of the week: Kalm St. John's Wort (*Hypericum kalmianum*)

What indicator plant is in bloom at The Arboretum?
Hills of Snow Hydrangea (*Hydrangea arborescens* 'Grandiflora') is turning from white to green (Figure 1).

Accumulated Growing Degree Days (Base 50): 1466.0
Accumulated Growing Degree Days (Base 30): 3808.0

Figure 1 Hills of Snow Hydrangea (*Hydrangea arborescens* 'Grandiflora')

Degree Days and Weather Information

As of July 15, 2010, we are at 1466 base-50 growing degree days (GDD), which is approximately 17 calendar days (304 GDD) ahead of 2009 at this time, and ahead of the historical average (1937-2009) by 38 GDD. In the past week, it has only rained 0.65 inches, 20.86 in. for the year. Last year (2009) at this time, the precipitation was 26.08 in.

Location	Growing Degree Days through July 15	Precipitation (in) Between July 7-13
Aurora, IL**	1559.7	
Cahokia, IL**	2156.4	
Carbondale, IL **	2263.4	
Champaign, IL**	1869.6	
Chicago Botanic Garden (Glencoe, IL)*	1497.0	0.86
Chicago Midway	1691.5	
Chicago O'Hare*	1566.0	1.32
Decatur, IL**	1967.5	
DuPage County Airport (West Chicago, IL)**	1565.5	
Lawrenceville, IL**	2255.5	
Mattoon, IL**	1945.5	
Moline, IL**	1793.3	
The Morton Arboretum (Lisle, IL)	1466.0	0.65
Peoria, IL**	1877.9	
Quincy, IL**	1908.6	
Rockford, IL**	1554.7	
Springfield, IL**	2035.8	
Sterling, IL**	1655.1	
Waukegan, IL**	1292.7	
Wheeling, IL**	1504.1	

*Thank you to Mike Brouillard, Northbrook Park District, and 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/?zip=60185&model=2&state=IL

Weekly Reminder:

This year there seems to be more cottony maple scale reports than in years past. This scale causes the infested maples to lose their leaves and appear drought stressed. They can be treated twice a year, once in the spring before the leaves emerge and then right about now when the crawlers are active. Homeowners should contact a ISA Certified Arborist who has their IL Pesticide Applicator's License for help with treatment.

What to look for in the next week:

Next week we'll be looking for birch catkin feeders, bacterial leaf spot, black banded woolly bear, and annual cicadas

This Week's Sightings…

Azalea bark scale


Figure 2 Azalea bark scale adults and crawlers

Crawlers of Azalea bark scale (*Erlococcus azaleae*) (Figure 2) were found on Hellikki rhododendron (Rhododendron 'Hellikki'). These crawlers, which are reddish-pink and extremely tiny, probably emerged predictably a few weeks ago at approximately 850 to 1,100 GDD, but we just found them. They tend to settle in bark crevices and branch crotches, using their piercing, sucking mouthparts to feed on plant sap. The feeding sometimes causes chlorosis (yellowing) of the leaves. Branch dieback may occur in heavy infestations. This scale creates honeydew (sticky insect feces). Leaves and twigs are often covered with sooty mold, which is a dark saprophytic fungus (a fungus that lives on dead stuff, not on living organisms) that grows on the honeydew.

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. Adult females are approximately 1/8 inch long and covered with a white waxy protective coating. If you squash them, you can see that they are actually red. There is probably only one generation a year in this area. Common hosts are rhododendron, hawthorn, poplar, and willow.

Control: Prune out dead or dying infested plant parts. The "pick and squish" method can be applied to adult scales before the crawlers hatch, which means it's too late this year. Severely infested branches and twigs can be pruned out. Apply dormant oil during winter or use an insecticidal crawler 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. For specific chemical recommendations, refer to the *2010 Commercial Landscape and Turf Management Pest Handbook* (CPM) from the University of Illinois if you are a commercial applicator in Illinois or *Home, Yard and Garden Pest Guide* (HYG) if you are a homeowner.

Suggested reading: http://ipm.ncsu.edu/AG189/html/azalea_bark_scale.HTML

Two spotted spider mites


Figure 3 Two-spotted spider mite (*Tetranychus urticae*)

We are seeing the two-spotted spider mites (*Tetranychus urticae*) (Figure 3) on variegated fragrant Solomon's seal (*Polygonatum odoratum* 'Variegatum'. Two-spotted spider mites 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, which are composed of food contents. Two-spotted spider mites love hot, dry weather. 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.

Control*:* 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 shake 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.

Figure 4 solitary oak leafminer (C*ameraria hamadryadella*)

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 can be sprayed to control mites. For information about chemical control, refer to the CPM if you are a commercial applicator or the HYG if you are a homeowner.

Figure 5 Solitary oak leafminer mines

Suggested reading: http://www.ext.colostate.edu/pubs/insect/05507.html
http://ohioline.osu.edu/hyg-fact/2000/2012.html

Solitary oak leafminer

We found solitary oak leafminer (C*ameraria hamadryadella*) larvae (Figure 4) and blotch mines (Figure 5) on bur oak (*Quercus macrocarpa*). Solitary leafminer larvae feed singly and "mine-out" blotch-shaped patches just below the upper surface of the leaf. Though just one larva feeds within a mine, many larvae often congregate within a leaf, causing numerous pale brown blotches on a single leaf. The caterpillars are pale yellow, flat, and reach just 5 mm (1/5 inch) in length at maturity.

Control: Larvae overwinter within fallen leaves, so they can be controlled by raking and destroying leaves in the fall. Since leafminer injury is generally aesthetic, chemical control is not necessary.

Suggested reading:
http://www.fs.fed.us/r8/foresthealth/pubs/oakpests/p12.html

Jumping oak galls

Jumping oak galls (Figure 6) have been found on bur oak (*Quercus macrocarpa*). Caused by a small wasp, when this common oak gall falls from its host, the larvae inside causes the gall to jump up to several centimeters off the ground. The reason for the jumping isn't entirely known. It has been speculated that the jumping allows the gall to find a crevice in the soil where it will overwinter.

Figure 6 Jumping oak gall damage. Photo courtesy of Jim Baker - North Carolina State University

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

Leafcutter bees

Damage from leaf cutter bees (*Megachile* spp.) was found on redbud (*Cercis canadensis*) leaves. The bee looks like a small bumble bee, but is black and has a fringe of white hairs around her abdomen. They cut perfectly round holes in leaves (Figure 7), frequently rose leaves, to line nest cells. Leafcutter bees do not live in colonies; they are solitary. Each female excavates her own nest out of partially rotted wood or in the pith of canes and hollow-stemmed weeds (Figure 8). Usually we find the cells in a nearby wooden trellis. Nest cells are lined with the leaf pieces the bees cut. Each cell is packed with a plug of pollen and nectar and an egg is laid in it. Immature bees remain in the nest over the winter, developing into adults the following spring.

Figure 7 Leaf cutter bees (*Megachile* spp.) damage

No control is necessary. These bees are actually great pollinators.

Suggested reading:
http://www.ext.colostate.edu/pubs/insect/05576.html

Figure 8 leaf cutter bees (*Megachile* spp.) nest in the pith of a plant

Figure 9 Anthracnose (*Ascochyta majalis)* on lily-of-the-valley (*Convallaria majalis*)

Lily of the valley anthracnose

Anthracnose (*Ascochyta majalis)* is a common disease on lily-of-the-valley (*Convallaria majalis*). On this plant, it causes circular to oval, brown spots with purplish red margins (Figure 9). The spots are one-half inch in diameter or larger. Diseased tissue drops out and the foliage dies prematurely. It does not kill the plants but does weaken them. As a result of infection, there may be fewer flowers next year.

Control: Destroy diseased foliage in the fall and remove diseased plants when seen.

Recommended reading: http://www.urbanext.uiuc.edu/hortanswers/detailProblem.cfm?PathogenID=154

Figure 9 *Septoria* species spores

Septoria leaf spot

Septoria (Figure 9) leaf blight was diagnosed on tomato (*Lycopersicon*). This disease can be pretty destructive of tomato leaves. Leaves become covered with small brown and yellow spots and may fall prematurely (Figure 10). **Control:** Remove and eradicate diseased leaves to reduce inoculum. Give plants adequate space so leaves dry thoroughly and air movement is unimpeded. Don't continue to plant tomatoes in the same place. If space is an issue, plant tomatoes in containers and set them on the infested soil.

Figure 10 Small brown and yellow spots due to *Septoria* leaf blight on tomato (*Lycopersicon*)

Sightings elsewhere…

Chris Henning of the Chicago Botanical Garden reports a very bad outbreak of whitefly on two large groupings of azalea. If you bumped the plant, so many whiteflies would fall out it looked like it had really bad dandruff. They also discovered tiny, legless midge larvae named *Clinodiplosis phlox* stunting and distorting the growing tips of phlox. Their IPM department also has been dealing with leafspots on zinnia and powdery mildew on some of our annual displays.

Woody of the Week

by Jaime Horn

The Woody of the Week is written to aid in basic botanical identification of the featured plant, while adding to the reader's knowledge bank of woody plants. Many of the terms used are standard for describing plant morphology and may require definitions for complete understanding. There are several publications on botanical terminology. Two of these publications are *Plant Identification Terminology: An Illustrated Glossary* by J.G. Harris and M. Woolf Harris and the Plant Morphology section in Michael Dirr's *Manual of Woody Landscape Plants* (page xiv) for pictures and descriptions.

Kalm St. John's Wort (*Hypericum kalmianum*)

Family: Hypericaceae
Native: Quebec, Ontario, Michigan, Illinois
Mature Size: 2-3' x 2-3'
Hardiness: Zones 4-7
Foliage: Opposite, oblanceolate, up to 2" long and 1/3" wide, dark blue-green, glaucous underneath, semi-evergreen, impressed midvein, resembling a willow.
Bud/Stem: Buds are not visible, partially developed leaves are clustered at nodes and persist through winter. Stem is brown and 4-angled, exfoliating with age.
Flower: Bright yellow, 5 yellow petals with a mass of yellow

Figure 11 Kalm St. John's Wort (*Hypericum kalmianum*). Photo courtesy of John Hagstom

stamens held above, beautiful and interesting, up to 1 ½" wide, occur in 3-flowered cymes, July
Fruit: A useful identification feature, 4-5 celled capsule, red-brown, persistent.
Culture/Usage: Place *Hypericum* in full sun to part shade and it tolerates acid or alkaline soils. Prune in early spring. It's great in masses in the shrub border, a great addition to a landscape for its unique summer flowers. St. John's Wort is a relatively low-maintenance, problem-free plant, but may die back to the ground in a harsh winter
GET AN UP-CLOSE VIEW!
Cultivar 'Gemo' is in bloom along the path from the West side to the Visitor Center. Grid location: M-43/28-38
Interesting fact of the week: The name *Hypericum* is of greek origin, originally called *Hypereikon* (*Hyper*—above, *eikon*—image). In ancient times, it was believed to keep evil spirits away, so its flowers were placed above doors and windows during the June 24th feast of St. John. Wort is an old English term for plant. Hence, the common name of St. John's Wort. The species *H.* perforatum has been used medicinally to treat depression. This species was named in honor of Peter Kalm, who discovered the plant as a student of Linnaeus in the mid 18th century.

Literature used to write the Woody of the Week:

Michael Dirr. 1998. *Manual of Woody Landscape Plants*. ISBN-10: 0-87563-800-7.
Harris, J.G. and M. Woolf Harris. 2001. *Plant Identification Terminology: An Illustrated Glossary*. ISBN-13: 978-0964022164.

The Plant Health Care Report is prepared by Stephanie Adams, M.S., Plant Health Care Technician, and edited by Donna Danielson, M.S., Plant Clinic Assistant; Fredric Miller, Ph.D., research entomologist at The Morton Arboretum and professor at Joliet Junior College; and 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 that scouted this past week and found most of the insects and diseases that are in this report. The Scouting Volunteers include: LeeAnn Cosper, Fritz Porter, Ann Klinglele, and Loraine Miranda. Your hard work is appreciated.

Literature recommendations:

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University of Illinois. 2008. *Home, Yard & Garden Pest Guide.* https://pubsplus.uiuc.edu/C1391-08.html.

UIPlants: The Woody Plant site for the University of Illinois http://woodyplants.nres.uiuc.edu.

This report is available on-line 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 Stephanie Adams at sadams@mortonarb.org.