

Plant Health Care Report

Scouting Report of The Morton Arboretum

June 18, 2010

Issue 2010.10

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.

Quick View

What indicator plant is in bloom at The Arboretum?

American elderberry (*Sambucus canadensis*) (Figure 1)

Weekly reminder

What to look for in the next week

Accumulated Growing Degree Days (Base 50): 826.5

Accumulated Growing Degree Days (Base 30): 2648.5

This week's sightings:

Insects

- Gouty vein gall
- Half-wing caterpillar feeding damage
- Cynipid wasp galls
- Mountain ash sawfly

Diseases

- Black spot of elm
- Mosaic virus on katsura
- Hollyhock rust
- Cercospora leaf spot

Fungus of the week: *Mutinus caninus*

Woody of the week: Hills of Snow Hydrangea
(*Hydrangea arborescens* 'Grandiflora')



Figure 1 American elderberry (*Sambucus canadensis*). Close-up photo of the flower heads (top), whole plant photo (bottom)

Degree Days and Weather Information

As of June 16, 2010, we are at 826.5 base-50 growing degree days (GDD), which is approximately 10 calendar days (255 GDD) ahead of 2009 at this time, and ahead of the historical average (1937-2009) by 59 GDD (four calendar days). In the past week it has rained 2.06 cm (0.81 in), 11.94 cm (4.70 in) precipitation in June, and 37.6 cm (14.79 in) for the year.

Location	Growing Degree Days through June 16	Precipitation (in) Between June 11 – 16
The Morton Arboretum (Lisle, IL)	826.5	0.81
Chicago Botanic Garden (Glencoe, IL)*	787	1.02
Chicago O'Hare*	855.5	1.13
Aurora, IL**	867	
Carbondale, IL **	1401.3	
Cahokia, IL**	1305.3	
Champaign, IL**	1122.2	
Chicago Midway	930.4	
DuPage County Airport (West Chicago, IL)**	852.1	
Decatur, IL**	1165	
Lawrenceville, IL**	1408.8	
Mattoon, IL**	1193.7	
Moline, IL**	1039.2	
Peoria, IL**	1105.5	
Quincy, IL**	1125.1	
Rockford, IL**	857.5	
Springfield, IL**	229.4	
Sterling, IL**	948.1	
Waukegan, IL**	663	
Wheeling, IL**	773.4	

*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 cannot be said enough: Mulch your trees! One of the easiest and long term ways you can improve your tree's health is by removing any turf that's near the stem, and then adding mulch. In a perfect world all turf would be removed and mulch added to the entire area under a tree's canopy. In reality at least a three-foot-radius circle around the stem is sufficient to benefit your trees. When adding mulch be sure not to "volcano mulch", which is when excess mulch is piled up onto the stem. For more information on proper mulching please visit the TreesAreGood.com website: <http://www.treesaregood.com/treecare/mulching.aspx>

What to look for in the next week:

Island chlorosis on hackberry, Seiridium canker, Japanese beetle, Guignardia leaf blotch, two-spotted spider mites, yellowwood anthracnose, scorch, sooty mold, and Thyronectria canker

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 Cospser and Fritz Porter. Your hard work is appreciated.

This Week's Sightings...

Gouty vein gall

Gouty vein galls (Figure 2) were found on the leaves of sugar maple (*Acer saccharum*). These galls are produced by the plant's reaction to egg laying of the gouty vein gall midge (*Contarinia negundinis*). These galls are hard, light green, yellow, and red elongate swellings that occur along mid- and lateral leaf veins of maple species. Although they do cause the leaves to become disfigured, they do very little harm.

Suggested reading:

<http://ohioline.osu.edu/hyg-fact/2000/2004.html>

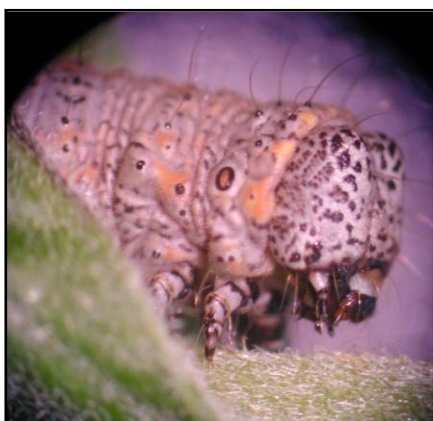


Figure 3 Half-wing caterpillar (*Phigalia titea*)



Figure 2 Gouty vein galls on sugar maple (*Acer saccharum*)

Half-wing caterpillar feeding damage

The half-wing caterpillar (*Phigalia titea*) (Figure 3), feeding damage was found on hickory (*Carya sp.*) (Figure 4). It is a blue-gray caterpillar with black pinstripes running the length of the body. Additionally there are orange and yellow patches with black spots in each. They have a looper-like habits, which means they stand on their hind legs and look around in a wavy, loopy-like fashion. Common food plants include American hornbeam (*Carpinus sp.*), apple (*Malus sp.*), linden (*Tilia sp.*), birch (*Betula sp.*), elm (*Ulmus sp.*), hickory (*Carya sp.*), maple (*Acer sp.*) and oak (*Quercus sp.*). They only eat newly emerged foliage in the spring. If you offer them only older foliage, the caterpillars will starve.

The half-wing caterpillars hatch in April and larvae feed until early June. The pupa overwinters in litter or soil. They emerge as adults from late March to mid April. The females are flightless. Eggs are deposited in bark crevices in early spring. There is one generation per year.

Control: Treatment is seldom needed



Figure 4 Damage on hickory (*Carya sp.*) due to half-wing caterpillar (*Phigalia titea*) feeding

Two-Marked tree hoppers

Two-marked treehopper (*Enchenopa binotata*) nymphs (Figure 5) were found on black walnut (*Juglans nigra*) tree shoots. For some reason, we've always been fond of these little guys. They're about 1/8 inch long, dark gray to brown, and have spines sticking out of their abdomens. The nymphs look quite different from the adults. Adults are dusky brown with



Figure 5 Two-marked treehopper (*Enchenopa binotata*) adult

two yellow spots on their backs (thus the name), have high, curved horns that point forward coming out of their thorax, and are less than ½ inch long. Both stages can, as you may imagine by their name, jump! Everyone should see two marked treehoppers at least once in their lives, because they're so amusing the way they march along on twigs. Nymphs and adults suck plant juices, but don't do much damage. The damage appears as pale yellow stippling on the leaves. Treehoppers do, however, produce honeydew which encourages sooty mold. Female adults can injure twigs by laying eggs in slits made in the bark. Black locust, bittersweet, wafer-ash, redbud, and viburnum are also hosts for this insect.

Control: Control is usually not necessary.

Suggested reading: http://www.na.fs.fed.us/spfo/pubs/howtos/ht_walnut/treehop2.htm



Figure 6 Cynipid wasp galls on Bur oak

Cynipid wasp galls

Cynipid wasp galls (Figure 6) were found on Bur oak (*Quercus macrocarpa*) leaves. The gall is made by the cynipid wasp (*Neuroterus saltatorius*). Oak pea galls are circular and young galls are light green, rose-tinted, then becoming yellow or brown and a diameter of 3/8 of an inch.

Control: No harm is done to the trees of these galls; it is a purely aesthetic problem.



Figure 7 Mountain ash sawfly (*Pristophora geniculata*)

Mountain-ash sawfly

Mountain-ash sawfly larvae (*Pristophora geniculata*) (Figure 7) was found eating a mountain ash (*Sorbus americana*) at The Morton Arboretum. These sawflies have two generations per year, the second emerge in late summer. They are a bigger problem east of the Mississippi, where they can defoliate a tree (Figure 8). Like the European pine sawfly, they feed in groups and rear-up when they feel threatened.

Control: Remember that *Bacillus thuringiensis* 'Kurstaki' does not work on sawflies, but there are chemical controls available. Chemical



Figure 8 Mountain ash sawfly (*Pristophora geniculata*) feeding damage on mountain ash (*Sorbus americana*)



Figure 9 Black spot of elm, caused by the fungus (*Stegophora ulmea*), on *Ulmus americana* 'Moline'

controls should be applied while the larvae are feeding, which is now. For chemical control, refer to the *Commercial Landscape and Turfgrass Pest Management Handbook 2010* (CPM) or *Home, Yard and Garden Pest Guide* (HYG).

Black spot of elm

Black spot of elm (Figure 9), caused by the fungus (*Stegophora ulmea*), has been found on the leaves of Moline American elm (*Ulmus americana* 'Moline'). This disease first appears as small black leaf spots. Later, spots may coalesce to form irregular black blotches up to ¼ inch wide. Wet seasons, which we are having, may cause severe blighting of young leaves and succulent shoots or complete defoliation by early August. Symptoms normally progress from low branches to high ones. Susceptible elms include American, Chinese, Dutch, Japanese, Scotch, and Siberian.

Control: This disease is one of several “anthracnose” diseases we see each year. Dead leaves and shoots should be collected and pruned out during dry

weather to reduce inoculum. Chemical controls are available but are not usually necessary. Refer to the CPM or HYG for specific chemical recommendations.

Suggested reading: <http://www.ento.okstate.edu/ddd/diseases/elmblackspot.htm>



Figure 10 Ascospore of the fungus *Stegophora ulmea*, the causal agent of black spot of elm (magnification 40x)

Mosaic virus on katsura



Figure 11 Mosaic virus symptoms on katsura tree (*Cercidiphyllum japonicum*)

Mosaic virus symptoms have been seen on Katsura tree (*Cercidiphyllum japonicum*) (Figure 11) for a week or two now at The Arboretum. The symptoms of the viral infection are patchy spots of light green or tan tissue between veins and some marginal necrosis. Viral diseases are studied and well understood in agricultural crops, but have not yet been extensively studied in ornamental or shade trees. The interesting thing about viral infections is that the virus does not “want” to kill the host, because it needs the host in order to reproduce, but it does make the host weaker and more susceptible to other infections. Viruses are unable to move on their own, they rely on vectors to move them around. The vectors may be insects, humans, or anything else that can carry the viral particle and create a piercing wound into the host. The only way to prevent a viral disease is to control the vector. Once the tree has a viral disease, it will have it for life.

Management: The best way to manage a viral disease is to improve the health and vigor of the host. Running a soil test and adding the needed nutrients to the soil, mulching, and watering during dry periods are the best ways to manage.



Figure 12 A hollyhock leaf showing symptoms, orange spots, of rust

Hollyhock rust

A sample of hollyhock rust was brought into The Arboretum's Plant Clinic recently. This disease is caused by the fungus *Puccinia malvacearum*. The symptom of the infection is orange pustules on the leaves, which will eventually cause dieback. This rust disease does not have an alternate host, but the common mallow weed (*Malva rotundifolia*) is capable of harboring *P. malvacearum*.

There are modern varieties of hollyhock that are less susceptible to the disease than some of the older varieties. Gleason *et al.* in *Diseases of Herbaceous Perennials* suggests the resistant varieties *Alcea rugosa*, (Russian hollyhock) and *A. ficifolia* (fig-leaf hollyhock) are both relatively resistant.

Control: The fungus overwinters as telial spores in the fallen leaf debris. Removing infected tissue when the symptoms are first noticed is the best cultural management practice. There are chemical controls available. Refer to the CPM or HYG for specific chemical recommendations. When chemical controls are applied, to get the best coverage, add a wetting agent to the mix.

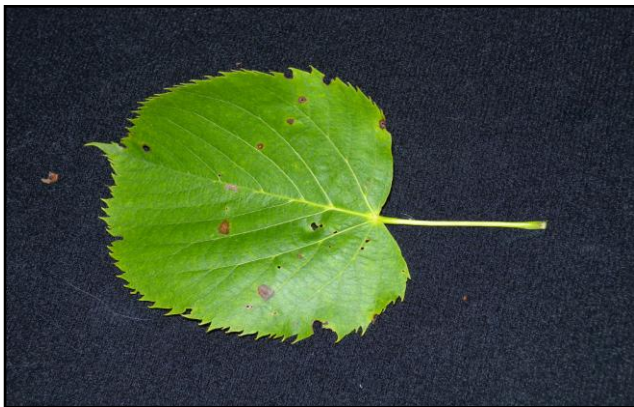


Figure 14 Cercospora leaf spot symptoms on basswood (*Tilia americana*)



Figure 13 Telial spores of *Puccinia malvacearum*, the causal agent of hollyhock rust

Cercospora leaf spot

Cercospora leaf spot, caused by a *Cercospora* species, was found on basswood (*Tilia americana*) (Figure 14). The spots are about ¼ inch in diameter and dark brown with a distinct margin. There is a yellow halo around most of the spots. The microscopic fungal spores are long, thin, and multi-cellular.

Control: Like other leaf spots, damage in the latter part of the growing season causes minimal stress to the tree overall. Gathering and destroying the leaves in the fall helps reduce inoculum. The inoculum of this disease overwinters in fallen leaves; therefore, rake up and discard or compost fallen leaves in the fall. Practices that improve air circulation and keep humidity levels around the tree low will minimize spread. Chemical control is probably not necessary.

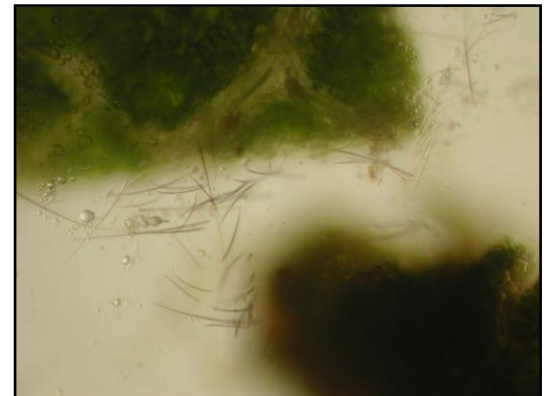


Figure 15 Conidia of *Cercospora* isolated from basswood

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.

Hills of Snow Hydrangea (*Hydrangea arborescens* 'Grandiflora') (Figure 16)

Family: Hydrangeaceae

Native: New York to Iowa to Florida. Introduced in 1736.

Mature Size: 3-5' x 3-5'

Hardiness: Zones 3-9

Foliage: Opposite, dark green, 3-8" long, serrate margins, may turn brown in fall.

Bud: 4-6 scaled imbricate buds, green-brown, diverge from the stem, up to ¼", longer than buds of *H. paniculata*. Stems are grayish-brown, stout, shiny, and smooth, older stems exfoliate.

Flower: Creamy-white, appear from June to August or later, flower heads up to 8" in diameter, composed primarily of sterile white flowers (Figure 17), becoming floppy, sepals are larger than 'Annabelle'.

Fruit: Dehiscent capsule, non-ornamental, may persist into winter and can be left for interest if desired.

Culture/Usage: Smooth Hydrangea is an adaptable plant that grows best in partial shade, but is intolerant of drought. If soil is consistently moist, it can tolerate full sun. Since this plant blooms on new wood, it is best to prune them to the ground in late winter. Though the stems of this cultivar tend to be stronger than the straight species, the heavy flowers may cause an untidy, floppy appearance. They are useful for their showy flower display. Like other hydrangeas, wilt, mildew, four-lined plant bug, and leaf spot may be a problem—but these shrubs are generally problem-free.

GET AN UP-CLOSE VIEW!: In the Groundcover Garden, near the walk to Administration, currently blooming. Grid Location J-43/40-17.

Interesting fact of the week: In 1993, the Royal Horticultural Society of Great Britain bestowed this plant the Plant of Merit Award. The name *Hydrangea* is derived from the Greek terms *hydor* (water) and *angos* (a jar), referring to its cup-shaped fruit. *Arborescens* is a term meaning "tending to be woody."



Figure 16 Hills of Snow Hydrangea (*Hydrangea arborescens* 'Grandiflora')



Figure 17 Sterile white flowers of the hills of snow hydrangea (*Hydrangea arborescens* 'Grandiflora')

Fungus of the Week: *Mutinus caninus*



Figure 18 *Mutinus caninus*

This stinkhorn fungus, more than any other, cause people to blush when they try to describe it to the Plant Clinic staff here at The Arboretum. *Mutinus caninus*, and its relative's belong to the Order Phallales and Family Phallaceae. Aside from *Mutinus caninus* phallic form, its smell is often its defining feature. I have noticed that I often smell them before I see the mushroom from several meters away. This "clever" fungus produces a smell that attracts flies, which spread its spores. The spores are the brown slimy portion of the top of the thallus. When the flies land on *M. caninus* the spores stick to the flies, which carry them away. They grow nearly everywhere in the mid-western and eastern United States where there is decaying wood, however, they are not tree or plant pathogens.

This is what David Arora says about the edibility, "Opinions on the edibility of stinkhorns range from ill-disguised disgust to idle speculation to passionate praise. The "intolerable" odor of mature specimens would seem to be enough to discourage even the most ardent and confirmed toadstool-tester from sampling them. However, the odorless stinkhorn "eggs" are considered a delicacy in parts of China and Europe, where they are pickled raw and even sold in the markets (sometimes under the name "devil's eggs")." None of the stinkhorns are known to be poisonous, but I would never know. Happy Hunting!

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.

Literature recommendation:

David Arora. 1986. *Mushrooms Demystified 2nd ed.* Ten Speed Press. Berkeley, CA. ISBN-13: 0-89815-169-4.

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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.

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