

Plant Health Care Report

Scouting Report of The Morton Arboretum

July 9, 2010

Issue 2010.13

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.

In Memoriam ... This past Sunday, our beloved Dr. George Ware lost his year-long battle with cancer. Passionate about trees and sometimes known as "Dr. Elm", Dr. Ware was involved in research at The Morton Arboretum for nearly forty years. He was a respected dendrologist known throughout the world. His progressive ideas helped evolve the species that are commonly available for urban planting today. A few of Dr. Ware's cultivars that The Arboretum has released, and are commonly available across the country, are the Accolade Elm®, Triumph Elm™, and Commendation Elm™. He was a patient, humble man and always available to share his knowledge about trees. Dr. Ware will be dearly missed.

Quick View

Weekly reminder

What to look for in the next week

This week's sightings:

Insects

- Gypsy moth update
- Woolly larch adelgids

Diseases

- Nectria canker
- Sooty mold
- *Pseudocercospora fuliginosa* on persimmon
- Botryosphaeria canker

Woody of the week: Common Trumpet creeper
(*Campsis radicans*)

Fungus of the week: *Botrytis cinerea* (grey mold)

What indicator plant is in bloom at The Arboretum?

Queen Anne's lace (*Daucus carota*) (Figure 1)

Accumulated Growing Degree Days (Base 50): 1249

Accumulated Growing Degree Days (Base 30): 3430



Figure 1 Queen Anne's lace (*Daucus carota*)

Degree Days and Weather Information

As of July 8, 2010, we are at 1249 base-50 growing degree days (GDD), which is approximately 14 calendar days (238.5 GDD) ahead of 2009 at this time, and ahead of the historical average (1937-2009) by 14 GDD. As you read the table below, note that Waukegan is about 928 GDD behind Carbondale. In the past week it has rained 0.94 inches, 20.21 in. for the year. Last year (2009) at this time the precipitation was 24.59 in.

Location	Growing Degree Days through June 23	Precipitation (in) Between July 17 – 23
Aurora, IL**	1347.6	
Cahokia, IL**	1916.3	
Carbondale, IL **	2023.8	
Champaign, IL**	1649.0	
Chicago Botanic Garden (Glencoe, IL)*	1303	0.05
Chicago Midway	1469.4	
Chicago O'Hare*	1368	0.32
Decatur, IL**	1738.8	
DuPage County Airport (West Chicago, IL)**	1352	
Lawrenceville, IL**	2107.8	
Mattoon, IL**	1723	
Moline, IL**	1578.1	
The Morton Arboretum (Lisle, IL)	1249.0	0.94
Peoria, IL**	1657.1	
Quincy, IL**	1668.6	
Rockford, IL**	1347	
Springfield, IL**	1808.2	
Sterling, IL**	1444.8	
Waukegan, IL**	1094.6	
Wheeling, IL**	1287.5	

*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:

The best way to have low-maintenance trees is to focus pruning and cultural practices around them when they're small. Newly planted trees should not be pruned until the year after planting. At this time, and for the next 5-10 years, removing poor branch attachments and correcting bad structure will result in a mature tree that won't need much pruning. Yes, all trees need pruning at some time in their lives, whether it is to remove deadwood, to fix storm damage, or just regular canopy thinning. Correcting bad structure when the tree's young will prevent the poorly attached branches from failing when they're much larger later on. Hire an ISA Certified Arborist to come out to assess your trees. Getting your trees on a regular pruning cycle (3, 5, or 7 yrs.) will improve its life for the long term.

What to look for in the next week:

Periodical cicada, two-spotted spider mite, azalea bark scale, ash virus, tar spot of maple, yellow bear caterpillar

This Week's Sightings...

Gypsy moth update

The pheromone traps at The Morton Arboretum have been up for a week and several male gypsy moths have been collected. Adult males (Figure 2) are brown with black markings, feathered antennae, and have a wingspan of one and a half inches (Figure 2). Female moths are white to cream-colored with black markings on their wings and have a wingspan of about two inches. Although winged, the females are too heavy to take flight.

Females lay egg masses in July and August on branches and trunks of trees. They are also found in sheltered locations such as under loose bark, in woodpiles, on outdoor furniture, or the undersides of vehicles. The egg masses are buff colored, covered with hairs, and about one and a half inches long. It is easiest to wait until the leaves are fallen off the tree in autumn to look for egg masses.

Control: Gypsy moth control was mentioned in issue 2010.01
http://www.mortonarb.org/images/stories/pdf/plant_healthcare_reports/PHCR_April_2_2010.pdf

Suggested reading: <http://www.agr.state.il.us/Environment/Pest/gypsymoth.html>
<http://www.fs.fed.us/ne/morgantown/4557/gmoth/>



Figure 2 Adult male gypsy moth

Woolly larch adelgids



Figure 3 Woolly larch adelgids (*Adelges laricis*)

Woolly larch adelgids (*Adelges laricis*) (Figure 3) have been found on a few of our European larches (*Larix decidua*). They look like tiny white flecks. The insect covers itself with white woolly material for protection. When heavily infested, larches look like they have snow on them! When infestations are heavy, sooty mold and needle distortion develop, but usually it doesn't cause significant injury to the tree.

Control: Controls are rarely necessary as this adelgid does not cause significant harm to the tree.

Suggested reading:
<http://www.forestpests.org/poland/larchwooly.html>

Nectria canker

Nectria canker (i.e. coral spot) (Figure 4), caused by a fungus called *Nectria cinnabarina*, was found on honeylocust (*Gleditsia triacanthos*). This is one of several *Nectria* species that infect trees. *Nectria* canker causes leaves to wilt and wither. Slightly sunken cankers appear on the branches near wounds.

The most easily identifiable characteristic is the red-orange sporodochia (cushion-shaped fruiting bodies) that appear on the bark, which is asexual part of the fungus's lifecycle. However, this time the sexual stage of its lifecycle was found, where the perithecia (the sac that holds the sexual ascospores (Figure 5)), was found on branches. The ascospores are normally released in the spring, where they are dispersed by wind and rain. Once the ascospores make contact with a suitable substrate (a branch of a host-plant), they penetrate the bark and begin creating cankers.

Nectria canker is commonly associated with trees that have been injured or stressed. Once a branch or stub has been infected, the fungus spreads to other parts of the tree. *Nectria* has an extremely wide range of hosts, but linden (*Tilia* spp.), horse chestnut (*Aesculus* spp.), elm (*Ulmus* spp.), honeylocust (*Gleditsia triacanthos*), and maple (*Acer* spp.) are especially susceptible.

Control: Prevention is the best control. Keep trees mulched and watered during dry periods, especially if they have recently been transplanted. Prune and destroy infected branches during dry weather. Disinfect pruning tools between cuts. Avoid wounding the tree because the fungus enters the tree through wounds.

Suggested reading:

http://www.mortonarb.org/plantinfo/plantclinic/diseases_cankerdiseases.pdf



Figure 4 *Nectria* canker on honeylocust. Photo courtesy of USDA Forest Service - Ogden Archive



Figure 5 Ascospores of *Nectria cinnabarina* (40x)

Sooty mold



Figure 6 Sooty mold on alder

Sooty mold (Figure 6) was found on saucer magnolia (*Magnolia soulangiana*). This looks like a black coating and lives on the surfaces of leaves. To be sure it is sooty mold, try rubbing it off the leaf. It should come off relatively easily. The black coating is actually a dark fungus. These are saprophytic fungi that live on insect honeydew (sugary insect excrement), in this case created by magnolia scale. If you see sooty mold, look for the insect that created the honeydew, which could be scale, aphids, or other sap suckers. Sooty molds harm plants indirectly by blocking out light and reducing photosynthesis. They have no host preference as far as we know. There are two types of sooty mold growth. The first is growth on leaves, which lasts for the life of the leaf. The second is a persistent growth on stems and twigs of woody plants and also on outdoor structures and furniture. They are normally considered an aesthetic problem.



Figure 7 Leaf blotches caused by the fungus *Pseudocercospora fuliginosa* on common persimmon (*Diospyros virginiana*)

Control: Sooty mold is best controlled by controlling the honeydew producing insect. Remember, you need to identify the insect to control it. Ohio State University claims that a strong spray of water can be used to dislodge the mold growth from many plants.

Suggested reading:

<http://plantclinic.cornell.edu/FactSheets/sooty/sootymold.htm>

http://na.fs.fed.us/spfo/pubs/howtos/ht_sooty/ht_sooty.htm



Figure 8 Sporulation of *Pseudocercospora fuliginosa* (40x)

***Pseudocercospora fuliginosa* on persimmon**

Leaf blotches caused by the fungus *Pseudocercospora fuliginosa* were found on common persimmon (*Diospyros virginiana*). The blotches caused by *P. fuliginosa* are often angular and range from 0.4-4 mm, according to Sinclair and Lyon, 2005. The purple-black blotches occur on both leaf surfaces. Although blotches occur on both leaf surfaces, it usually sporulates from the underside (Figure 8). Heavily infected leaves will turn yellow and drop early.

Control: The fungus exists within the persimmon’s native range. Since it is a late-season foliar disease, control isn’t needed. To decrease infections for the following year, remove all infected tissue from the property as soon as it drop.



Figure 9 Botryosphaeria canker on maple (*Acer* sp.)

Botryosphaeria canker

Branch wilting symptoms of Botryosphaeria canker (Figure 9), caused by the fungus *Botryosphaeria ribis*, has been found on hawthorn. This common canker disease causes branch wilting and dieback. Sunken areas with swollen ridges (cankers) form on infected bark. These cankers cut off sap flow, girdling branches, and cause leaves to turn yellow, brown, and then wilt. Branches die beyond the point of girdling.

Botryosphaeria cankers are usually cracked, dry, discolored, and covered with small black fruiting bodies that can be seen with a hand lens. The spores of the *Sphaeropsis* (asexual) stage of *Botryosphaeria*’s lifecycle are brown conidia (Figure 10) and are found in black pycnidium on the bark surface. The sapwood beneath a canker dies and is discolored brown.

The disease is also common on many trees including apple, birch, dogwood, elm, hickory, horsechestnut, linden, oak, and sycamore. Botryosphaeria infects both healthy and stressed trees, but the disease is more severe on plants stressed by drought, heat, freezing, defoliation, and planting outside native ranges.

Control: Prune infected branches during dry weather to keep spores from spreading. Prune at least 6 to 8 inches below affected tissue, and to prevent the spread of the disease, clean pruning tools with 70% alcohol (or similar) in between cuts. Remove diseased branches from the site since the fungus can persist and sporulate in dead plant

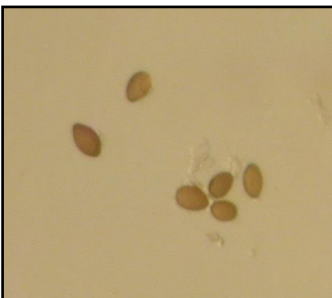


Figure 10 Conidia of *Sphaeropsis*, the asexual stage of *Botryosphaeria* canker infection

material. Keep trees healthy by watering during drought periods and mulching properly. Avoid wounding the tree since the fungus can enter through tree wounds.

Suggested reading:

<http://hyg.ipm.illinois.edu/pastpest/200213b.html>

<http://pubs.ext.vt.edu/450/450-726/450-726.html>

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.



Figure 11 Common trumpet creeper (*Campsis radicans*) Photo courtesy of John Hagstrom

Woody of the week: Common trumpet creeper (*Campsis radicans*)

Family: Bignoniaceae

Native: Pennsylvania to Missouri, Florida, Texas. This plant was introduced around 1640.

Mature Size: 30-40', deciduous clinging vine, will grow to size of the structure it climbs on, grows fast! Dirr's description of *C. radicans*'s growth rate is, "Fast; keep your legs moving when in the vicinity of this plant."

Hardiness: Zones 4-9

Foliage: Oppositely arranged, up to 15" long, pinnately compound, 7-11 leaflets, coarsely toothed, short-stalked, leaflets 1-4" long, lustrous dark green turning yellow-green in fall.

Bud/stem: Small buds, partially imbedded in stem, triangular, 2-3 pairs of exposed scales. Stem is thick, large leaf scars are connected with a characteristic raised ridge of hairs (useful in identification), root-like structures form on stem where the plant attaches to surfaces, pith is solid brown.

Flower: Variation in shades of orange to red, trumpet-shaped, up to 3" long, borne in cymes at the end of stems from July through September, flowers on new growth,

Fruit: Slender capsules, 3-5" long.

Culture/Usage: A great plant for the beginning gardener, for it is very easy to grow in any type of soil. It prefers full sun to partial shade. This plant is very vigorous and fast-growing, and pruning is necessary to keep plant size in check. It is best to prune in the spring. Deadheading promotes re-bloom. It has some problems including leaf spot, powdery mildew, scale, and whitefly, but they do not cause serious damage to the plant. It is useful for screens,



Figure 12 Common trumpet creeper flowers. Photo courtesy of John Hagstrom



Figure 13 Fruit of the common trumpet creeper. Photo courtesy of John Hagstrom

covering a rock wall, or in areas where little else will grow. 'Flava' is a yellow-flowering cultivar.

GET AN UP-CLOSE VIEW!: Wander out to the Northern Illinois Collection to view this plant (currently in flower!) growing up a trellis: Grid Location: L-58/66-66.

Interesting fact of the week: What's in a name? The derivation of botanic names sometimes gives clues about a plant's features. Our Woody of the Week this week is one of those instances. *Campsis* comes from the Greek word for curved or bent: *kampe*. The stamens of the flowers on this plant are curved. *Radicans* is a term used for plants with rooting stems. The root-like structures formed on the plant are a great identification feature!

Fungus of the week: *Botrytis cinerea* (grey mold)

Botrytis cinerea (Figure 14) is a mold that most people are familiar with, but don't think about. It is the fungus that is responsible for your strawberries becoming grey and fuzzy or for your geranium flowers to suddenly blight. This little grey mold is commonly found in the environment. It favors cool and wet conditions. It is often found in garden centers, produce markets, your refrigerator, and in your garden. Luckily, considering how common it is, it is not harmful.

It tends to grow on plants that are stressed, including propagation cuttings (Figure 15). If you find that you have this fungus growing on landscape plants, removing the infected tissue, increasing air circulation, and keeping the foliage dry are the best cultural management practices. When you remove the infected tissue, use a damp paper towel to wrap the infected area before cutting it off. The reason for doing this is that when disturbed, even slightly, *B. cinerea* releases its thousands of spores into the air, which can spread the infection.



Figure 14 *Botrytis cinerea*, each white-grey ball is a spore

Suggested reading:

http://plantclinic.cornell.edu/FactSheets/botrytis/botrytis_blight.htm

<http://www.urbanext.uiuc.edu/focus/graymold.html>



Figure 15 *Botrytis cinerea* infection of a maple cutting

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, and Laurie Blackmon. Your hard work is appreciated.

Literature recommendations:

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

Michael Dirr. 1998. *Manual of Woody Landscape Plants.* ISBN-10: 0-87563-800-7.

Mark L. Gleason, Margery L. Daughtrey, Ann R. Chase, Gary W. Moorman, and Daren S. Mueller. 2009. *Diseases of Herbaceous Perennials.* ISBN: 978-0-89054-374-0

Harris, J.G. and M. Woolf Harris. 2001. *Plant Identification Terminology: An Illustrated Glossary.* ISBN-13: 978-0964022164.

Donald A. Orton. 2007. *Coincide, The Orton System of Pest and Disease Management.* Publisher website:

<http://www.laborofloveconservatory.com/>.

F.W.M.R. Schwarze. 2008. *Diagnosis and Prognosis of the Development of Wood Decay in Urban Trees.* ISBN: 978-0-646-49144-8.

F.W.M.R. Schwarze, J. Engels, and C. Mattheck. 2000. *Fungal Strategies of Wood Decay in Trees.* ISBN: 3-540-6705-2.

Triplehorn, C.A and N.F. Johnson. 2005. *Study of Insects.* 7th ed. Brooks/Cole, Cengage Learning. Pp. 606-7.

William T. Stearn. 2002. *Stearn's Dictionary of Plant Names For Gardeners.* ISBN-10: 088192556X.

University of Illinois. 2010. *The 2010 Commercial Landscape & Turfgrass Pest Management Handbook.*

<https://pubsplus.uiuc.edu/ICLT-10.html>.

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.