

Plant Health Care Report

Scouting Report of The Morton Arboretum

July 11 - 18, 2008

Issue 2008.14

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.

The weather is heating up, so be careful out there. Be sure to drink plenty of water and wear sun block.

Quick View

What Indicator Plants are in Bloom at the Arboretum?

Queen Anne's lace, also known as wild carrot (*Daucus carota*), is in bloom. It is an invasive weed, but still a good indicator plants.



Accumulated Growing Degree Days (Base 50): 1246.0

Insects

- Basswood lacebug
- Ailanthus webworm
- Potato leafhoppers
- Gypsy moth update

Diseases

- Diplodia tip blight
- Bacterial leaf spot of ivy
- Rust on mayapple, bee balm, and goldenrod
- Hosta virus X
- Daylily leaf streak

Miscellaneous

- Big Bugs!

Degree Days and Weather Information

As of July 17, 2008 we are at 1246.0 growing degree days which is ten days behind the historical average (1937-2007) and 14 days behind last year.

Location	Growing Degree Days through July 17	Precipitation between July 11 - 17 in inches
The Morton Arboretum (Lisle, IL)	1246.0	1.53
Chicago Botanic Garden (Glencoe, IL)*	1206.5	1.34
Chicago O-Hare Airport*	1305.5	
Aurora, IL	1278.5	
Bloomington, IL	1429.0	
Champaign, IL	1516.0	
DuPage County Airport (West Chicago, IL)	1323.0	
Midway Airport	1418.0	
Danville, IL	1638.5	
Decatur, IL	1599.0	
DeKalb, IL	1279.0	
Moline, IL	1475.0	
Palwaukee Airport (Wheeling, IL)	1275.0	
Peoria, IL	1555.5	
Peru, IL	1577.5	
Pontiac, IL	1397.5	
Rantoul, IL	1675.5	
Rockford, IL	1333.0	
Romeoville, IL	1300.5	
Springfield, IL	1606.5	
Waukegan, IL	1086.0	
Madison, WI	1138.5	
Milwaukee, WI	1030.0	

**Thank you to Mike Brouillard, Green Living, Inc. and Chris Yooning, Chicago Botanic Garden for supplying us with this information.*

We obtain most of our degree day information from the Virtual Arborist web site. For additional locations and daily degree days, go to <http://virtualarborist.com/>.

This Week's Sightings

Basswood lacebug

Basswood lacebugs (*Gargaphia tilliae*) are feeding on American linden (*Tilia americana*). The insects live on the lower surface of leaves and feed on leaf sap, causing yellow and white stippling on the upper leaf surface. The undersides of leaves are covered with brown varnish-like excrement that looks like black specks or tar spots. Heavy infestations may lead to complete stippling of the leaf and premature leaf drop.

Lacebugs overwinter as adults under loose bark of host plants and in leaf debris. Adults become active in late spring and females begin laying eggs around 500–600 growing degree days. The eggs hatch about two weeks later. Adult lace bugs are about 1/6 inch long with very ornate lace-like wings, thus the name. The nymphs are spiny looking.



Lacebug damage appears as stippling on the leaf



It's obvious how this adult lacebug got its name. Isn't it beautiful?

Control: Lacebugs generally do not cause serious harm. To help minimize harm, grow plants well-suited to the site and water during dry periods. There are several naturally occurring predators that help control the population, 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. See the *2007 Commercial Landscape & Turfgrass Pest Management Handbook* (CPM) if you are a commercial applicator or the *Home, Yard & Garden Pest Guide* (HYG) if you are a homeowner, for insecticide recommendations. Both books are available from the University of Illinois. See the end of the newsletter for more information.

Good web sites:

<http://www.ext.vt.edu/departments/entomology/factsheets/lacebug.html>

<http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7428.html>

<http://ohioline.osu.edu/hyg-fact/2000/2150.html>

Ailanthus webworm



Ailanthus webworm caterpillars were found on corkwood (*Leitneria floridana*). The caterpillars have sparse light hairs, a broad stripe down their backs that has been described as olive-green, and alternating black and white stripes along their sides. They cluster together in a loose web and feed on leaves from within the web. This insect is usually seen on tree-of-heaven (*Ailanthus altissima*), one of our least favorite trees. Yes, yes, we know it's the tree in the popular book *A Tree Grows in Brooklyn*, which we read when we were 12 years old. But we have grown up and discovered what a weak-wooded, weedy, smelly tree it is. We are also sick of cleaning up the seedlings in our yard from our neighbor's ugly, misshapen, overgrown tree-of-heaven.

Control: Here at the Arboretum, we tear the nests out of the tree and stomp on the webworms, thus destroying the webworms and releasing a fair amount of aggression. *Bacillus thuringiensis* var. *kurstaki* (*Btk*) could also be used to control young larvae, but the spray needs to penetrate the nest to be effective. *Btk* is not as effective against older larvae. Although ailanthus webworms are capable of defoliating their host, they rarely do (darn it).



Potato leafhoppers

We're finding leafhoppers hopping about on wafer-ash (*Ptelea trifoliata*). There are hundreds of species of leafhoppers that infest woody plants and, except for a few, most can be quite difficult to identify to species. Leafhoppers feed on leaf sap causing yellow-white stippling and leaf curling. The stippling is similar in appearance to that of spider mite damage but much more noticeable. In some cases, the saliva of leafhoppers is toxic to plants and can become systemic, affecting foliage far from the feeding site. Leafhoppers are known to be vectors of several woody plant diseases including elm yellows, aster yellows, and bacterial scorch diseases. Controlling the vector helps to control these diseases.



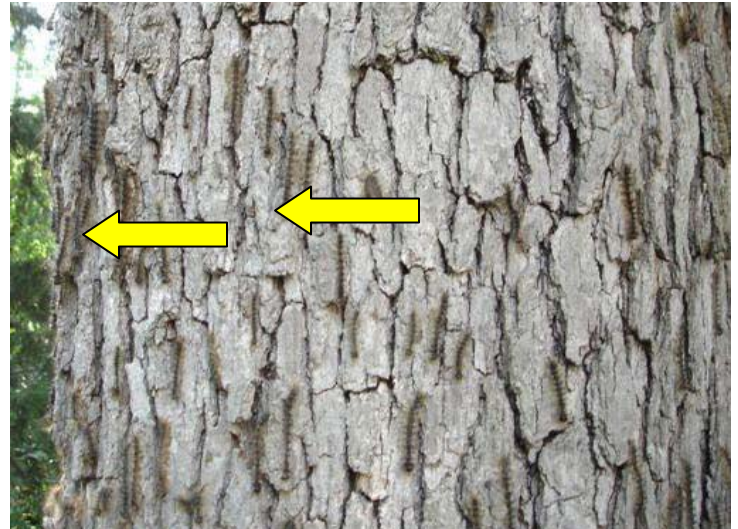
Leafhopper damage on wafer-ash

Most leafhopper species overwinter as eggs in the bark of host plants or among fallen host plant leaves. Eggs hatch in the spring and 5 nymphal stages are passed through before the adult stage is reached. Adults are generally less than 1/8 inch long.

Control: Remove and destroy fallen leaves in the fall. Insecticidal sprays can be used and should be applied before leaves begin to curl. Systemic insecticides are gaining in popularity as they can be targeted and distributed throughout a single tree without difficulty. For further information on chemical controls refer to the CPM for commercial applicators and the HYG for homeowners.

Gypsy moth update

First some good news--Gypsy moths have predators, including a fungus called *Entomophaga maimaiga*. *Entomophaga* is not native to this continent, but was brought to this country from Japan to control gypsy moths. The fungus has spread to Illinois naturally. The really good news is that there were several sightings in DuPage County of large numbers of gypsy moth caterpillars being killed by the fungus last month. It is a fungus that is most damaging to caterpillars in the Lymantrid family such as gypsy moths and tussock moths. Caterpillars killed by *Entomophaga* usually hang upside down in a vertical position (heads down) and look dried up. Whitish-grey spores can sometimes be seen on the hairs of the caterpillar cadavers. *Entomophaga* is not the total answer to gypsy moth control, but can kill a lot of the caterpillars during wet springs.



These gypsy moths that are hanging upside down were killed by the *Entomophaga* fungus – a good thing.

Other gypsy moth news--adult gypsy moths are emerging, mating, and the females are laying eggs. The males are fairly inconspicuous moths and have brown wings with black markings and a wingspan of about 1 1/2 inches. They have feathery antennae. 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 fly, because they are so laden with eggs. Females lay egg masses in July and August on lower branches and trunks of trees, and 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 1 1/2 inches long. Each female usually lays one egg mass, which could contain as many as 1,000 eggs. Egg masses can be carefully scraped off bark and destroyed before they hatch in spring. We wait until the leaves fall off the trees to search for egg masses.



Gypsy moth female



Gypsy moth male

Good websites:

<http://www.na.fs.fed.us/spfo/pubs/fidls/gypsymoth/gypsy.htm>

Diplodia Tip Blight

We have found symptoms of Diplodia tip blight (*Diplodia pinea*) on current year needles of pine (*Pinus sp.*). This is a disease named in a similar fashion to the singer Prince who then became the Artist Formerly Known as Prince who then became Prince again. This disease was Diplodia, then became Sphaeropsis Formerly Known as Diplodia and is called Diplodia once again. We prefer to call it tip blight. It is a common disease of two- and three-needle pines in our region. Austrian, mugo, and scots pines seem to be a magnet for this disease, especially if they are stressed by insufficient water. The fungus infects needles as they are expanding, thus causing stunting and turning the needles straw-colored or brown. Some “bleeding” or resin may appear dripping from infected needles.



New growth is stunted and has died.

The disease frequently starts on lower branches and moves upward as spores are spread by splashing rain and wind. The fungus can also invade woody tissue and cause branches to die. Dead shoot tips and needles from previous years are often found throughout the canopy of larger trees. Black pepper-like fruiting bodies form at the base of the needles (look underneath the needle sheath) soon after the needles die.

Control: Other than proper siting, there is little you can do to prevent the disease. Managing the disease is possible through sanitation, cultural, and chemical control practices. Rake up and discard infected cones and needles to remove inoculum sources. Also, keep trees mulched (do not use diseased pine needles as mulch) and watered during dry periods. Avoid overhead irrigation which helps spread spores, and do not prune susceptible trees in wet weather. As soon as tip blight is noticed, prune out and destroy diseased tissue. Sterilize tools between pruning cuts with 70% alcohol or dilute Pinesol or a similar disinfectant. Protectant chemicals are effective if applied when needles are first emerging. Chemicals are used commonly in nurseries and plantations, but should be a last resort in landscapes. Refer to the CPM or HYG for specific chemical recommendations. In the future, plant disease-tolerant species or alternative species in your landscape.

Good websites:

<http://www.ag.uiuc.edu/~vista/abstracts/aSPHAERO.HTML>

<http://na.fs.fed.us/spfo/pubs/factsheets/sphaeropsis/shootblight.htm>



Bacterial leaf spot of ivy

Bacterial leaf spot was found on English ivy (*Hedera helix*). The disease is caused by the bacteria *Xanthomonas hortorum* pv. *hederae*. At first, the spots are a light green and darken to a dark brown as they age. The spots are bounded by veins and may cause leaf distortion. When sprinklers are used, or in times of abundant rainfall, defoliation can be common. There may be a yellow halo around the spots. This bacterial disease can be confused with a fungal leaf spot called ivy anthracnose, caused by the fungus *Colletotrichum trichellum*. However, the fungal leaf spots will have small black specks in the spots (fruiting bodies).

Control: Regardless of whether the spot is caused by fungus or bacteria, both pathogens need water in order to infect the plant. Keep the foliage as dry as possible as rainfall and overhead watering favor these diseases. Water early in the day so the leaves dry faster. Diseased leaves can be removed as soon as

they appear. Clean up and destroy leaves at the end of the season to reduce the source of the disease the following year. For chemical recommendations for both the bacterial and fungal ivy leaf spots, refer to the CPM or HYG.

Good web site:

<http://www.ipm.uiuc.edu/diseases/series600/rpd652/index.html>

Rust, rust, rust!

It's not a surprise that we're finding a lot of rust this year, because fungus needs wet weather to infect and we've had so much rain. Rust diseases get their name from their color – they're orange--just like rusted metal!



Rust on Mayapple

This disease infected the plants a few weeks ago, but we just noticed the rust on mayapple (*Podophyllum peltatum*), caused by the rust fungus *Puccinia podophylli*. Yellow orange spots form on the leaves, and the leaves eventually turn brown and die. This is an autoecious rust, which means it only needs one host to complete its life cycle (many rusts are heteroecious, which means they need two unrelated hosts to complete their life cycle). Mayapples grow in clumps, so the disease spreads easily to nearby mayapples unless infected leaves are removed.

Control: Dig up and destroy infected plants as soon as the rust becomes visible.

Rust on Bee Balm

A leaf rust, caused by the fungus *Puccinia menthae*, has been found on wild bergamot or bee balm (*Monarda fistulosa*). Symptoms are small orange-brown spots on top of the leaves and pale brown pustules on the leaf underside. Many leaves are turning yellow and starting to fall off. It is autoecious, that is, it does not require another type of plant to complete its life cycle. This fungus also infests spearmint and peppermint.

Control: Infested plants should be destroyed.



Rust on Goldenrod

Rust has been found on the underside of the lower leaves of goldenrod (*Solidago spp.*). This is likely pine needle rust, although we haven't found the rust on any of our pines. However, goldenrod and asters are the alternate host for pine needle rust. Pine needle rust is caused by the fungus *Coleosporium asterum*. It seldom causes serious damage on either plant. The rust on pine kills older needles on young trees, primarily on red, Scots, and jack pine.

Needles on the bottoms of the trees turn brown in spring. Then orange droplets appear on infected foliage. Later, orange blisters appear. Spores are blown from the orange blisters to infect the leaves of asters and goldenrod in early summer. By late summer, orange spores have formed on the undersides of the lower leaves. This is what we're seeing now on the goldenrod leaves. Spores from the goldenrods are carried by winds to pine needles, where they cause new infections.

Control: Asters and goldenrod should not be planted in the immediate vicinity of susceptible pines. It causes little damage to either host, but needle loss on lower branches may disfigure and retard growth of young pines.

Hosta virus X

We received a sample of what is very likely Hosta virus X on *Hosta* 'Sum and Substance'. Hosta virus X was first identified in 1996 and has now reached epidemic proportions on hostas. Since symptoms vary by cultivar, it is important to know what the cultivar normally looks like. The most dramatic symptoms include line patterns, especially along veins, mottling or mosaic patterns, puckering, blotches, or ringspots. Sometimes only small brown dead spots are seen. It can take a year or more for symptoms to appear.

Before the virus was identified as a problem, some Hosta sports with unusual mottling and coloration were propagated and put on the market. Scientists later found the cause of the unusual look was Hosta virus X. The varieties 'Breakdance', 'Eternal Father', and 'Leopard Frog' are reported to be of the infected varieties. Some cultivars such as 'Blue Angel,' 'Color Glory,' 'Frances Williams,' 'Bressingham Blue,' 'Frosted Jade' and 'Love Pat.' are reported to be resistant, while others such as 'Gold Edger', 'Golden Tiara', 'Gold Standard', 'Striptease', and 'Sum and Substance' are reportedly susceptible.



Normal 'Sum and Substance' leaf



'Sum and Substance' with Hosta Virus X – note the mottling and puckering

Hosta virus X is not spread by insects, but can be spread on hands, pruning tools, and by propagation. Tools should be sterilized when pruning or dividing hostas. There is no control, so infected hostas should be dug up and destroyed.

Good web site:

<http://www.hostalibrary.org/firstlook/HVX.htm>

Daylily leaf streak

Brown streaks with yellow haloes along the mid-vein were found on leaves of daylilies (*Hemerocallis* sp.). This is called daylily leaf streak and is caused by the fungus *Colletotrichum dematium*. This is a common daylily problem that usually starts near the leaf tips. This is not the same as daylily rust, which is a much more serious disease.



Control: Cultivars vary in their susceptibility. Infected leaves should be removed. Give plants plenty of air circulation and avoid overhead watering.

Big Bugs!

If you haven't had a chance to see our terrific David Roger's Big Bugs Exhibit, come this weekend. The last day of the exhibit is July 20. You don't have to be fan of insects to enjoy them. We wish we could keep them forever – everyone loves them!

What to Look for Next Week

Next week we will be looking for cottony maple scale, milkweed beetles, and tar spot of maple.



Trica Barron, who normally prepares the report, is on vacation this week, so this week's report is being prepared by Donna Danielson, Plant Clinic Assistant. The Plant Health Care Report is edited this week by Fredric Miller, PhD, research entomologist at The Morton Arboretum and professor at Joliet Junior College; Doris Taylor, Plant Information Specialist, and by Carol Belshaw, Plant Clinic 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.

The *2007 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). You may also purchase them online at <https://pubsplus.uiuc.edu/ICLT-07.html> (commercial handbook) and <https://pubsplus.uiuc.edu/C1391-08.html> (homeowners' guide). One further source is your local county extension office.

This report is available on-line at The Morton Arboretum website at <http://www.mortonarboretumphc.org/>.

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 Trica Barron at tbarron@mortonarb.org.