

# Plant Health Care Report

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Scouting Report of The Morton Arboretum

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July 18 - 24, 2009

Issue 2009.15

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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 Plants are in Bloom at the Arboretum?

The flowers of Hills of Snow Hydrangea (*Hydrangea arborescens* 'Grandiflora') are beginning to turn green on some of the lower branches.



**Accumulated Growing Degree Days (Base 50) as of July 21: 1268.0**

### Insects

- Gypsy moth male adults
- Peach tree borers
- Two-spotted spider mites
- Scarlet oak sawflies
- Solitary oak leafminers
- *Lopidea staphyleae*

### Diseases

- Phomopsis tip blight on juniper
- Phomopsis gall on forsythia
- Yellowwood anthracnose
- Basal rot caused by *Rhizoctonia solani*
- Monarda rust

### Miscellaneous:

- Herbicide damage
- New disease book

### Weed Note

- Purslane (*Portulaca oleracea*)

## Degree Days and Weather Information

As of July 22, 2009, we are at 1268.0 growing degree days which are approximately 14 calendar days behind the historical average (1937-2008) and four calendar days behind last year.

Location	Growing Degree Days through July 22	Precipitation between June 15 to 21 in inches
The Morton Arboretum (Lisle, IL)	1268.0	0.33
Chicago Botanic Garden (Glencoe, IL)*	1139.5	0.37
Chicago O-Hare Airport*	1294.0	0.00
Aurora, IL**	1237.6	
Champaign, IL**	1657.8	
DuPage County Airport (West Chicago, IL)**	1419.5	
Decatur, IL**	1731.9	
Moline, IL**	1510.4	
Peoria, IL**	1636.5	
Quincy, IL**	1770.0	
Rockford, IL**	1262.0	
Springfield, IL	1868.7	
Waukegan, IL**	986.8	
Wheeling, IL**	1197.5	

\*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>

## This Week's Sightings

### Gypsy moth male adults

We are beginning to catch gypsy moth male adults in our pheromone traps. Adult males are brown with black markings, feathered antennae, and have a wingspan of about one and a half inches. Fred Miller reports that he has been seeing tons of female gypsy moths laying eggs all through the Cook County forest preserves. 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.

See the PHC Report of April 3, 2009, for more information about gypsy moth eggs masses. See the PHC Report of May 2 – 8, 2009, for further information on the caterpillar.



Male gypsy moth



Good websites:

[http://www.aphis.usda.gov/plant\\_health/plant\\_pest\\_info/gypsy\\_moth/index.shtml](http://www.aphis.usda.gov/plant_health/plant_pest_info/gypsy_moth/index.shtml)

<http://www.fs.fed.us/ne/morgantown/4557/gmoth/>

Female gypsy moth



## Peach tree borers

We have caught quite a few greater peachtree borer (*Synanthedon exitiosa*) adult males in our pheromone traps. The adults are wasp-like, clear-winged, day-flying moths that primarily infest plants in the *Prunus* genus. Male adults are blue-black with narrow yellow bands on their abdomens and have clear wings with edges and veins outlined with blue-black scales. Females are steel blue with an orange band around the abdomen and have dark blue forewings and clear hind wings. The wingspan of the male is about one inch, and the female's is about one and a half inches.

Adult emergence usually begins in June, typically peaks in mid-July to early August, and may extend into September. Soon after emergence, the female lays eggs in bark crevices of host plants. Hatching occurs about seven to ten days later. The brown-headed, creamy-white larvae burrow into the bark and begin to feed on inner bark, eventually reaching an inch and a quarter long. The insect overwinters as a partly grown larva underneath the host's bark and resumes feeding and growing in spring and early summer. Most larval activity is confined to the trunk area, usually just below the soil line or in the lower 10 inches of the trunk. Young trees can be killed when trunks are girdled by feeding; older trees are weakened and become susceptible to attack by pathogens and bark beetles. When monitoring for larvae, look at the root crown for cracked bark, frass, and resin.

The lesser peachtree borer (*Synanthedon pictipes*), which is more commonly found in orchards, starts to emerge earlier and over a longer time period and lays its eggs higher in the tree than the greater peachtree borer.

**Control:** Since adult females are attracted to open wounds in which to lay their eggs, avoid wounding *Prunus* species at this time. Keep the trees healthy by watering during dry periods and mulching properly. Refer to the *2007 Commercial Landscape & Turfgrass Pest Management Handbook* (CPM) for commercial applicators or the *Home, Yard & Garden Pest Guide* (HYG) for homeowners for specific chemical recommendations.

If only a few trees are infested, greater peachtree larvae can be mechanically removed. This should be done in the spring at bud break or in late fall. Larvae can be removed through a technique called worming. Remove soil from around the base of infected trees; then use a pocketknife or other pointed instrument to dig the larvae out. Be careful since it is possible to seriously injure the tree if too much bark or wood is removed. Larvae may also be killed by inserting a wire into their holes. Keep trees stress-free by proper watering and fertilization practices.

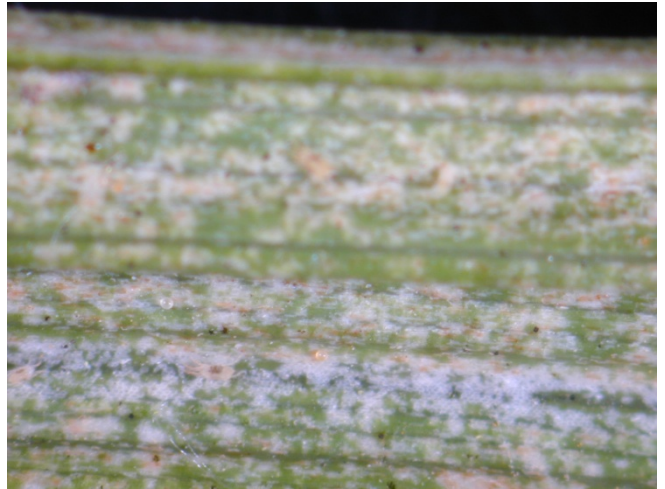
Good websites:

Greater peachtree borer: <http://ohioline.osu.edu/hyg-fact/2000/2032.html>

Lesser peachtree Borer: <http://ohioline.osu.edu/hyg-fact/2000/2033.html>

## Two-spotted spider mites

We've found two-spotted spider mites on dwarf Solomon's seal (*Polygonatum humile*). Spider mites cause stippling damage to leaves. Two-spotted spider mites are very small, about 1/60 of an inch long. Use a hand lens on the underside of the leaves – we hope you always carry one around. 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 (no surprise there!) 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.



Stippling caused by spider mites



**Control:** First, you may want to determine what kind of mites are on your plant by performing the spider mite squish test™. Hold 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.

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.

Good web sites:

<http://www.ext.colostate.edu/pubs/insect/05507.html>

<http://ohioline.osu.edu/hyg-fact/2000/2012.html>

## Scarlet oak sawflies

We've found scarlet oak sawfly (*Caliroa quercuscoccineae*) larvae feeding on leaves of white oaks (*Quercus alba*). The sawflies feed on the lower layer of the leaf, leaving behind the upper epidermal layer and creating a "window pane" effect. The larvae are about 1/8 inch long, pale yellow-green, and slimy; they will reach about one inch when mature. There are two to three generations per year.

Completely skeletonized oak leaves drop prematurely. Pin oak and scarlet oak are preferred hosts, but most oaks in the red oak family may be attacked. Normally, damage is an aesthetic problem.

**Control:** This pest is generally kept in check by parasites, microbial disease, and other natural enemies. Even noticeable outbreaks are generally not dangerous to the health of the host oaks.



## Solitary oak leafminers

We found solitary oak leafminer (*Cameraria hamadryadella*) larvae and blotch mines on bur oak (*Quercus macrocarpa*). Solitary leafminer larvae feed singly and “mine-out” blotch-shaped patches just below the upper surface of the leaf (photo on left). 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 1/5 inch in length at maturity.



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

Good website:

<http://www.fs.fed.us/r8/foresthealth/pubs/oakpests/p12.html>



This insect causes the mines

## *Lopidea staphyleae*

We've found a new insect for us, *Lopidea staphyleae*, found on American bladdernut (*Staphylea trifolia*). We wish we had a common name for it. This is one of the true bugs (think piercing-sucking mouthparts) in the family *Miridae* (plant bugs). It feeds only on species of bladdernut, which is why it's not a common insect. Damage appears as distorted, discolored leaves.



## Phomopsis tip blight on Juniper



We are seeing Phomopsis tip blight damage, caused by the fungus *Phomopsis juniperovora*, on upright Savin juniper (*Juniperus sabina* 'Fastigiata'). Phomopsis tip blight damages new growth and succulent branch tips of junipers from mid-April through September. However, new symptoms don't occur until late in the growing season and during winter on the terminal four to six inches of branches. Foliage turns yellow, then brown and eventually gray as the fungus girdles branches and causes blighting of foliage beyond the infection point. In the advanced stage, pinhead-sized black pycnidia, the reproductive structures of the fungus, can be found on blighted twigs, particularly the gray colored areas. This is what Stephanie Adams, our diagnostician, found. Old, mature foliage is resistant to infection. Note that similar branch tip dieback symptoms

may result from winter injury, frost damage, and drought; however, injury from abiotic (non-living) sources will be more uniformly dispersed on a plant and may not have black fungal fruiting bodies. Also, there are a handful of other juniper twig and foliage diseases but these are not as harmful or prevalent as Phomopsis. Repeated blighting of junipers in early summer can result in witches' broom, stunting and, in severe cases, plant death.

Phomopsis tip blight affects many different members of the cypress family but is most severe on junipers, especially eastern red-cedar (*Juniperus virginiana*), Rocky Mountain (*J. scopulorum*), and creeping junipers (*J. horizontalis*). Phomopsis blight has also been found on various species of arborvitae, cypress, false cypress, fir, larch, and white-cedar.

**Control:** Spores of *Phomopsis* are produced on the blighted twigs throughout the summer so infection can occur whenever succulent foliage and twigs are available and moisture or humidity is high. Eliminate the source of the spores (blighted twigs) by pruning dead and dying tips now. Remove tissue four to six inches below the symptoms and restrict pruning to dry weather.

Avoid excessive shearing and high nitrogen fertilizers that encourage succulent growth. Space plants to provide good air circulation and avoid heavily shaded areas. Water plants in early morning so the foliage dries before nightfall. If you've had severe problems in the past, chemical sprays should be applied when new flushes of growth appear late in spring. Refer to the *2007 Illinois Commercial Landscape Turfgrass Pest and Management Handbook* (CPM), for commercial applicators, and the *Home, Yard, and Garden Pest Guide* (HYG), for homeowners, for specific chemical recommendations.

Plant resistant cultivars or varieties of *Juniperus*. The following junipers have been found to be resistant to Phomopsis tip blight:

- *Juniperus chinensis* cultivars 'Hetzii'\*, 'Keteleeri'\*, 'Mas'\*, 'Mountbatten'\*, 'Robusta Green'\*
- *Juniperus communis* 'Depressa', 'Oblonga pendula'
- *Juniperus horizontalis* 'Douglasii', 'Procumbens'
- *Juniperus sabina* 'Arcadia', 'Broadmoor'
- *Juniperus scopulorum* 'Moffettii'\*
- *Juniperus squamata* 'Fargesii'
- *Juniperus virginiana* 'Cinerascens', 'Globosa', 'Peptans'

\*Plants are also resistant to *Kabatina*, another common fungal disease of junipers.

Good websites:

<http://plantclinic.cornell.edu/FactSheets/junipertipblight/juniper.htm>

<http://ohioline.osu.edu/hyg-fact/3000/3056.html>

## Phomopsis gall on forsythia

A sample of Phomopsis stem gall on forsythia has been brought into the Plant Clinic last week. The galls, caused by the fungus *Phomopsis* sp., are light brown and irregularly shaped with a bumpy, rough texture. The galls ranged in size from ¼- to 1-inch in diameter. Phomopsis galls can occur on many tree and shrub species, including viburnum, privet, American elm, hickory, maple, and oak. Gall size varies with the host species and time. If the galls girdle the twig, dieback results. The disease is frequently mistaken for crown gall, which is a bacterial disease that usually attacks plants near the soil. Phomopsis galls are located higher on the stems, not near the soil line.

*Control:* There is little known about the disease cycle of this fungus. The only suggested control measure is to prune out the galls. It is imperative to sterilize pruning tools between cuts by dipping them in a disinfectant such as Lysol, Pinesol, or alcohol.



## Yellowwood anthracnose

We are seeing symptoms of anthracnose on yellowwood (*Cladrastis kentuckea*). Anthracnose is a class of foliar diseases caused by several species of fungi. The diseases usually dissipate with the onset of summer. On yellowwood, anthracnose causes tan to brown blotches on leaves. Typically it is an insignificant disease, although in cool, wet summers, it can cause some defoliation.

*Control:* Anthracnose on yellowwood is primarily an aesthetic problem.

Good website:

<http://ipm.illinois.edu/diseases/series600/rpd621/index.html>

## Basal rot caused by *Rhizoctonia solani*

We found a basal rot on Sedum caused by the fungus *Rhizoctonia solani*. The leaves were soft and had blighted areas. We did not have a sample of the roots, but the stem at the soil line was shrunken and brown. *Rhizoctonia* is a soil-borne fungus which attacks a large number of herbaceous plants. It does not need to be in excessively wet soil to thrive; it can grow in well-drained soils. The disease must



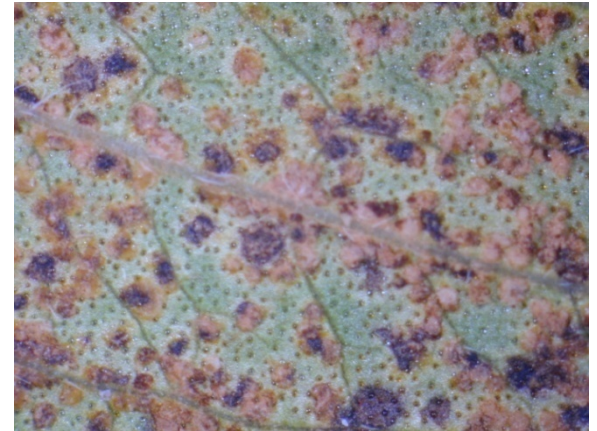
be diagnosed under a microscope. One of the characteristics of *R. solani* is that the mycelia frequently branch at 90 degree angles. It does not form asexual spores.

*Control:* Fungicides are not reliably effective. Sanitation (removal of the plants) is important. *Rhizoctonia* can remain in the soil for a long time.

## Monarda rust

A leaf rust, caused by the fungus *Puccinia menthae*, has been found on On Parade bee balm (*Monarda* 'On Parade'). 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:* The only control we're aware of is to destroy the plant.



## Herbicide damage



Herbicide injury, most likely due to 2,4-D, was found on redbud (*Cercis canadensis*). 2,4-D is a growth regulator type herbicide (weed killer) that can be very volatile (vaporize) and injure trees some distance from where it's applied, which is likely the case here. Damaged leaves are twisted or malformed and may show strapping and/or cupping. Certain plants, like grape vines, redbuds, and tomato plants, are very sensitive to 2,4-D, even from applications a long distance away from the plant.

*Control:* Herbicides should never be applied on windy days. Volatile herbicides like 2,4-D should not be applied in hot weather (warmer than 85 degrees). Remember that sidewalks and driveways are warmer in sunlight than surrounding air temperatures, so herbicides sprayed near these

surfaces are more likely to volatilize than those sprayed on plants. Trees usually survive 2,4-D injury.

Good web sites:

<http://learningstore.uwex.edu/pdf/A3286.pdf>

## New disease book

Although there are many perennials out there, most disease books about ornamental plants are written about woody plants. The American Phytopathological Society (APS Press) has recently published a very helpful book named *Diseases of Herbaceous Perennials*. It's written by Mark Gleason, Margery Daughtry, Ann Chase, Gary Moorman, and Daren Mueller. The book begins with descriptions of different diseases, then has easy-to-read information about 150 perennials and each plant's common problems. There are many color pictures throughout. We've needed this book for a long time. It belongs on every diagnostician's shelf!

# Weed Note

## Purslane (*Portulaca oleracea*)

Purslane is an annual introduced from southern Europe. It has been in this country since 1672 and is common in landscapes and disturbed places, even in sidewalk cracks. It has a very prostrate growth habit with many branches and tiny yellow flowers. The small, oval leaves are hairless and fleshy. It produces a ton of seeds which are viable for many years. It requires full sun to thrive.

*Control:* It is not enough to merely uproot this weed; even after being uprooted, the plant has sufficient reserves to produce seed. Pre-emergent herbicides are effective, as well as post-emergent when the plant is in the early stages. Always read and follow label directions.



## What to Look for Next Week

We will be looking for measles on peony and mossyrose galls.

*Quote of the week:* "Tomatoes and squash never fail to reach maturity. You can spray them with acid, beat them with sticks and burn them; they love it."- S.J. Perelman, *Acres and Pains*, 1947

Have a great week and happy scouting!



The Plant Health Care Report is prepared by Donna Danielson, Plant Clinic Assistant and edited 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 quote of the week was provided by Rita Hassert, Technical Services Librarian Extraordinaire at the Sterling Morton Library. 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.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.mortonarb.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\*\*](mailto:plantclinic@mortonarb.org). Inquiries or comments about the PHC reports should be directed to Donna Danielson at [ddanielson@mortonarb.org](mailto:ddanielson@mortonarb.org).

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