Plant Health Care Report

Scouting Report of The Morton Arboretum

The Morton Arboretum

May 6, 2016 **Issue 2016.3**

Welcome to the Plant Health Care Report (PHCR) for 2016. My name is Sharon Yiesla. I am on staff at The Morton Arboretum Plant Clinic and I will be responsible for compiling the newsletter again this year. Send comments regarding the Plant Health Care Report to me syiesla@mortonarb.org.

Our report includes up-to-date disease and insect pest reports for northeastern Illinois. You'll also find a table of accumulated growing degree days (GDD) throughout Illinois, precipitation, and plant phenology indicators to help predict pest emergence. Arboretum staff and volunteers will be scouting for insects and diseases throughout the season. We will also be including information about other pest and disease problems based on samples brought into The Arboretum's Plant Clinic.

We are continuing to use last year's format: full issues alternating with growing degree day issues; focus on more serious pests; minor pests covered in shorter articles; alerts issued for new major pests. Readers who received our email blasts in the past will continue to receive one weekly, either to announce that the newsletter is available or, on alternate weeks, that the growing degree day information is available. To be added to the email list, please contact me at syiesla@mortonarb.org

Quick View

What indicator plant is in bloom at the Arboretum?

Common lilac (*Syringa vulgaris*) is in flower (fig 1)

Accumulated Growing Degree Days (Base 50): 134 (as of May 5)
Accumulated Growing Degree Days (Base 30): 1187.5 (as of May 5)

Miscellaneous

- ISAM (Invasive Species Awareness Month) workshop

Insects

- Eastern tent caterpillar
- Viburnum leaf beetle
- Aphids
- Leaf rollers
- Euonymus webworm

Diseases

- Volutella blight on boxwood
- Crown rust of buckthorn

Weeds

- Garlic mustard
- *Ficaria verna*, a weed of many names

Figure 1 Common lilac

Degree Days and Weather Information

We are adding a new location, Lisle, on the GDD list this year. Although we have our own weather station here at the Arboretum, we have noted that the Lisle weather station GDD often differs from our readings. So we are offering Lisle readings right above the Arboretum readings. This just goes to show that temperatures can vary over a short distance, which means growing degree days can be quite variable as well.

As of May 5, we are at 134 base-50 growing degree days (GDD). The historical average (1937-2013) for this date is 78 GDD_{50}.

Location	B_{50} Growing Degree Days Through May 5, 2016	Precipitation (in) April 29-May 5, 2016
Carbondale, IL*	522	
Champaign, IL*	318	
Chicago Botanic Garden**	86 (as of 5/4)	2.54ò (4/28-5/4)
Chicago O'Hare*	181	
Kankakee, IL*	228	
Lisle, IL*	201	
The Morton Arboretum	134	1.5ò
Northbrook, IL**	124	
Quincy, IL*	391	
Rockford, IL*	138	
Springfield, IL*	347	
Waukegan, IL*	107	

**Thank you to Mike Brouillard, Northbrook Park District and Chris Beiser, 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/

How serious is it?

This year, articles will continue to be marked to indicate the severity of the problem. Problems that can definitely compromise the health of the plant will be marked “serious”. Problems that have the potential to be serious and which may warrant chemical control measures will be marked “potentially serious”. Problems that are seldom serious enough for pesticide treatment will be marked “minor”. Articles that discuss a problem that is seen now, but would be treated with a pesticide at a later date, will be marked “treat later”. Since we will cover weeds from time to time, we’ll make some categories for them as well. “Aggressive” will be used for weeds that spread quickly and become a problem and “dangerous” for weeds that might pose a risk to humans.

Miscellaneous:

ISAM (Invasive Species Awareness Month) workshop
Species on the Move: Updates on Invasive Threats to Urban and Natural Areas

Our workshop will feature experts from the U.S. Department of Agriculture, the University of Illinois Forestry Extension and The Morton Arboretum, to discuss new invasive pests such as jumping worms, wood boring insects, oak problems, updates to the Illinois Exotic Weed Act, and diseases on the move.

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Pest Updates: Insects

Eastern tent caterpillar (potentially serious)

Last week our scouts reported a small tent containing the caterpillars of Eastern tent caterpillar (*Malacosoma americanum*) . The caterpillars (fig. 2) will ultimately grow to two inches long and are hairy with white stripes down their backs and blue spots between longitudinal yellow lines (they are beautiful caterpillars). The larvae gather at a fork in a tree and build a web or "tent" (fig.3). They leave the web to feed during the day, but return at night. Severe defoliation only occurs when populations are high.

Figure 2 Eastern tent caterpillar

Eastern tent caterpillars prefer trees in the rose family, such as wild black cherry, apple and crabapple, plum, and peach, but occasionally will feed on ash, birch, willow, maple, oak, and poplar.

Management: The safest way to control the caterpillar is pruning out the webs. This should be done on cloudy or rainy days or at night when the caterpillars are in the nest and not out feeding.

Good web site:
http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/tent-or-web-making-caterpillars

Figure 3 Tent of Eastern tent caterpillar

Viburnum leaf beetle (potentially serious)

We have not yet had any reports of viburnum leaf beetle (*Pyrrhalta viburni*) showing up, but we have accumulated enough growing degree days for larvae to be out and about. So go out and start looking at your viburnums. We saw this pest last year, mostly on arrowwood viburnum (*Viburnum dentatum*) and the American cranberrybush viburnum (*Viburnum opulus* var. *americanum*, formerly *V. trilobum*).

Figure 4 Viburnum leaf beetle larva

This is a pest of concern because it has the potential to be a serious defoliator of viburnums. Both the larvae and the adult beetle will feed on leaves, so we can see damage all season. The beetle overwinters as eggs in the tips of stems. The egg-laying damage usually occurs in rows. The eggs are laid in holes chewed by the adult. The holes are then covered by a cap of chewed bark. These caps are fairly easy to see as they are darker than the stem.

Figure 5 Feeding damage of viburnum leaf beetle

The larvae should be out soon and may be out already. They are small (1/4 inch) and vary in color. They may be pale green, pale orange or yellow. They do have a distinctive pattern of black spots along their sides and a row of black dashes running down their backs (fig. 4). At maturity, the larvae are a little less than half an inch long. The larvae chew on the undersides of new foliage (fig. 5).

When mature, the larvae crawl to the ground, usually in mid-June, and pupate in the soil. Adults emerge from the soil (early July) and also chew on the leaves. Their feeding damage forms irregular round holes in the leaves. The beetles are about ¼ inch long and generally brown in color. On close inspection golden hairs can be seen on the wing covers of the adult beetle. The adult beetles will be mating and laying eggs from summer into fall. There is one generation of the beetle each year. Heavy and repeated defoliation by the viburnum leaf beetle can lead to death of the shrubs.

Management: From October through April twigs with eggs in them can be pruned out and destroyed. Insecticides can be used on the larvae in May/June when they are feeding, and on the adults in summer when they are feeding. Some university websites are suggesting these insecticides: spinosad, insecticidal soap (for larvae), acephate, carbaryl, cyfluthrin or malathion. Cornell University also suggests a single soil application of imidacloprid in spring (not summer) to control adults this summer.

Good websites:

http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/viburnum-leaf-beetle

http://idl.entomology.cornell.edu/files/2013/11/Viburnum-Leaf-Beetle-12g0ctu.pdf

Aphids (minor)

We are starting to see aphids showing up in the landscape. This week we have had two reports of aphids on viburnums (*Viburnum carlesii* and *V.* x *juddii*). There are a number of different species of aphids that vary in color: yellow, green, pink, black. They are all tear-drop shaped and have two cornicles (fig. 6) on the back end (looks like twin tail-pipes). Aphids are small, about 1/16".

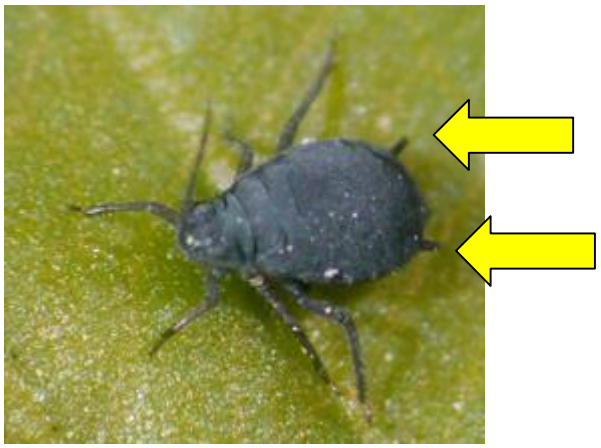

Figure 6 Aphid (arrows point to cornicles)

These insects suck out sap from the leaves. The feeding often leads to curled or distorted leaves. Uncurling the leaves exposes the insects. Aphids also produce honeydew, which is a sticky substance. Sticky leaves are often noticed before the insects themselves. Aphid damage is generally fairly minor, but they can be vectors for viruses.

Management: Aphids are relatively easy to manage. Some species do not stay with a particular plant for the whole season. By the time the damage is noticed, the insects may have moved on. Aphids tend to feed in groups at the ends of branches. Clipping off those branch ends can get rid of the whole population quickly. Spraying the plant with a strong stream of water from the garden hose may also dislodge much of the population. There are also natural predators, like lady bugs, that will feed on aphids, so avoid insecticides and let the good insects do their job.

Good websites:

http://www.mortonarb.org/trees-plants/tree-and-plant-advice/help-pests/aphids
http://extension.missouri.edu/p/g7274

Leafrollers (minor)

There are about 200 species of leafrollers that attack ornamental plants. This week our scouts found leafroller larvae on dogwood and common hackberry. Leafrollers are caterpillars (fig. 7) that roll up leaves and feed from within the shelter of the rolled-up leaf. Damage is usually minor. From time to time, larger populations may partially defoliate a plant.

Figure 7 Fruittree leafroller

Management*:* None required as leafrollers usually cause minimal damage. Insecticides may be warranted with a large population.

Good website: http://urbanext.illinois.edu/hortanswers/detailproblem.cfm?PathogenID=89

Euonymus caterpillar or webworm (severity is determined by the amount of defoliation)

Euonymus caterpillars (*Yponomeuta cagnagella*), also known as euonymus webworms for the webbing they make, are feeding on running strawberry-bush euonymus (*Euonymus obovatus*). Inspect your plants carefully. The sample that our scouts brought in was of very small larvae, so the webbing was not well developed yet and the markings on the larvae were not as distinct as those seen in our photo (fig. 8).

Figure 8 Euonymus caterpillar

These caterpillars are leaf-feeding insects that live in colonies within thin webs (fig 9) at branch ends. The web increases with size as the larvae feed on the leaves and continue to grow themselves. Larvae are pale yellow with black spots, eventually reaching an inch at maturity. The larvae will pupate in cocoons that hang on the branches. The adult moth emerges in June. The moth, known as an ermine moth, is white with black spots. Euonymus caterpillar also attacks other species of euonymus including spindle tree (*E. europaeus*) and burning bush (*E. alatus*).

Figure 9 Webbing of euonymus caterpillar

Management: Small populations can be managed by pruning out webs now and destroying them. *Bacillus*

thuringiensis var. *kurstaki* (*Btk*) will control young larvae like we are seeing now. This is the value of scouting; find the enemy while he is small. The little guys are always easier to kill. *Btk* is less effective on mature larvae. Spray the web and plant thoroughly with *Btk*, as the insect must eat it in order for it to work.

Good web site: http://bugguide.net/node/view/70367

Pest Updates: Disease

Volutella blight on boxwood (potentially serious)

This seems to be the year of boxwood problems. In issue 1 we reported on boxwood leafminer, boxwood psyllids and boxwood spider mites. Now we are seeing volutella on boxwood. This is caused by a different fungus than the volutella on pachysandra that we mentioned in Issue 2. Volutella on boxwood is caused by *Pseudonectria rouselliana* (imperfect stage *Volutella buxi*) while volutella on pachysandra is caused by *Volutella pachysandrae*.

Figure 10 Salmon-pink spores of volutella on boxwood

Volutella on boxwood causes the leaves on infected branches to turn yellow and then brown. This may be mistaken for winter damage. Examination of the stems will show cankered areas where the bark is loose and peeling. In areas where the bark peels away, the wood underneath will be dark-colored. During wet weather, salmon-pink fruiting bodies (fig. 10) will be present on the infected stems and leaves.

Management: When the plant is dry, infected stems should be cut out. Clean tools between cuts. Thin out dense shrubs to improve air circulation. Clean up fallen leaves to reduce the amount of fungal spores. Copper sulfate fungicides can be used as part of the management of this disease. Four treatments are recommended and the first should be applied when the plants are dormant. Additional treatments should be applied 10-14 days later, when new growth is half emerged and in autumn when growth has ended.

Crown rust on buckthorn (minor, unfortunately)

This is a disease we always enjoy reporting, because it attacks an invasive plant. Unfortunately it doesn't really damage the plant. Crown rust on buckthorn (*Rhamnus cathartica*) caused by the fungus *Puccinia coronata* is now showing up. In general, buckthorn is considered an invasive weed. A few years ago, the State of Illinois officially added it to the list of exotic weeds regulated by the Illinois Exotic Weed Act. The act states that "it shall be unlawful for any

person . . . to buy, sell, offer for sale, distribute or plant .. . exotic weeds without a permit issued by the Department of Natural Resources". So we can be happy to see that this plant is diseased, even if it is not fatal. Buckthorn is the alternate host for this disease, which is also known as crown rust of oats. It can greatly reduce the yield on a crop of oats.

Figure 11 Crown rust on buckthorn

Symptoms of crown rust on buckthorn are bright orange swollen spots (aecia) (fig. 11) on leaves and petioles. There are many rust organisms, and this one is not the one that causes cedar apple rust. You may see rust diseases on other plants as well.

Management: None is required as buckthorn is not a desirable plant in the landscape. Removal of buckthorn is recommended since it is an exotic weed.

Good website: http://ipm.illinois.edu/diseases/rpds/109.pdf

Pest Updates: Weeds

Garlic mustard (Aggressive)

Garlic mustard is flowering and even starting to form seeds, so it is time to get a handle on it. If you don't know this plant, you should learn to recognize it. Many people mistake it for a wildflower and hesitate to get rid of it. This non-native, invasive weed can produce large quantities of seed, so we want to get rid of it before the flowers have time to set seed.

Figure 12 Garlic mustard in flower and fruit

Garlic mustard is a biennial plant, meaning that it takes two growing seasons to complete its life cycle. In the first year, the plant will be a low-growing rosette of leaves. At this point the leaves are rounded to kidney-shaped with scalloped edges. The plant will overwinter in this rosette stage. In the second year, the plant will get taller (up to 3 feet tall). The leaves will be more triangular and more sharply toothed on the edge. When crushed, the leaves have a strong garlic smell. The flowers are white and have four petals in the shape of a cross (fig. 12). The fruit are very slender and contain numerous seeds.

Management: Hand pulling can be effective in small infestations. Pull plants when they are small as it will be easier to remove the root. When pulling plants that are already in flower,

remove them completely from the garden, as the flowers may still go on to produce seeds. Larger infestations may require herbicide treatments.

***Ficaria verna*, a weed of many names (aggressive)**

It can be hard to keep track of a plant when it has many names. One such plant is *Ficaria verna*. It was once classified as *Ranunculus ficaria.* Common names for this plant are plentiful too. It has been called fig buttercup, lesser celandine and pilewort. Some of those names almost sound friendly, but this is not a plant to invite into your yard. It is an aggressive grower and is considered invasive in a couple of states on the east coast.

Figure 13 Ficaria verna (Photo: S. Yiesla)

Every year The Morton Arboretum Plant Clinic gets 2 or 3 reports of this plant in northern Illinois, and at least one sample has shown up in 2016. This low growing plant (fig. 13) forms dense mats. In spring it produces bright yellow flowers with 8 to 12 petals (native Celandine poppy has 4 petals). It is a very pretty plant, but can be quite a spreader, so be watching for it in your area.

Management: The best control is to spray it with an herbicide containing glyphosate. This works best in early spring when the plant is in active growth. Glyphosate will kill anything green so do not get it on any desirable plants. The foliage of this plant may die back in early summer so treat now. It may take more than one year to get rid of it since there is such a short time to treat.

Good websites:
http://www.nps.gov/Plants/alien/fact/rafi1.htm
http://www.newinvaders.org/species/fig%20buttercup.pdf

The Plant Health Care Report is prepared by Sharon Yiesla, M.S., Plant Knowledge Specialist and edited by Stephanie Adams, M.S. Research Specialist in Plant Heath Care; Fredric Miller, Ph.D., Research

Entomologist at The Morton Arboretum and Professor at Joliet Junior College; Doris Taylor, Plant Clinic Manager, and Carol Belshaw, 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 who will be scouting for us this season. They find most of the insects and diseases reported here. The Scouting Volunteers include: LeeAnn Cosper, Anne Finn, Ingrid Giles, Emily Hansen, Ann Klingele, Loraine Miranda, and Bill Sheahan . Your hard work is appreciated. Thanks also to Donna Danielson who shares her scouting findings.

Literature/website recommendations:
Indicator plants are chosen because of work done by Donald A. Orton, which is published in the book Coincide, The Orton System of Pest and Disease Management. This book may be purchased through the publisher at: http://www.laboroflove conservatory.com/

Additional information on growing degree days can be found at:
http://www.ipm.msu.edu/agriculture/christmas_trees/gdd_of_landscape_insects
http://extension.unh.edu/resources/files/Resource000986_Rep2328.pdf

The Commercial Landscape & Turfgrass Pest Management Handbook (CPM), for commercial applicators, and Pest Management for the Home Landscape (HYG) for homeowners from the University of Illinois, are available by calling (800-345-6087).

This report is available as a PDF at The Morton Arboretum website at

http://www.mortonarb.org/visit-explore/news-events/arboretum-news?tid=259

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 PHCR should be directed to Sharon Yiesla at syiesla@mortonarb.org .