

# Plant Health Care Report

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Scouting Report of The Morton Arboretum

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May 13, 2011

Issue 2011.04

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Our report includes up-to-date disease and insect pest and abiotic problem information 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 Report is published bi-weekly on Friday in April and August, and weekly May-July.

Arboretum employees and volunteers will be scouting our grounds for insects and diseases throughout the season. Information about other pest and disease problems based on samples brought into the Arboretum's Plant Clinic from homeowners and professionals will also be included.

Over the course of the next year the Plant Health Care Report (PHCR) will be undergoing some format changes, but will still be offering the same content. If you prefer a PDF version of the PHCR please click here to download and print.

In order to give our audience the information they want and in the format that works best for them, we're polling our readers to find out our reader's demographics, interests, and how they access the PHCR. Please take a few minutes to take this eight question survey through Survey Monkey (no sign-up required): <http://www.surveymonkey.com/s/BD72GMQ>

**Accumulated Growing Degree Days (Base<sub>50</sub>): 160**  
**Accumulated Growing Degree Days (Base<sub>30</sub>): 1065.5**  
**This week's Indicator Plant: Common lilac (*Syringa vulgaris*)**

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Common lilac (*Syringa vulgaris*)

## Weather update

As of May 12, 2011, we are at 160 base-50 growing degree days (GDD<sub>50</sub>), which is 101 GDD<sub>50</sub> (17 calendar days) behind 2010, and behind the historical average (1937-2010) by 244.3 GDD<sub>50</sub> (10 calendar days). May has seen 0.19" precipitation, which brings us to 10.46" of precipitation for the year, which is 1.11" more than 2010.

Location	B <sub>50</sub> Growing Degree Days through May 12, 2011	Precipitation (inches) May 5 - 12
Aurora, IL*	157	
Carbondale, IL*	618	
Chicago Botanical Gardens**	92	0.06 (May 5-11)
Chicago Midway*	159	
Chicago O'hare**	120.5	0.06 (May 5-11)
Crystal Lake, IL*	147	
Harvard, IL*	129	
Kankakee, IL*	235	
The Morton Arboretum	160	0.19
Peoria, IL*	324	
Quincy, IL*	402	
Rockford, IL*	157	
Springfield, IL*	412	
Waukegan, IL*	87	

\*\*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>

**Pest Update:** The first elm bark beetle was found caught in a pheromone trap here at the Arboretum. If you recall, the elm bark beetles are the primary vector (a pathogen-carrying organism) of Dutch elm disease. It is recommended that elms should not be pruned from April 15th to the first frost, because the beetles are attracted to pruning wounds.



Tuliptree scale on star magnolia

## Tuliptree scale

Tuliptree scale (*Toumeyella liriodendri*) nymphs were found in Naperville on a star magnolia (*Magnolia stellata*). This native, soft scale preys upon tuliptree, yellow poplar, several magnolia species, and sometimes linden. During its feeding stage, it produces an abundance of honeydew (sticky sugar-laden excrement), which may eventually become black when sooty mold begins to grow on it. The females mature in late summer and begin bearing live young in August. They only have one generation per year and overwinter as immatures. At

maturity they are  $\frac{1}{4}$  -  $\frac{1}{2}$  inch in diameter. The nymphs we're seeing now are about  $\frac{1}{16}$ " long.

**Management:** These scales are found usually on stressed trees, so encouraging health and vigor is the best defense. If a tree is infested with tulip tree scale, using a high nitrogen fertilizer can exacerbate

the problem. There are a variety of chemical treatments for this scale. Please refer to the *2010 Commercial Landscape and Turfgrass Pest Management Handbook (CLM)* or *2008 Home, Yard and Garden pest Guide (HYG)* for more information.



Tuliptree scale (*Toumeyella liriodendri*) nymphs

### Suggested reading:

<http://www.entomology.umn.edu/cues/Web/208TuliptreeScale.pdf>

<http://www.fs.fed.us/r6/nr/fid/fidls/fidl-92.pdf>

## Boxwood psyllids

Boxwood psyllids (*Cacopsylla buxi*) are starting to hatch on Korean boxwood (*Buxus microphylla* var. *koreana* 'Wintergreen'). The psyllids overwinter as tiny orange eggs in the bud scales of the boxwood. As the buds open, the psyllids hatch and begin to feed. The nymphs are about 1.6 mm ( $\frac{1}{16}$  in) long, yellowish, and partially covered with a white, flocculent secretion that protects them from parasitoids and chemical sprays. Their feeding causes cupping of the leaves. Winged adults appear in late May to early June. We sometimes see ladybird beetles (also known as ladybugs) feeding on the psyllids.

**Management:** Damage is mostly aesthetic. Shearing boxwoods reduces the population as the insect or

the eggs are removed in the process. Chemical insecticides can be applied, but if using a spray, it is important to spray inside the cupped leaves.

**Suggested reading:**

[http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/Boxwood\\_Psyllid.html](http://woodypests.cas.psu.edu/FactSheets/InsectFactSheets/html/Boxwood_Psyllid.html)

[http://www.umassgreeninfo.org/fact\\_sheets/piercing\\_sucking/boxwood\\_psyllid.html](http://www.umassgreeninfo.org/fact_sheets/piercing_sucking/boxwood_psyllid.html)



Cupping leaves due to boxwood psyllids feeding



Boxwood psyllids (*Cacopsylla buxi*)

### Elm leafminer

First instar elm leaf miner (*Fenusa ulmi*) larvae are starting to form mines on American elm (*Ulmus americana*). The adults emerge in spring to lay eggs in elm leaf tissues. After about a week, the eggs hatch and young larvae begin to make mines in the leaves. The sawfly larvae are feeding on the leaf tissue between the upper and lower epidermis of the leaves.

The mines at first look like U-shaped brown spots between veins in the leaf. Eventually the insects will eat a hole through the leaf epidermis, fall to the ground, and excavate a hole in the soil to overwinter. Severe damage can result in defoliation. To test a leaf for miners, hold the leaf up to the light. If the insect is still in the leaf, you can see it. You will also be able to see frass (insect feces) which looks like pencil shavings within the mined area. They spend most of their life cycle burrowed about an inch in the ground. Other susceptible elms include the American elm (*U. americana*), English elm (*U. procera*), and Armenian elm (*U. elliptica*).

**Management:** We are unaware of any nonchemical control. There is only one generation per year, and the leaves that emerge later will not be infested.

**Suggested reading:** <http://www.ext.colostate.edu/pubs/insect/05548.html>



Elm leaf miner (*Fenusa ulmi*)



Elm leaf miner damage

### European elm flea weevil

Damage from the European elm flea weevil (*Orchestes alni*) adults feeding on the undersides of newly emerging leaves of Accolade elms (*Ulmus 'Accolade'*) has been sighted at the Arboretum. This pest first appeared in Northern Illinois in 2003 and has caused significant foliage damage to elms (particularly Siberian) during the past eight years.

Adult feeding results in tiny shot holes in the leaves, and heavy feeding can cause newly expanding leaves to wither and turn brown. After feeding, the female weevil cuts a cavity into the leaf mid-vein and inserts an egg. The hatching larvae create blotch mines at the leaf tips. Larvae feed for about 2-3 weeks, and then pupate within the mined leaf. The significant feeding can reduce photosynthetic capacity of the tree, thereby impacting overall tree vitality.



European elm flea weevil (*Orchestes alni*)

**Management:** Chemical controls are difficult to apply on a large tree, but when practical, control the flea weevil adults in early May or late June with a spray of acephate, imidacloprid, bifenthrin, or carbaryl. The acephate or imidacloprid will also prevent the larval mines from appearing later.

A systemic soil drench of imidacloprid (Bayer Advanced Tree and Shrub Insect Control, available to homeowners) applied in autumn after leaf drop will control early spring feeding of adult elm flea weevils.



European elm flea weevil feeding damage

A systemic soil drench of imidacloprid applied in early spring will help with the leafminer stage that shows up in late spring and the adults feeding later in the season. This drench does not help with the overwintering adult feeding early in the season as it takes about two months for the insecticide to be taken up throughout the tree.

**Suggested reading:**

<http://www.mortonarb.org/component/content/article/193-insects-diseases/757-european-elm-flea-weevil-orchestes-alni.html>

<http://www.mortonarb.org/component/content/article/193-insects-diseases/16896.html>

### Phomopsis gall on forsythia



Phomopsis stem gall on forsythia

A sample of Phomopsis stem gall on forsythia was 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 0.65 – 2.54 cm (0.25 – 1 in) 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. Infection symptoms include twig dieback if the galls cause girdling. 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.

**Management:** 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 70% isopropyl alcohol

### *Rhizosphaera* needle cast on spruce

The weeping blue spruce (*Picea pungens* 'Glauca Pendula') arch in the Children's Garden is showing

symptoms of *Rhizosphaera* needlecast, a disease caused by the fungus *Rhizosphaera kalkhoffii*.

This fungal disease overwinters on spruce needles. Infection occurs in spring on needles of the lower branches first and gradually progresses up the tree. Symptoms become apparent in late summer as infected needles turn a mottled yellow. By late winter and early spring, the needles turn a brown to purplish-brown and fall off the tree the following summer and fall. Small dot-like fruiting bodies (pycnidia) can be seen (with a hand lens) in rows.



*Rhizosphaera kalkhoffii* pycnidia on spruce needle



*Rhizosphaera* symptoms on spruce

The fruiting bodies are in rows because they erupt through the stomata (which are small pores on the needles). Although trees are not usually killed by this pathogen, branches that lose needles for three to four consecutive years may die. Colorado blue and Engelmann spruces (*Picea engelmannii*) are highly susceptible to *Rhizosphaera* needle cast. White spruce is moderately susceptible and Norway spruce is relatively resistant. Hosts in other genera include true firs, Douglas fir, and pines.

**Management:** Rake and dispose of infected needles to reduce the source of inoculum. Prune off lower branches, provide adequate spacing between trees, control weeds, and remove unwanted shrubs to improve air movement. Chemical controls are most effective if the disease is detected early. Fungicides should be applied when needles are half-grown (as soon as bud caps fall off) and again when fully elongated. Two years of applications are usually required. For further information on chemical controls, refer to the CPM or HYG. *Rhizosphaera* is a disease common in plants grown outside their native ranges; it is inconsequential in natural forests. The best control for the future is to plant resistant native species.

**Suggested reading:** <http://ohioline.osu.edu/hyg-fact/3000/3059.html>

<http://www.extension.umn.edu/yardandgarden/ygbriefs/p435rhizosphaera.html>

**What to look for in the next week:** Gypsy moth larvae hatching, pine sawflies, honeylocust plant bug, ash plant bug, sycamore anthracnose

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 for this Report include: Mary Carter Beary, Davida Kalina, Fritz Porter, and LeeAnn Cosper. Your hard work is appreciated.

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; 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:**

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.laborofloveconservatory.com/>

The *2010 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).

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](mailto:plantclinic@mortonarb.org) . Inquiries or comments about the PHC reports should be directed to Stephanie Adams at [sadams@mortonarb.org](mailto:sadams@mortonarb.org).

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