

The Plant Health Care Report The Morton Arboretum

May 29 – June 4, 1999

Issue 99.09

The Plant Health Care (PHC) Program at The Morton Arboretum involves monitoring diseases and insects of woody plants at the Arboretum and alerting others about our findings. Each week, we will provide timely information about what we are seeing and how you, too, can identify and control problems.

Degree Day Information (Base 50)

Location	1999	1998
The Morton Arboretum (Lisle, IL)	580.5 as of 5/31 (about seven days ahead of average)	738.0 as of 5/31
Chicago Botanic Garden (Glencoe, IL)	403.5 as of 6/1	517 as of 6/1

(Thanks to Mike Brouillard from the Chicago Botanic Garden for supplying us with this information.)

May's weather

May's average temperature was 64.5 degrees Fahrenheit (average is 60.1). We received 4.90 inches of rain compared with an average of 3.68 inches. The high temperature of the month was 90 degrees (May 28), while the low was 35 (May 1). We received rainfall on 16 days.

So what insects and diseases are we seeing on our trees this week?

Dutch Elm Disease

Arboretum crew leader Tim Lewis and his hard-working team spotted the first symptoms of DED on June 2 on American elm (*Ulmus americana*). We also hear of lots of infected trees in the suburbs. The hotter weather has undoubtedly sparked the emergence of symptoms. Look for curling, wilting leaves on an upper branch turning gray-green to yellow. This is called "flagging". When the branch is removed and the bark taken off, look for brown streaks in the outer wood. In addition, our pheromone traps for elm bark beetles (the insect vector for DED) are now plastered with elm bark beetles. Needless to say, this is an extremely serious disease and needs to be dealt with as soon as possible.

Control:

To avoid DED, plant tolerant or resistant elm cultivars. Potential elm bark breeding material such as elm logs and stumps with intact bark should be destroyed.



Example of a flag

Valuable elms should be inspected frequently. If a tree is newly infected, pruning is generally successful when no more than 5% of the tree shows symptoms or if at least seven to ten feet of clear wood is

present between the portion of the branch that shows streaking and the main trunk. The saw blade should be sterilized between cuts. If a tree shows many flags or completely wilts and dies, it must be removed quickly so that the disease isn't spread further. Root grafts between elms should be broken as DED can be spread by way of root grafts.

Valuable elms can be injected with fungicide. For information about chemical control, refer to the *Illinois Commercial Landscape Turfgrass Pest and Management Handbook 1998-1999* (ICLTPMH) if you are a commercial applicator or the *Illinois Homeowner's Guide to Pest Management* (IHGPM) if you are a homeowner.

Great web sites:

http://willow.ncfes.umn.edu/ht_save/ht_save.htm

http://willow.ncfes.umn.edu/ht_ded/ht_ded.htm

http://willow.ncfes.umn.edu/ht_dednecr/ht_dednecrosis.htm



Example of streaking

Sphaeropsis tip blight

The initial symptoms of Sphaeropsis are being seen on the new needles of Austrian pine (*Pinus nigra*). Needles on new shoots are stunted and drops of resin can be seen on them. Soon the needles and shoots will turn brown or straw-colored. The disease frequently starts on lower branches and spreads upwards. Later in the season, black pepper-like fruiting bodies will form at the base of the needles soon after the needles die. Sphaeropsis is a frequent disease of two- and three-needle pines. Red pine (*Pinus resinosa*), Austrian (*P. nigra*) and Scots pine (*P. sylvestris*) are especially susceptible.



Control:

Keeping trees healthy and good sanitation is the best defense. Be sure the tree is planted in the correct site. Keep trees mulched and water during dry periods. Don't prune susceptible pines in wet weather. As soon as the tip blight is noticed, prune out and destroy diseased twigs and cones (that harbor overwintering inoculum) back to healthy tissue. The pruning should be done during dry weather in order to lessen spread. Sterilize tools between pruning cuts. For chemical control, refer to the ICLTPMH or IHGPM.

Good web site:

<http://willow.ncfes.umn.edu/sphaeropsis/shootblight.htm>

Hawthorn leafminer

Hawthorn leafminer mines were found on fleshy hawthorn (*Crataegus succulenta*) and downy hawthorn (*Crataegus mollis*). These mines appear on the distal end of the leaf, instead of all along the midrib as do the mines of some of the other leafminers. Upon first glance, the leaves look blighted, but we performed the leafminer test by holding the leaves up to the sun and found frass and larvae between the upper and lower epidermis.

Control:

The effect of the mines is mostly aesthetic. Since the insect overwinters in the ground, destroying fallen leaves does not help control them. For chemical control, refer to the ICLTPMH or IHGPM.

Black vine weevils

Black vine weevil damage has been seen on the new leaves of Rhododendron (*Rhododendron* 'PJM'). The adults, which are nocturnal, chew notches on leaf margins. If the hole in the leaf is larger than a notch, it wasn't caused by a black vine weevil but perhaps by a grasshopper. Most of the damage is created by the larval stage which feed on roots. Another host is yew (*Taxus*).

Control:

The weevils are difficult to control once they are established. Ohio State University states that eggs and larvae survive more when soil is moderately to highly moist. Heavy mulch can maintain soil moisture. Therefore, don't use an excessive amount of mulch and don't water plants unless necessary. Parasitic nematodes such as *Steinernema* and *Heterorhabditis* spp. have been effective for controlling black vine weevil larvae. For chemical control, refer to the ICLTPMH or IHGPM.

Good web site:

<http://ohioline.ag.ohio-state.edu/hyg-fact/2000/2016.html>

Black spot of elm

Black spot was found on leaves of Russian elm (*Ulmus laevis*). These appear as fairly small black leaf spots. Later this anthracnose-type disease appears as coalescing black spots up to ¼ inch wide. Symptoms normally progress from low branches to higher ones.

Control:

Dead leaves and shoots should be collected and destroyed in winter to reduce overwintering inoculum. For chemical control, refer to the ICLTPMH or IHGPM.

Good web site:

<http://www.ksu.edu/plantpath/extension/facts/tree6.html>

Adelgids on larch

Our European larches (*Larix decidua*) are infested with adelgids. Actually the larches are quite attractive. When heavily infested, they look like they have snow on them! The insect covers itself with white woolly material for protection. It doesn't cause significant injury to the tree. We are unaware of any control.



Sawfly

Various sawfly larvae are being found on lots of hosts including European larch (*Larix decidua*), black locust (*Robinia pseudoacacia*) (by Lisa Bell), European ash (*Fraxinus excelsior*) (again by Lisa Bell), European elderberry (*Sambucus nigra*) (yet again by Lisa Bell), and American hazelnut (*Corylus americana*) (by Matt Pierce).

Control:

Except in really severe infestations, we handpick sawfly larvae. As discussed in previous issues, it is important to distinguish sawfly larvae from caterpillars if you wish to use any other control, as *Bacillus thuringiensis* var. *kurstaki* (Bt) is effective on young caterpillars but not on sawfly larvae. See Plant Health Care Report 99.04 for information on distinguishing between the two kinds of larvae, caterpillars and sawflies. For information about chemical control, refer to the ICLTPMH or IHGPM.

Oystershell scale

Oystershell scale was found on Inland New Jersey Tea (*Ceanothus ovatus*) by Arboretum horticulturist Matt Pierce. The crawlers are just beginning to hatch now. An adult female is tapered on one end, an 1/8 inch long and looks like an oystershell. Nymphs are very small and white. Infested trees can lose vigor, or the foliage may be small or speckled with yellow and twig dieback may occur. The bark of an infested tree looks scaly (pun intended).

Control:

Pruning out heavily infested branches may help in reducing scale. For chemical control, refer to the ICLTPMH or IHGPM.

Lecanium scale

Arboretum curator Kunso Kim found lecanium scale adults on hackberry (*Celtis jessoensis*). We haven't found crawlers yet. Lecanium scales are "soft" scales which means they don't have the hard, plate-like shell of the "armored" scales. Soft scales produce lots of honeydew, but armored scales do not. Lecanium scales vary greatly in size, color and shape. The adult females look like reddish brown blobs on twigs that are about 1/8 inch in diameter. After the females lay eggs, they dry up and become brittle. We will try to inform you when the eggs hatch.



Control:

Heavily infested branches may be pruned out to reduce infestations. A summer oil or insecticidal soap can be sprayed when the crawlers are active. The best time to use an insecticidal spray is when the crawlers are present. For chemical control, refer to the ICLTPMH or IHGPM.

Thyronectria canker

Thyronectria canker was discovered on Caspian honey locust (*Gleditsia caspica*). It is the most common canker disease on honey locust and a serious one. When cankers girdle the branches, it causes the leaves

to wilt and the branch to die. We found several dead branches on our tree. The bark on the dead twigs had turned orange-red. At the junction of the living tissue and the dead twigs, perithecia (fruiting bodies) are forming. *Thyronectria* has been linked to drought stress. It is a major source of decline in thornless honey locusts. It is a serious disease in landscape plantings, but in natural wooded areas, causes only minor dieback.

Control:

Keep trees healthy by mulching and watering during drought periods. Prevent wounds to reduce the chance of infection. Disinfect pruning tools between cuts. Prune any cankered branches at a branch junction and at least one foot below the visible margin of the canker. Remove infected trees promptly to reduce the spread of infection. Colorado State University claims that Sunburst honeylocust is the most susceptible to cankers, while Imperial, Skyline and Thornless are most resistant.

Good web site:

<http://www.colostate.edu/Depts/CoopExt/PUBS/GARDEN/02939.html>

Thrips

We're seeing lots of larval thrips on a number of field plants and leaf damage caused by the thrips on flowering dogwood (*Cornus florida*). If anyone has seen thrip damage on lilac, we would be interested in knowing. Thrips are small, only 0.04 to 0.08 inches long. You really need a hand lens to see them well. They aren't good fliers but are usually distributed by the wind. They cause distortion and mottling of leaves. They are super pesty greenhouse pests.

Control: For chemical control, refer to the refer to the ICLTPMH or IHGPM.

Good web site:

<http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn030.html>

Black rot of grapevine

Black rot caused by a fungus, *Guignardia bidwellii*, was diagnosed on leaves of Amur grape (*Vitis amurensis*). We found light brown leaf spots about a quarter of an inch in diameter. The spots were not round so much as angular. They have a distinct dark brown margin. Black pycnidia (fungal fruiting bodies) were found on the spots. Under the microscope, we found the colorless, one-celled conidia (fungal spores).

Control:

Avoid overhead watering of grapevines that spreads the fungal spores and promotes leaf infection. For chemical control, refer to the refer to the ICLTPMH or IHGPM.

Guignardia leaf blotch of horse chestnut

The initial stages of *Guignardia* leaf blotch were also found on horse chestnut (*Aesculus hippocastanum*). Right now we're seeing the reddish brown to brown areas with a yellow border that blends with the normal green leaf tissue. Upon closer inspection with a hand lens (which good scouts never leave home without), you can see the pycnidia (fungal fruiting bodies) which look like



black pepper on the lesions on the upper surface of the leaf. The blotches will enlarge and may cover the leaf by the end of summer. Premature defoliation may then occur.

Control:

This disease generally develops after the tree's annual growth is complete and therefore does not do much harm in the landscape, although it can be a problem in a nursery. We know of no chemical treatment. Removing fallen leaves may help to destroy the inoculum. Pruning trees to improve air flow may also help.

Leaf beetle larvae

Leaf beetle larvae were found chewing holes on leaves of Amur grape (*Vitis amurensis*) by Lisa Bell. They almost look like caterpillars on first glance, but have no pro legs (back legs). These were about a third of an inch long and had olive green and black stripes. There are hundreds of kinds of leaf beetles.

Control:

Insecticidal soap can be used to control leaf beetle larvae.

Good web site:

<http://www.extension.umn.edu/Documents/D/G/DG6342.html>

Two marked treehoppers

Two marked treehoppers nymphs were found on wafer-ash (*Ptelea trifoliata*) by Arboretum horticulturist Donna Pluciennik. The nymphs gather on tree shoots. They are about 1/8 inch long, dark gray to brown and have spines sticking out of their abdomens. The nymphs look quite different from the adult stage, when they have high, curved horns coming out of their thorax that point forward. The adults are dusky brown with two yellow spots on their backs and are less than 1/2 inch long. Both stages can, as you may imagine by their name, jump! Everyone should see two marked treehoppers at least once in their lives because they're so amusing. Treehoppers suck plant juices, but don't do much damage. However they produce honeydew which encourages sooty mold.

Control: Control is usually not necessary

Good web site:

http://willow.ncfes.umn.edu/walnut_ht/treehop2.htm

Sooty mold

We discovered sooty mold on Rhododendron (*Rhododendron* 'PJM'). This looks like a black coating and lives on the surfaces of leaves or fruits. To be sure it is sooty mold, try rubbing it off the leaf. You should be able to. The black coating is actually dark mycelia. These are saprophytic fungi that live on insect honeydew. They harm plants only indirectly by blocking out light and reducing photosynthesis. They have no host preference as far as we know.

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.

Good web site:

<http://www.ag.ohio-state.edu/~ohioline/hyg-fact/3000/3046.html>

Spiny elm caterpillars

Arboretum horticulturist Matt Pierce found spiny elm caterpillars devouring leaves of sugarberry (*Celtis laevigata*). These larvae will turn into mourning cloak butterflies. They are basically black with black spikes and tiny white dots and larger red spots. They prefer elms, willows, poplars, birches, hackberries and lindens. There are two generations per year.



Control:

The butterfly is attacked by numerous parasites and a number of bird species. *Bacillus thuringiensis* var. *kurstaki* (Bt) is effective against young larvae, but is not as effective against older larvae.



Phyllosticta leaf spot on maple

Phyllosticta leaf spots are now being seen on black maple (*Acer nigrum*). The spots are round, up to a third of an inch in diameter and brown with a pale yellow center which almost becomes translucent. There is a distinct brown ridge around each spot.

Control:

Rake and destroy fallen leaves to reduce the source of inoculum.

Other problems

We are also seeing more anthracnose (we think) on Norway maple (*Acer platanoides*). Dr. George Ware brought us some silver maple leaves (*Acer saccharinum*) from his neighborhood that appear to have Taphrina leaf curl. Maples appear to be getting hit hard this year.

Have a great week and happy scouting!

The Plant Health Care Report is prepared by Donna Danielson of The Morton Arboretum and reviewed by Karel Jacobs, Ph.D., of The Morton Arboretum and Fredric Miller, Ph.D., of the University of Illinois. Disclaimer: 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 Plant Health Care Report is available on The Morton Arboretum web page at www.mortonarb.org.