



UNIVERSITY OF ILLINOIS EXTENSION

HOME, YARD & GARDEN PEST

College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana-Champaign
Illinois Natural History Survey, Champaign

NEWSLETTER

No. 4 • May 14, 2008

PLANT DISEASES

Plant Clinic Spruce Samples

Over the past 2 weeks, the Plant Clinic has received numerous spruce samples from trees that are growing poorly. Spruces with branch death, internal needle drop, or areas of dead stems are the usual complaints. We have found *Rhizosphaera* needle cast on a few of these samples and addressed that problem in issue 2 of this newsletter. Spruce spider mites have also been confirmed on a few. The bulk of the samples, however, have not yielded a biotic cause of decline. Stress from overcrowding, deep planting, poorly drained soil, water stress over the past 2 years, and even salt injury have contributed, depending on the site. Keep an open mind and check into these possibilities when determining the cause of your tree's decline.

If you would like some diagnostic help with struggling spruces or other evergreens, the Plant Clinic can help. Our quality of help, however, is directly related to the type of information provided. If you send a sample, use the guidelines provided on the clinic Web site, <http://plantclinic.cropsuiuc.edu/>. The sample should contain one or more branch tips, including about 12 inches of growth, with needles attached. Pick an affected area that is not completely denuded. Use the clinic data form if possible. Describe the symptoms in the entire planting, as well as on one tree; and include digital images when possible. We prefer only three images: a picture of the area, a close up of the trunk at the soil line, and a picture of an affected branch. Make sure they are in focus. You may include prints or a disc, or send them in an e-mail to npataky@uiuc.edu. Indicate that the sample is being sent in the mail. Don't forget to send your payment with the sample.

The infectious spruce problems may be treated now, to help protect new growth. For this reason, you want to get to the bottom of the problem soon. The noninfectious problems are managed throughout the year. If you think the problem is abiotic (noninfectious), you have more time to spare.

Cytospora canker is another possible cause of spruce decline. It causes a canker at the base of the affected stem where it connects to the trunk. A canker is a dead area

of wood. Cankers on spruce produce a white, crusty or sappy exudate. Cytospora cankers eventually girdle (surround) stems, killing tissue beyond the canker and causing newest needles to brown and die first. Eventually the entire branch dies. Check for cankers at the base of affected branches. *Report on Plant Disease (RPD)*, no. 604, "Cytospora or Leucostoma Canker of Spruce," shows you what to look for in your tree. This report is available on the Internet at <http://www.ag.uiuc.edu/~vista/abstracts/a604.html>. Cytospora canker is an infectious disease, but it is a disease that is known to affect stressed trees. In this case both the infectious and noninfectious factors need to be managed. (Nancy Pataky)

Anthracnose of Shade Trees

Overall shade tree growth in Illinois has been favored by the weather this spring. Rains have been plentiful but not excessive in most areas. Low temperatures caused some pockets of injury but generally did not dip low enough to cause frost damage. On the other hand, several periods of cool, wet weather have been ideal for the development of anthracnose.

Anthracnose causes water-soaked leaf spots ranging in color from dark green to brown. Some tree species, such as ash, oak, maple, and sycamore, may also form small twig cankers where anthracnose fungi may reside. Other trees are susceptible to varying degrees as well, but the trees just listed are the species on which we traditionally see anthracnose in Illinois in the spring. Dogwood anthracnose is much more severe but occurs later in the season. Look for dogwood anthracnose in June. Lesions on maple leaves often occur along veins but may be scattered on the leaf as well. Ash anthracnose lesions move in from the leaf margins. Oak anthracnose is more evenly distributed over the infected leaf. Frost injury causes entire leaves or leaf tips to turn black and usually appears worst on the newest leaves. Frost damage happens suddenly, usually overnight, and across a wide range of species.

Anthracnose diseases of shade trees require cool, wet conditions for infection, most of which occurs in the 2 weeks following bud break. Succulent new plant growth is most susceptible. Older leaves and drier conditions later in the season usually retard repeating cycles of infection. Sycamores appear to be leafing out slowly

this year. If you look more closely, you may see that the first buds were killed, probably by anthracnose. Don't worry; warmer temperatures will promote a second flush of healthier leaves.

As a reminder, generally fungicides are not recommended to fight anthracnose of shade trees. We recommend that you help the tree produce a new flush of foliage by providing water in periods of drought. Dogwood anthracnose, which shows up in June, is effectively managed with fungicides. Products are applied as new leaves expand and repeated as recommended on the label of the chosen product, until leaves are fully expanded. Check for registered products in the *Illinois Commercial Landscape and Turfgrass Pest Management Handbook* or the *Home, Yard & Garden Pest Guide*.

Some general anthracnose management guidelines include removing fallen leaves, removing dead wood, mulching over the root system, and watering in periods of drought. Trees in dense shade or more protected locations are usually infected worst. Pruning may allow better air movement in the area in those locations.

For more information on anthracnose and shade tree leaf spots, refer to issues of *Report on Plant Disease (RPD)* listed on the U of I Vista Web site, at <http://www.ag.uiuc.edu/%7Evista/horticult.htm>. Look for "Anthracnose Diseases of Shade Trees." (Nancy Pataky)

Ivy Leaf Spot

English ivy (*Hedera helix*) is a popular ground cover in shaded locations. It is susceptible to two diseases with very similar symptoms. The first is bacterial leaf spot, which first appears as small, circular, dark green, and water-soaked (oily-looking) areas on ivy leaves. Spots enlarge and have a red-brown to black center, with a water-soaked margin. Sometimes a yellow halo appears around the lesion. Stems may be infected as well.

The other disease is caused by one of several fungi. In general, fungal leaf spots of ivy are described as red to brown in color and irregular in shape. Certain fungal species may cause lesions to have concentric rings or depressed centers. Fungal leaf spots form fruiting bodies that contain spores. These fruiting bodies are small (pin-head-sized), black, and embedded within the leaf spot.

Although these descriptions seem different, the bacterial lesions appear like the fungal disease when dry. If you can look at fresh tissue, you can better distinguish these diseases and choose the proper control. Both pathogen groups are spread in splashing water. Do not work with plants when they are wet, or you may spread the pathogen within the ivy planting.

For more information about these diseases, refer to *Report on Plant Disease (RPD)*, no. 652, "Leaf Spot Diseases of English Ivy," available at <http://www.ag.uiuc.edu/~vista/horticult.htm> or in printed form at University of Illinois Extension offices. (Nancy Pataky)

INSECTS

Scouting Watch

Bridal wreath spirea, or Vanhoutte spirea (*Spiraea x vanhouttei*), is blooming in southern Illinois and is in early bloom in central Illinois. This is a major phenology plant in Don Orton's book *Coincide*. With phenology, stages of plant development (usually bloom time) are used to predict stages in pest development. This method is more accurate than using calendar dates because the plant is exposed to the same climatic conditions as the insect. Thus, "early" and "late" springs associated with unusually high or low temperatures, respectively, cause similar responses in both plant and insect.

Phenology helps predict when pest stages susceptible to control are likely to be present, but it is not a spray guide. When a phenological event predicts that a pest is susceptible to control, one needs to scout to verify that the pest is present and in a susceptible stage before using a control measure. Following are the most common pests that are in susceptible treatment stages during vanhoutte spirea bloom.

Full bloom: Birch leafminer young larvae; elm leaf beetle young larvae; European pine sawfly feeding larvae; gypsy moth feeding larvae; pine needle scale crawlers (first generation), black turfgrass ataenius (first generation). **Full to late bloom:** Lilac (ash) borer newly hatched larvae; oystershell scale (brown) crawlers. **Finishing bloom:** Bronze birch borer newly hatched larvae. **Most blossoms brown, still a few white:** Flat-headed appletree borer larval hatch; peach tree borer newly hatched larvae; viburnum borer newly hatched larvae. **Bloom finished:** Oystershell scale (gray) crawlers. (Phil Nixon)

Eastern Tent Caterpillar

Eastern tent caterpillar has hatched throughout Illinois. There are scattered infestations throughout the state but apparently more widespread than it has been for several years. Removal of the tents at night or on cloudy days, or the application of an insecticide such as *Bacillus thuringiensis kurstaki* (Dipel, Thuricide), is recommended at this time to prevent heavy defoliation.

The larvae hatch at bud break of their hosts, which are primarily trees in the rose family. These include crabapple, wild black cherry, hawthorn, serviceberry, mountain ash, flowering plum, and flowering cherry. Fruit trees, including apple, peach, apricot, pear, and plum are also attacked. When newly hatched, the larvae are black but develop yellowish white stripes down their back within a few days. After sitting on the egg mass on the twig for a couple of days, the larvae migrate to a twig crotch where they spin a white, communal silk tent. They leave the silk tent at various times throughout the day to feed on the leaves. Leaves are eaten from the margin inward, sometimes leaving only the midvein, which soon dries, curls, and falls off of the tree. Heavily infested trees can be totally defoliated. Defo-

liated trees typically survive this feeding damage and leaf out later in the spring with few, if any, noticeable effects.

Fully grown larvae reach about 2 inches in length and are black, with an obvious yellowish white stripe down the back. Close examination reveals gold stripes, blue spots, and other small markings. As the caterpillars become larger, they increase the size of their tent to accommodate them. When fully grown, they leave the tree and migrate across the ground until they find a protected area to pupate within a silk cocoon. Adult moths emerge in about 2 weeks and are brown, with white bands across the wings. They are about 1 inch long with 1-1/2-inch wingspans. After mating, female moths lay their eggs in reddish brown clusters that wrap around pencil-size-diameter branches. Each egg mass is about 1/2 inch long and contains 100 to 300 eggs. These eggs do not hatch until the following spring when bud break occurs. (*Phil Nixon and Morton Arboretum*)

Hemlock Rust Mite

Hemlock rust mite, *Nalepella tsugifoliae*, feeds primarily on the undersides of hemlock needles in the spring. This is an eriophyid mite, which is much smaller than a spider mite, being visible only with a higher-power hand lens or microscope. The mites are cigar-shaped, with only four legs at the front end. Unlike many eriophyid mites that tend to hide in buds, these mites are easily seen on the leaf undersides with enough magnification.

Their feeding causes the foliage to turn bluish and then yellowish before dropping. Because they are primarily spring feeders, the foliage at the tips of the branches will look fine because it developed after most feeding ceased last spring. Older foliage farther back on the branch will show feeding damage or be bare from needle drop.

Hemlock rust mite damage is seen mainly in northern Illinois. The mite overwinters as eggs laid on the needles, and those mites are already actively feeding this spring. They hatch early in the spring, being first susceptible to miticide sprays when saucer magnolia is in the pink bud stage.

Not all miticides are effective in controlling eriophyid mites. Abamectin (Avid), bifenthrin (Onyx), insecticidal soap, summer spray oil, and spiromesifen (Forbid) provide effective control. Remember that the mites are primarily on the leaf underside, so be sure to get thorough spray coverage there. If insecticidal soap or summer spray oil is used, apply twice, 1 week apart; the other miticides should provide control with one application. (*Phil Nixon and Morton Arboretum*)

Pine Needle Scale

Pine needle scale is a serious pest of pines throughout the state. It is most prevalent on Scots and mugo pine but is common on many other pine species as well. It is also found on spruce and hemlock and is likely to cause dieback on spruce. It is probably most serious to Christmas tree

growers but commonly kills landscape plants as well.

Pine needle scale appears as elongate, white insects about 1/8 inch long on pine needles. There is a small, tan area at one end. Numbers commonly build up until the foliage appears whitish from a distance. In these high populations, branches and even entire trees can be killed. Pine needle scale overwinters as eggs. Eggs hatch into brick red crawlers as vanhoutte spirea is in full bloom. The crawlers, first-stage nymphs, roam on the foliage before settling down to feed and are susceptible to insecticide applications. They secrete a white, waxy substance that covers and protects the scale from desiccation, natural enemies, and insecticides. Over several molts under the waxy covering, the scale lose their legs, eyes, and antennae, becoming a protected sucking blob.

Adult legless females remain under their waxy coverings, but adult males emerge as tiny, two-winged insects. These exist only to fertilize the females, having no mouthparts, so they die after only a few days of not feeding. Mated females fill the area under the waxy covering with eggs and die. These eggs hatch into a second generation of crawlers that emerge when hills of snow hydrangea, *Hydrangea arborescens* 'Grandiflora', blossoms turn from white to green. Also, Queen Anne's lace or wild carrot, *Daucus carota*, is in bloom at this time. This scale is susceptible to insecticide applications at that time as well. These scale grow throughout the rest of the summer, emerging as adults and producing eggs that overwinter.

Being an armored scale, these insects suck out the contents of individual cells and do not produce honeydew. Severely attacked foliage turns yellowish, eventually dies, and turns brown. It is common for this scale to be numerous on only one branch or one side of the tree. In landscapes, it tends to appear first on the side of the tree next to a building. On Christmas tree farms, only occasional trees may be infested or uninfested, depending on the severity of the infestation. When scouting, be sure to check all sides of a landscape tree, and be sure to check the entire field in a nursery or Christmas tree farm.

Application of acephate (Orthene), bifenthrin (Onyx, Talstar), cyfluthrin (Tempo), insecticidal soap, or summer oil should be effective if applied when the crawlers are active. One application is typically sufficient at this time of year although it is a good idea to apply two sprays of insecticidal soap or summer spray oil 7 to 10 days apart because they have so little residual effect. The second generation of crawlers emerges over a longer period, so any insecticide application should be repeated after 7 to 10 days. Realize that summer spray oil removes the blue bloom from Colorado blue spruce, leaving you with a green spruce.

Dead scale do not fall off of the needles. The easiest way to determine whether control is being attained is

to look for scale on the current year's growth once the needles that emerge from the candles have matured. Because of the late emergence of these needles, this is most effective as an end-of-season evaluation. You can also determine control with a hand lens or microscope. Using a needle, you can easily flip off the waxy covering to reveal the scale insect below it. Brown, shriveled scale are dead; plump, smooth scale are alive. Realize that a number of scale must be checked because dead scale from previous years will also be present. (Phil Nixon)

Buffalo Gnats

We have received reports of buffalo gnats, also known as black flies, attacking people and poultry, particularly in central Illinois south to Calhoun County. Buffalo gnats are small, 1/16- to 1/8-inch-long, humpbacked black flies. They bite exposed skin, typically leaving a small, red welt. When the gnats are numerous, the toxins from their bites can kill poultry and other birds. They feed on the thinly haired areas of dogs, cats, and horses, such as ears and undersides. There are number of species that occur in Illinois, and some species are relatively specific to host. With this host specificity, one type of animal may be attacked much more than others. Only in the last couple of years have we had common human-biting species, and that has been reported already this year.

Buffalo gnats live as larvae in clear, fast-moving streams and feed by filtering food from the water. With the federal Clean Water Act and various other pollution-reducing measures, the streams, rivers, lakes, and ponds of Illinois are becoming clean enough to support life that has been much reduced since the 1930s.

Adult buffalo gnats can fly from 7 to 15 miles from their source; but generally, Illinois residents that are bothered live within a half mile of the stream producing the flies. Although there are reports of DEET-con-

taining insect repellents not being effective, scientific literature reports that DEET repellents provide the most effective protection. In areas with high populations of buffalo gnats, people commonly wear head nets, hats with insect protective netting that covers the head down to the shoulders. These are sold in sporting goods stores. Unlike mosquitoes, buffalo gnats do not bite through clothing, so only exposed skin is susceptible to attack. They also do not enter buildings.

Controlling the buffalo gnats as larvae is generally not an option. *Bacillus thuringiensis israeliensis* (Bti) is effective against the larvae but is restricted by extensive regulation before it can be applied to running water. Other insecticide application would not only be in violation of federal and state laws but would likely kill fish and other wildlife. Running water is extensively protected by law because most running water eventually is used as human drinking water. If the buffalo gnats follow the pattern of previous years, they should be a problem for only 3 to 4 weeks and are not likely to return until next year. (Phil Nixon)

Home, Yard, and Garden Pest Newsletter is prepared by Extension specialists from the University of Illinois at Urbana-Champaign and the Illinois Natural History Survey. Information for this newsletter is gathered with the help of staff members, Extension field staff, and others. Karel Jacobs and Donna Danielson of The Morton Arboretum also provide information and articles.

Major authors are Phil Nixon, (217)333-6650, and Fredric Miller, (708)352-0109, entomologists; Nancy Pataky, (217)333-0519, plant pathologist; and Tom Voigt and David Williams, (217)333-0350, and Michelle Weisbrook, (217)244-4397, horticulturists. Phil Nixon is the executive editor of the *Home, Yard, and Garden Pest Newsletter*. This newsletter is written by faculty in the Department of Natural Resources and Environmental Sciences and the Department of Crop Sciences. It is edited by Mary Overmier, Information Technology and Communication Services.

For subscription information, phone (217)333-2666 or (800)345-6087, or e-mail acesnews@uiuc.edu. Web subscriptions are available (<http://www.ag.uiuc.edu/cespubs/hyg>).

Copyright © 2008, Board of Trustees, University of Illinois