

PLANT DISEASES

Help Pines Now!

Sphaeropsis blight of pine has become one of the most common landscape diseases in Illinois. It causes death of branch tips, browning of needles at branch tips, and sappy cankers that girdle branches. With a little work on infected pines now, you can make a big difference in the appearance of those trees this summer, while reducing inoculum to other trees.

The causal fungus, *Sphaeropsis pini*, survives over the winter on infected needles, stems, and cones. If your tree is infected, take a close look at the cones. Each cone will be covered with hundreds of black fruiting bodies of this fungus. They appear as black, pinhead-sized structures embedded in the cone. It is easy to see that each cone could serve as a very effective source of inoculum for further infection. Infection occurs with warm, wet weather, when new needles begin to emerge. The succulent new growth is a primary infection site. For these reasons, removal of infected material is usually done in the dormant season. If you have not already done so, remove infected material now! If possible, wait until foliage is dry.

Infected tissues include cones, brown needles, and dead stems. Rake and remove cones from the site. Prune out dead branch tips that can be reached. Remove cankered wood where possible or where doing so does not disfigure the tree.

Research has shown that drought-stressed trees are more prone to infection than healthy trees. Be sure to water pines in periods of drought this growing season.

For details on this disease refer to a past *HYG* article, "Sphaeropsis Blight of Pine," no. 1, 2001. Also consult *Report on Plant Disease*, no. 625, "Sphaeropsis Blight or Diplodia Tip Blight of Pines," available under horticulture publications at <http://www.ag.uiuc.edu/%7Evista/> or in your local Extension office.

There has been debate over the last few years as to the value of fungicide protection of pines against Sphaeropsis blight. Read details in *HYG*, no. 4, 2002, before you decide whether to invest this time and money. The first sprays should be applied at bud break, so do not delay this decision. (Nancy Pataky)

Powdery Mildew in Turf

Powdery mildew is the name associated with diseases seen on many hosts. Symptoms include a powdery white growth on the surface of leaves, stems, and other plant parts. There are many powdery mildew fungi. Most that attack landscape plants thrive in hot, humid conditions. Recently, however, you may have seen a powdery mildew that has been enjoying your turfgrass; and we have experienced typical Illinois spring weather. This powdery mildew is not typical of most powdery mildews in the landscape.

Powdery mildew of turf is caused by a fungus called *Erysiphe graminis*. It is most common on Kentucky bluegrass, bermudagrass, redtop, fine-leaved fescues, and zoysiagrass. Look for the disease in shady areas of turf where air circulation is minimal. The fungus thrives during cool (55° to 70°F), humid, cloudy weather. The disease can spread rapidly as well. Under ideal conditions (for the fungus), the conidia (spores) may even germinate and produce infection within 2 hours of landing on a leaf.

Although we don't usually see powdery mildew as a major problem on turf, a severe attack may weaken and kill plants, especially in crowded, newly planted areas. The disease is most common in spring, late summer, and fall in Illinois. Mild, cloudy days followed by cool, damp nights favor development of powdery mildew on turf.

There are several nonchemical recommendations to help control this disease. Although it helps to have a strong stand of turf, excess nitrogen fertilization actually increases powdery mildew problems, so try to fertilize based on soil tests or at least avoid high-nitrogen fertilization. Cultural practices to increase the penetration of light, movement of air, and drying of turf also help. This may mean pruning surrounding plants, spacing new plants, and watering early in the day. It also helps to mow frequently and keep the turf at the recommended height. For bluegrass this is 1-1/2 to 2-1/2 inches. There is resistance reported to powdery mildew in some cultivars of Kentucky bluegrass, bermudagrass, and several species of fescues, but I could not find specific recommendations. At the very least, look for resistance information in your garden center and use shade-tolerant cultivars in shady sites.

Some information on turfgrass cultivars can be found on the University of Illinois Extension turf Web site, <http://www.turf.uiuc.edu/>.

You will find fungicides that are effective against powdery mildew of turf listed in the *Home, Yard, and Garden Pest Guide* and the *Commercial Landscape and Turfgrass Pest Management Handbook*. Fungicides can be applied when the disease is first evident and will help keep the disease in check. Still, chemicals act only as a temporary stop to disease development, which is why we concentrate on nonchemical control measures. More information can be found in *Report on Plant Disease*, no. 406, available on the Extension VISTA Web site, <http://www.ag.uiuc.edu/%7Evista/pubs.html>. (Nancy Pataky)

Fire Blight of Callery Pear

Some cultivars of ornamental Callery pears were developed and marketed, at least in part, with the idea of providing resistance to fire blight. That resistance has not always held up in the landscape. In past issues of this newsletter (no. 1, 2004; no. 3, 2003), you can find more information about fire blight. Recently, I have received a few calls and one positive sample of fire blight on ornamental pear, so this problem is again upon us. Read through past *HYG* news articles and refer to *Report on Plant Disease*, no. 801, "Fire Blight of Apple," for details about the disease and its management. *RPDs* can be found on the Extension VISTA Web site, www.ag.uiuc.edu/%7Evista/pubs.html, or in local Extension offices. Look for water-soaked or wilted new growth that quickly turns brown to black and remains attached to the stem. Also, dark cankers may develop in the wood of Callery pears.

Infections occur through blossoms or wounds. It may be tempting to boost new growth with high fertilization rates, but overfertilization should be avoided. Succulent new growth is more susceptible to infection because it is easily wounded. (Nancy Pataky)

Pagoda Dogwood Problem

The pagoda dogwood (*Cornus alternifolia*) is a beautiful tree with nice horizontal branching and small tree stature. It does not seem to have as many disease problems as we see with flowering dogwood (*Cornus florida*) and seems to have better resistance to the potentially lethal *Discula* anthracnose.

Pagoda dogwoods are very susceptible to a canker disease called Cryptodiaporthe. Some of my southern colleagues have reported to me that Pagoda dogwoods die after about 20 years of growth, due to infection by Cryptodiaporthe canker. Most of us know that canker fungi often infect a plant following stress. That is most likely the case with this disease as well.

Pagoda dogwoods grow best in cool, shady areas and prefer moist, acidic, well-drained soil. They are known to be very drought sensitive and decline when grown in hot, dry sites. If you have a Pagoda dogwood in a protected, shady spot, be sure to water it in periods of drought. If left to fend for itself, Cryptodiaporthe canker likely will infect and kill the tree.

Cryptodiaporthe canker is also known as golden canker because of the color of affected branches. Look for stem dieback, with cankers at the base of affected branches. Prune to remove cankered wood, cutting 4 to 6 inches below affected areas. Water the tree in periods of drought and try mulching over the root system to provide it a more even temperature. This will also help retain moisture. For more information about this disease specifically, refer to the Web site <http://www.uwex.edu/ces/wihort/gardenfacts/X1125.pdf>. Cankers in general are discussed in *Report on Plant Disease*, no. 636, "Canker and Dieback Diseases of Woody Plants." (Nancy Pataky)

WEEDS

All Roundups Are Not Created Equal

Garden centers may already be aware that a new version of Roundup is on the shelves this season, but this new version has created some confusion for shoppers. In the past, Roundup Concentrate (glyphosate) was available for use around fruits and vegetables and for garden plot preparation. However, the new Roundup Concentrate Plus has the additional active ingredient diquat dibromide. This provides for a much quicker kill. However, there is no mention on the label of use around fruits and vegetables and for garden plot preparation, which means it cannot be used in these areas. Potential diquat dibromide residues are the issue. Perhaps residue tolerances have not been established for fruits and vegetables. Regardless of the reason, these uses have been omitted from this new label. This serves as a reminder to always read product labels carefully. Labels can change with little fanfare. (Michelle Wiesbrook)

INSECTS

Vanhoutte Spirea Bloom

Bridal wreath spirea, or Vanhoutte spirea (*Spiraea x vanhouttei*), is blooming in southern and central Illinois—at least as far north as Peoria. This is a major phenology plant in Don Orton's book *Coincide*, available from the publisher, Labor of Love Conservatory, 468 S. President, Suite 103, Carol Stream, IL 80188-2894; (630)668-8597. 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). **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*)

Pine Needle Scale

In many parts of Illinois, now is the time to treat for pine needle scale, *Chionaspis pinifoliae* while Vanhoutte spirea, *Spiraea x vanhouttei*, is in bloom. It is during this time that the eggs have hatched into young crawlers that are moving about on plants, and these young crawlers are most susceptible to insecticide applications. Mugo, Austrian, Scots, and red pines are most susceptible to attack from pine needle scale.

Mature pine needle scales are 2 to 3 millimeters long, elongated, white scales on the needles of evergreens. Pine needle scale overwinters as eggs underneath the mated female scale cover. Females are capable of laying up to 100 eggs during their lifespan. Eggs hatch into crawlers from late April through June. Crawlers move around on the needles before finding a place to settle and feed. They withdraw plant fluids from the mesophyll layer of needles, causing the needles to turn yellow, then brown. Whole branches may be killed. Also, heavy infestations of pine needle scale can kill entire trees, particularly those pine trees that are stressed. Young crawlers may be blown onto other plants by wind—starting another infestation. There are typically two generations per year in Illinois.

As with many insect and mite pests of ornamental trees and shrubs, management of pine needle scale revolves around sustaining plant health and using insecticides accordingly. Properly implementing cultural practices—including irrigation, fertility, and mulch-

ing—minimizes stress and allows plants to tolerate low to moderate populations of pine needle scale without suffering injury. Insecticides recommended for controlling pine needle scale include acephate (Orthene), insecticidal soap, and horticultural (=summer) oil. All three insecticides are applied when Vanhoutte spirea is in bloom. Second-generation crawlers may be treated when hills-of-snow hydrangea, *Hydrangea arborescens*, blooms turn from white to green. Repeat spray applications 7 to 10 days later may be needed because second-generation eggs hatch over an extended period. (*Raymond A. Cloyd*)

Periodical Cicada

There have been numerous reports in the news media about periodical cicadas emerging this year. Brood X, the Great Eastern Brood, is a major 17-year cicada brood that is expected to emerge this spring. It occurs over much of the eastern United States, but in Illinois gets into only Iroquois, Vermilion, and Edgar counties in the east-central portion of the state. Most of the area of these counties will be affected, as well as a narrow band just north of I-74 extending about halfway across Champaign County from the east.

Expect a large number of news reports on this insect because the Great Eastern Brood occurs in Washington, D.C., and in New Jersey, close to New York City. With the high concentration of news reporters in these two cities, many stories are likely to be produced. If the news reports are like they were in 1987, they will make it sound like cicadas are coming out all over the United States, and there will be numerous calls to Illinois arborists and landscapers.

The next major cicada emergence in Illinois will be Brood XIII, the Northern Illinois Brood, which will cover much of the northern half of Illinois in 2007. Brood XIX, the Great Southern Brood, emerges in 2011. The Great Southern Brood northern limit includes Iroquois County on the east and Hancock on the west. In between, the line drops down to include Sangamon. North of that line, the Northern Illinois Brood emerges, with the exception of Henderson, Warren, Knox, Fulton, and Schuyler, northern DeWitt, and northwestern Champaign counties, which will experience an emergence of Brood III, the Iowan Brood in 2014. The Great Southern Brood covers all of southern Illinois except for Crawford, Lawrence, Wabash, Pulaski, Alexander, Union, and Jackson counties, which will experience Brood XXIII, the Lower Mississippi River Valley Brood in 2015.

Periodical cicadas have a major impact on small, newly planted trees. They lay eggs into the trunk, causing it to weaken and snap off. We recommend avoiding major tree planting during the year before a

major emergence. If practical, delay planting trees this spring in Iroquois, Vermilion, and Edgar counties in areas where there are established trees that had the cicadas in 1987. New housing developments on agricultural land or other treeless areas are unlikely to have serious cicada problems. Similarly, if all shrubs and trees were removed before houses were built, any cicada nymphs in the soil would have starved to death when the trees and shrubs were removed, so those areas will also not have cicada problems. (Phil Nixon)

Scouting Watch

Eastern tent caterpillar is very numerous in southern Illinois from I-70 south but is very uncommon so far in the northern two-thirds of the state. This pattern is a common one for this insect in Illinois; but usually, when it is numerous in southern Illinois, the rest of the state has at least a noticeable population. Although the caterpillars primarily attack trees and shrubs in the rose family, such as crabapple, hawthorn, wild black cherry, and pyracantha, they crawl to and feed on a wide variety of other plants once the caterpillars have stripped the foliage of the original host. Be watchful for feeding on birch, elm, maple, oak, poplar, willow, and other nearby trees. Large caterpillars may not be controlled very well by *Bacillus thuringiensis kurstaki* (Dipel, Thuricide), but spinosad (Conserve) and pyrethroids should be effective. Realize that fully grown caterpillars over 1-1/2 inches long are not likely to be controlled by anything other than a boot on concrete.

Honeylocust plant bug is present throughout the state. This insect is usually found in far northern Illinois only along the shore of Lake Michigan, but is

being found this year at Morton Arboretum, so watch for it in other areas of northern Illinois as well.

Acephate (Orthene), bifenthrin (Talstar), cyfluthrin (Tempo), and summer spray oil are effective controls.

Euonymus caterpillar has been found feeding at the Morton Arboretum on *Euonymus obovatus*. This 1-inch-long, whitish caterpillar with black spots feeds in groups on leaves inside of a web that they spin. It is most common on *Euonymus europaea*, being found in Illinois from about Kankakee on north. It is known to feed on *Euonymus alatus* (burning bush), but this has not been reported in Illinois. Euonymus caterpillar is controlled with a variety of insecticides, including *Bacillus thuringiensis kurstaki* (Dipel, Thuricide), as long as high-pressure spray is used to penetrate the silk web. Scout closely for this insect because it tends to cause heavy damage before it is noticed. (Phil Nixon, Morton Arboretum, ArborSmith)

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