

PLANT DISEASE

Leaf Spots of Turf

The wet weather has caused a fair amount of disease on new growth this spring. The Plant Clinic has received a number of samples and questions about turf showing leaf spots. Samples have indicated the presence of a disease that used to be known as *Helminthosporium* leaf spot. That disease has been reclassified into several leaf diseases, and pathologists now refer to “*Helminthosporium* types” when discussing leaf spots in the genera *Bipolaris*, *Drechslera*, and *Exserohilum*.

These fungi are now active and may be found throughout Illinois. The symptoms vary, depending on fungal species, grass species, weather conditions, and cultural conditions. In general, look for small spots or lesions varying in color from reddish brown to purplish black. Lesion centers are often tan and typically have a dark reddish brown border, giving an “eyespot” appearance. In wet weather, the lesions may merge, yellowing the turf or causing tip dieback.

These leaf spot diseases favor dry periods alternating with prolonged periods of cloudy, moist weather and moderate temperatures. The diseases progress quickly when grass is cut too short, turf is slow growing, or fertility is low. Excessive shade and excessive use of nitrogen also encourage leaf spot diseases. Turf specialist Dr. Tom Voigt points out that applications of the phenoxy herbicides can also enhance turf leaf spots. Some phenoxy herbicides include 2,4-D, mecoprop, and 2,4-DP. Other stresses may contribute to disease severity.

Cultural control measures are usually effective. In cases for which such measures are not adequate (such as at some golf courses), chemical controls may be used as protectants. Chemicals labeled for use in Illinois are listed in the *Illinois Commercial Landscape and Turfgrass Pest Management Handbook, 1998–1999*. Correct mowing practices will help control leaf spots. Mow all turfgrasses at the recom-

mended maximum height for the species. Mow frequently enough so that no more than one-quarter to one-third of the leaf surface is removed at one time. If a lawn has been fertilized, it may be necessary to mow every three or four days during warm, wet periods.

These leaf spot diseases can be suppressed with proper fertilization; however, it is important to avoid high levels of nitrogen. Contact Tom Voigt for a set of guidelines on how much fertilizer to apply to a home lawn and when to make the applications. Another source of turf information is the University of Illinois Center for Turfgrass Science Web site at <http://www.turf.uiuc.edu>.

Information is also available on leaf spot disease resistance by some bluegrass cultivars adapted to Illinois. ‘Marion’ was one of the first Kentucky bluegrass cultivars developed for resistance to leaf spot diseases. Of course, that cultivar may have susceptibility to other diseases that are a concern in your area, so look at the total resistance package before deciding on a cultivar. Resistance levels will vary somewhat by location. For more information, consult *Report on Plant Diseases* No. 405. (Nancy Pataky)

Watch for Dogwood Powdery Mildew

Powdery mildew is a disease that is easy to diagnose. In Master Gardener training sessions, I often teach this because it is one of the most obvious diseases in the landscape. A powdery white growth on the surface of leaves, often in feltlike patches on the leaves and occasionally on stem tips or fruit, is a typical symptom. Some plants (such as rose or apple) may show some distortion of leaf growth.

The symptoms on dogwood are different than the typical powdery mildew and may be passed off as another problem. On dogwood, this disease may cause a white powdery growth on the leaf surface, but it may also cause scorch on the edges of leaves, dead patches on leaves, yellowing, leaves with a reddish color, and premature leaf drop.

In most cases, we do not consider powdery mildew a major problem because it occurs late in the season and does not affect overall plant health. On most ornamental species, it is considered more of an aesthetic problem than a growth problem. Dogwoods may be more severely affected by this disease because it occurs earlier in the season. There has been an increase in levels of powdery mildew in Kentucky over the last several years, and we have had reports of dogwood powdery mildew in Indiana.

Although the Plant Clinic has not been inundated with samples of powdery mildew, it has been identified in Illinois and may have been overlooked in many situations. Look for powdery mildew on dogwoods in exposed locations or partially shaded spots in the landscape. Dogwoods have many problems in our state, including winter injury, cankers, leaf spots, anthracnose, and borers, to name a few. Now powdery mildew can be added to the list.

According to University of Kentucky plant pathologist Dr. John Hartman, the oriental dogwoods (*Cornus kousa*) are resistant to dogwood powdery mildew; the *C. florida* (flowering dogwood) cultivar 'Cherokee Brave' has partial resistance; and all other *C. florida* dogwoods are susceptible.

Prune out dead wood, water the plants in periods of drought, and prune surrounding plants to promote better air flow in the landscape. It is also a good idea to mulch dogwoods to avoid trunk injuries from mowers or trimmers.

Fungicides may be used to control this disease, but make certain that it will be worth the expense, that the tree is a valuable dogwood specimen, that a correct diagnosis has been made, and that cultural practices are also employed. Dr. Hartman states that effective fungicides include Banner MAXX (propiconazole), Bayleton (triadimefon), Cleary 3336 (thiophanate-methyl), Eagle (myclobutanil), Immunex (the homeowner-use formulation of propiconazole), Immunox (the homeowner-use formulation of myclobutanil), and Rubigan (fenarimol). First sprays should be applied in early June and continued once every two to three weeks until mid-August. Be certain that your spray equipment provides good coverage of the fungicide. (Nancy Pataky)

Volutella Blight of Pachysandra Here Again

Pachysandra is a shade-tolerant ground cover that does not appear to be overused and that usually has few disease problems. About the only disease we see as a problem in pachysandra is Volutella blight. This disease occurs during wet springs, especially in cases

where winter injury may have occurred. Volutella blight has shown up in central Illinois, and reports from Ohio indicate some injury there as well. (However, specialists warn not to mistake the blight for environmental scorching.)

Volutella is a fungus that can cause necrotic blotches on leaves and stems; the blotches range in color from brown to black. In very wet conditions, the fungus may kill large patches of plants. A diagnostic feature to look for is pink-to-orange spore masses on the underside of leaves or on stems. Look particularly for Volutella blight in dense plantings where heavy mulch has been used and where conditions are warm and moist. Pachysandra beds that have been stressed by winter, drought, insects, or overcrowding are more susceptible to this fungal disease.

Because growers tend to promote dense beds of ground cover, the disease will appear even in well-kept beds if the fungus is present and if warm, wet weather continues. Consult *Report on Plant Diseases* No. 649 for cultural disease control suggestions, and consider a protective fungicide spray for the planting now. (Actually, sprays could have been initiated when new growth started.) The applications are meant to be protective in mode of action; therefore, as long as weather conditions remain warm and wet, repeat the sprays at 10- to 14-day intervals. Some chemical options include chlorothalonil, copper, Duosan, Fore, mancozeb, and Zyban. Always follow label directions when using any chemical product. (Nancy Pataky)

Disease Briefs

We discussed **peach leaf curl** and **oak leaf blisters** in the previous issue of this newsletter. Another *Taphrina* species was reported May 2 at The Morton Arboretum in Lisle: **Taphrina leaf curl** was discovered there on river birch. We continue to see very severe cases of leaf curl on peach.

Anthracnose has become quite intense on sycamores in Illinois, as expected. The conditions from the time of budbreak to two weeks later were cool and wet—ideal for the anthracnose fungi. Reports of anthracnose on ash have been widespread, including cases at The Morton Arboretum on Korean ash, Texas ash, and some white and green ash. Leaf drop of ash in central Illinois is often traced back to anthracnose. Fungicide sprays are not recommended. Trees will continue to form new leaves. Help the tree by watering in periods of drought and fertilizing in the fall.

Cankers of various types are showing up on many tree and shrub species. These fungal pathogens invade stressed plants or wounded sites. Canker fungi tend to

grow all winter long when plant growth is minimal. The cankers we see now may have occurred on recently winter-injured wood but are more likely to be older cankers. They are more visible now because sap is flowing and cankers often ooze sap, or because sporulation of causal fungi may be more prevalent or foliage has not yet covered up stem abnormalities. Prune cankers (in dry weather) from the tree where possible. Remember, the primary cause of cankers is generally stress; the fungus is usually secondary. (Nancy Pataky)

INSECTS

Phenology and Insect Pest Prediction

Insect emergence during the growing season appears to be based on a variety of factors, particularly weather factors. As cold-blooded creatures, insects are sensitive to outdoor temperatures. It has been demonstrated that various species develop above certain threshold temperatures; at lower temperatures, development is sharply reduced or halted.

A variety of methods are used to predict when a pest insect is at a susceptible stage. Calendar date has been used for years but does not take into account warm springs, which accelerate insect development, or cold springs, which retard it. Using degree days is more accurate in predicting insect emergence, but this method requires calculation or at least entering daily high and low temperatures into a calculator or computer program.

Plant phenology is the process of associating a plant event, such as blooming, with the presence of a susceptible stage for pests. This is a very practical method because landscapers or nursery personnel can observe the plants in the course of their daily work as an indicator of when to expect susceptible insect stages. Phenology should be used to help determine when to scout for an insect—and not as a stand-alone insect control guide. As with any system, the presence, number, and potential damage of an insect must be verified before insect pest management is undertaken.

The book *Coincide* by Donald A. Orton provides susceptible-stage information on a wide range of landscape insect pests based on the observation of blooming and other phenological events on common landscape plants. The book is available for about \$30 through White Oaks Group, P.O. Box 1, Flossmoor, IL 60422 and by telephone at (708) 755-9700. We are particularly fortunate in Illinois because Don Orton,

an Illinois Department of Agriculture nursery inspector, made most of his observations within our state. (Phil Nixon)

Pests and Vanhoutte Spirea Phenology

Many insect events correlate with the blooming of Vanhoutte spirea, *Spiraea x vanhouttei*, which is occurring in central Illinois. The following information from the book *Coincide* should help practitioners plan scouting activities.

Birch leafminer: Look for small mines when blooming starts.

Pine needle scale: Red crawlers are active when blooming starts.

Taxus mealybug: Nymphs are active during blooming.

Lilac/ash borer: Egg hatch begins in full to late bloom.

Oystershell scale (brown race): Crawlers hatch and are active in full to late bloom.

Oystershell scale (gray race): Crawlers hatch when blooming finishes.

Black vine weevil: Look for feeding notches as blooming finishes.

Bronze birch borer: Egg hatch begins when blooming finishes.

Elm leaf beetle: Feeding damage will begin to occur as blooming finishes. (Phil Nixon)

Scouting Report

True white grub adults have emerged in central Illinois. These one-inch-long reddish brown to brown June beetles feed at night on the leaves of crabapple, ash, oak, and other trees. Leaf edges being eaten with no observable insects present is a common symptom. Scouting at about 10:30 p.m. will catch these insects in the act. Various chemical insecticides such as carbaryl (Sevin), chlorpyrifos (Dursban), diazinon, and synthetic pyrethroids are effective controls.

Euonymus webworms (also known as euonymus caterpillars) are just appearing on European euonymus (*Euonymus europaeus*) in northern Illinois. Look for larvae in small webs. The webs increase in size as the larvae feed on the leaves and can become large. These webworms are very pale yellow with black spots and can grow to almost one inch long. They are controlled with *Bacillus thuringiensis kurstaki*, sold as Dipel, Thuricide, and other trade names, as well as other chemical insecticides.

Cankerworm damage is becoming more common on leaves of many trees throughout the state. *Bacillus*

thuringiensis kurstaki, sold as Dipel, Thuricide, and other trade names, is effective, as are other chemical insecticides.

Honeylocust plant bugs are feeding on expanding honeylocust leaves throughout the state. The bugs are very small right now; the easiest way to find them is to shake a branch over a white piece of paper. If you see a tiny green insect crawling on the paper, take a closer look at it with your hand lens. Plant-bug feeding causes severe leaf distortion, chlorosis, and yellow-brown leaf spots. A heavy infestation may cause premature leaf drop. (*Phil Nixon; Donna Danielson and Karel Jacobs, The Morton Arboretum*)

Birch, Elm, Alder Leafminers Fly

The adults of birch, elm, and alder leafminers are out in abundance this spring. These closely related sawflies live within the leaf as larvae, feeding between the upper and lower leaf surfaces.

These sawfly leafminers spend most of their life cycle burrowed into the ground. The adults emerge in spring to lay eggs in leaf tissues. After about a week, the eggs hatch and young larvae begin to make mines in the leaves. The mines look like brown elongate or roundish spots between veins in the leaf. Eventually these insects will eat a hole through the leaf epidermis, fall to the ground, and excavate a hole in the soil. Elm leafminer attacks American elm, English elm, and Scotch elm.

A systemic insecticide is necessary to obtain control of the larvae within the leaves. Acepate, sold as Orthene, traditionally has been used (avoid using Orthene on American elm), although imidicloprid, sold as Merit and Marathon, is gaining favor among professional applicators. Unfortunately, to get the best efficacy out of Merit against the first generation of these leafminers, you should apply it in October or November of the previous fall. (*Phil Nixon; Dave Shetlar, The Ohio State University; Donna Danielson and Karel Jacobs, The Morton Arboretum*)

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.

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