Turf Wars

How to win the battle against lawn disease.

BY JOE PROVEY AND KRIS ROBINSON

The hedges are trimmed. You've got a full tank of propane for the grill and plenty of fixin's. The cooler is stocked. Your neighbors are due over in a few minutes. Then you see it. A mysterious brown patch on your lawn that was not there a couple of days ago. Your good mood evaporates quicker than dew in a drought.

The fact of the matter is that the harmful microorganisms that put a damper on your party didn't just appear. They're present in almost every yard. Dwelling in your soil and upon your lawn are a myriad of thread-like forms of life called fungi.

LAWN AND GARDEN

Fortunately, it takes more than the presence of pathogens (disease-causing microorganisms) to bring on infection in lawns. Also needed are a host—a grass susceptible to a particular pathogen—and environmental conditions that foster disease. These conditions vary by pathogen, but generally include warm weather and extended periods of moisture. Drought and high heat can encourage problems as well because they reduce the grass's ability to fight infection.

Fungi: Friend And Foe

Not all fungi are your enemy. Some of them are important components of healthy soil, helping grasses to consume nutrients and keeping other disease-causing fungi in check through competition for resources. Problems arise when the pathogenic group becomes dominant. These fungi are spread by wind, rain, grass clippings and even your lawn mower. They can survive the winter and remain dormant in soil or thatch for long periods. Although you can't keep pathogens off your grass, you can avoid disease by manipulating the factors within your control—the grasses that make up your lawn and the environment.

Good Care Practices

To keep your lawn from becoming a host, choose the right grass for a given location and keep it healthy. Given the wide range of cultivars (cultivated varieties) available today, you have a good chance of avoiding certain diseases right from the start.

Well-aerated lawns with good drainage and air circulation will experience fewer moisture problems that invite disease. Avoid frequent, light waterings that encourage shallow root growth and drought stress. Watering late in the day leaves a wet grass canopy that's conducive to fungal growth, and excessive use of high-nitrogen fertilizer promotes lush top growth that's more prone to disease. Using a dull mower blade shreds grass tips, providing an entry point for infection.

The best time to assess your turf's state of health is before mowing. Take notice of any areas that appear wilted or off-color, but keep in mind

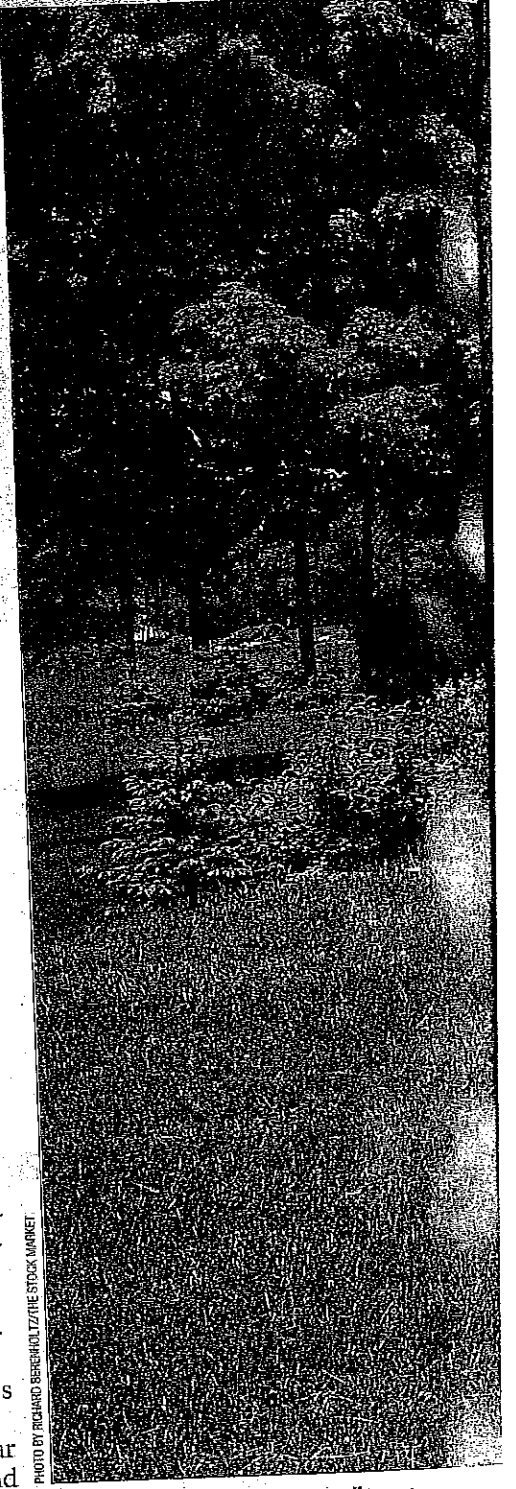


PHOTO BY RICHARD BERGHOLTZ/THE STOCK MARKET

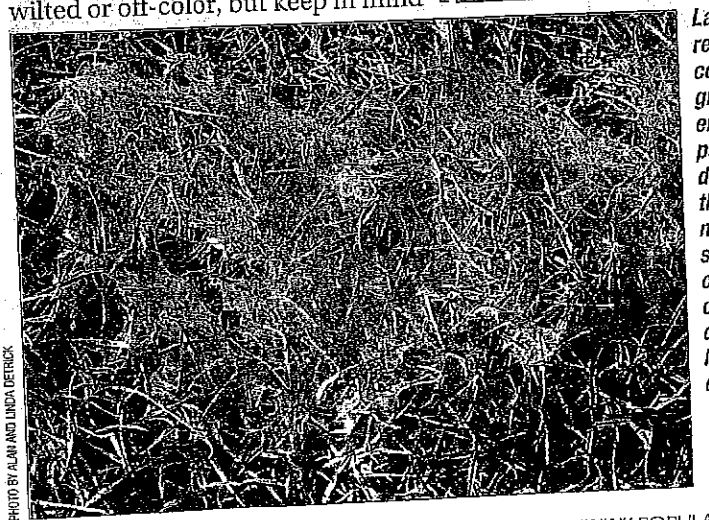


PHOTO BY ALAN AND LINDA DETRICK

Lawn disease requires the right combination of grass type, environment and pathogen. The detail at left shows the grayish-white mycelium of gray snow mold covering a section of turf. The damage to your lawn can be extensive.

that these problems can be caused by things other than disease. A general browning out of cool-season grass during summer is most likely a result of its own protective response to drought and heat. Dull, wilted, bluish-gray turf may simply be a sign that it's time for watering, and general yellowing and stunted growth may be due to a lack of iron or nitrogen.

Regular observation of your lawn is important if you want to catch early disease symptoms before they appear. Look for spots or banding, color changes, or signs of decay on grass blades. Give the grass a tug to check for rot. Finally, come out early in the morning while the lawn is damp with dew to look for signs of fungal mycelium—fine, cobweb-like threads that will disappear with the day's heat and sun. If you're stumped by symptoms, take a sample to a reputable nursery, or consult your nearest Cooperative Extension Service agent or state university plant-pathology department.

When disease does get a foothold in your lawn you need to take immediate steps to contain it. Bag your lawn clippings and don't put them in your compost pile. Avoid walking through infected turf, especially when it's wet.

In addition to controlling disease through cultivar choices and environmental strategies, research has shown that microorganisms in organic composts can help in certain cases. Recommended sources for such top-dressings are composted manure, sludge (such as Milorganite) or agricultural waste. These materials are often available at garden centers.

If your disease symptoms continue unabated, you may benefit from applying a fungicide. However, while fungicides clear up certain problems, they may set up your turf for the development of new ones.

PHOTO BY DR. PETER LANDSCHOOT

Fairy rings form in soil that's high in woody organic matter. In moist conditions, the rings may be accompanied by mushrooms.

This is caused by the fungicide killing off disease-suppressing microorganisms as well as the targeted organisms.

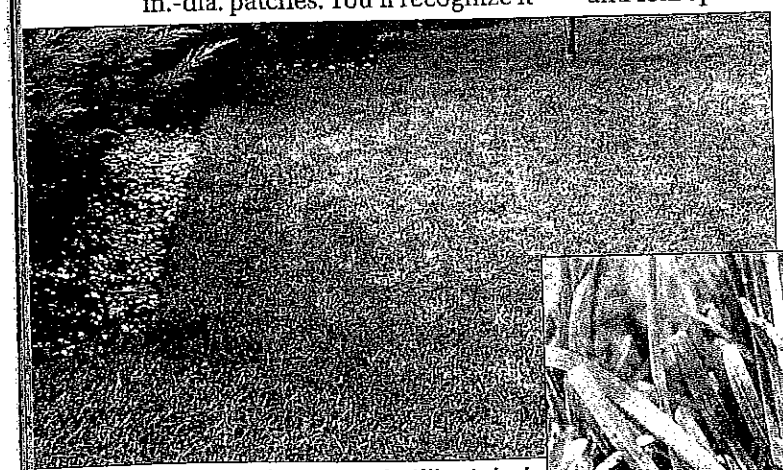
Spring To Fall Diseases

One common condition that's caused by over 50 varieties of fungi is characterized by rings of dark green grass. Called **fairy rings**, these areas may be accompanied by mushrooms, while midsummer and fall rings are more apt to be composed of dead grass. Fairy rings are difficult to eradicate unless dug out to a depth of at least 1 ft. Aerating to improve water penetration and fertilizing to minimize color variation are helpful.

Stripe smut is a condition that appears in cool weather, causing yellow, stunted growth in 6- to 12-in.-dia. patches. You'll recognize it by black stripes of erupted spores along grass blades, which later dry and become shredded and curled. The best defense is to use cultivars such as the bluegrasses Adelphi or Midnight, and maintain adequate fertilization. When the disease is present, water thoroughly, mow often and bag clippings.

If you find 6- to 12-in. circular patches of matted, straw-colored grass surrounding a tuft of green grass, this may be the condition known as **necrotic ring spot**. You may also notice that the thatch in the affected area has decomposed, creating a sunken appearance. This disease is especially common to bluegrass and red fescue. While the fungus is active during cool, moist periods, the damage frequently doesn't show itself until later when turf is stressed. Overseed with disease-resistant cultivars of tall fescue and perennial ryegrasses such as Classic and Eclipse, or Columbia bluegrass. Water to lessen drought and heat stress, and avoid excessive fertilizer use. Remove excess thatch and maintain adequate aeration and drainage.

Helminthosporium melting out and **leaf spot** are two phases of a fungal disease that is especially destructive on overfertilized, lush bluegrasses. The initial phase, stimulated by cloudy, moist weather in the 70° to 85° F range, displays distinctive dark purple spots that develop into buff-colored oval lesions bordered by a dark brown or purple margin. The color of the blades turns yellow and then tan. During the melting-out phase, rot develops in roots and crowns. To handle the condition, use resistant bluegrass cultivars such as Glade, Nugget or Pennstar. Avoid excessive use of nitrogen fertilizer, water infrequently but deeply, mow high, aerate, top-dress with organic mulch and remove excess thatch.



PHOTOS BY AMERICAN PHYTOPATHOLOGICAL SOCIETY

Leaf spot favors overfertilized, lush bluegrasses (right). In the melting-out phase (above), blades turn yellow and tan, and rot develops.

PHOTO BY AMERICAN PHYTOPATHOLOGICAL SOCIETY

Cool-weather stripe smut displays black stripes of erupted spores on blades. Grass becomes dry and blades curl.

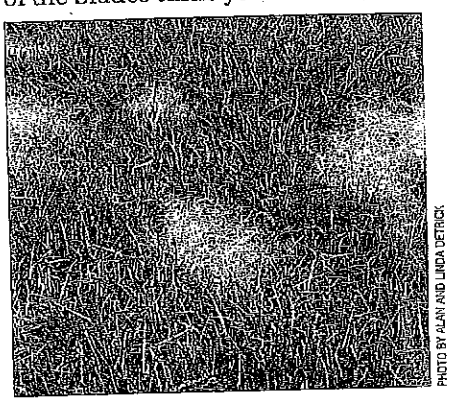


PHOTO BY ALAN AND LINDA DETRICK

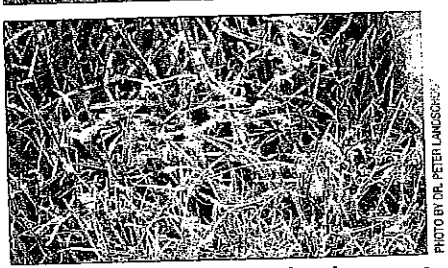


PHOTO BY DR. PETER LANDSCHOOT

Brown patch features circular areas ranging from a few inches to several feet in diameter. Healthy green leaves may persist in brown areas.

Summer Diseases

If you find dark grass that looks water-soaked and then develops into browned-out, circular areas, you could be looking at **brown patch**—a condition prevalent during moist,

(Please turn to page 126)

hot weather on overfertilized lawns. The patches can be several inches to several feet in diameter, with some green leaves persisting and roots remaining intact. Grass blades may have irregular ash-gray lesions that run along one side and are bordered by a dark brown margin. Management includes using cultivars such as the ryegrasses Pennant and Prelude, America bluegrass and slow-release nitrogen fertilizer. Water deeply but infrequently, mow high, remove excess thatch and improve aeration and drainage.

Low-nitrogen lawns—especially those that are stressed by drought and have heavy dew—are candidates for **dollar spot**. On taller lawns you'll find mottled, straw-colored, 4- to 6-in.-dia. patches. Grass blades will show light tan bands bounded by reddish-brown margins. Patches may merge to form large, irregular areas, and grayish-white mycelium may be present in early morning. Overseed with a blend of improved cultivars such as Adelphi, the perennial ryegrass All Star, and Reliant fescue. Maintain adequate nitrogen and potassium fertility, water deeply when necessary and remove excess thatch. If your lawn is prone to dollar spot, remove the morning dew by dragging a hose across the lawn.

Pythium blight is a rapidly spreading disease involving the entire grass plant. It occurs on poorly drained soils with a wet grass canopy, and when nighttime temperature plus relative humidity equals 150. Symptoms include the appearance of 1- to 6-in.-dia. brown, wilted patches that turn to streaks indicating drainage patterns. In early morning, the grass is slimy, dark and matted, and white, cottony mycelium may be present when grass is wet. As it dries, the grass turns light tan and shrivels. To fight the problem, improve drainage, avoid overwatering, aerate, reduce excess thatch and avoid nitrogen fertilizer during warm weather. Check calcium levels and add lime if necessary.

Slow, hot-weather growth on compacted, shady lawns with low fertility are ingredients for a condition known as **rust**. It's characterized by small yellow flecks that develop into pustules releasing yellow, orange, red or dark brown spores. From a distance, the turf appears orange or yellow, and spore residue rubs off if touched. Treat it with rust-resistant cultivars of fine fescues and the Kentucky bluegrasses Challenger and Eclipse. Provide appropriate fertilization and irrigation, prune to reduce shade, maintain aeration and mow frequently, bagging clippings.

Fall To Spring Diseases

Gray snow mold (typhula blight) is strictly a cold-weather disease, appearing where snow has melted, especially in areas where there have been piles of snow or drifts. Its symptoms include irregular 2- to 24-in.-dia. patches of bleached-out,

matted turf, covered with moldy, grayish-white mycelium. Tiny black orange-brown spherical sclerotia (hard fungus bodies) may be embedded in the leaves and crowns of infected plants. To handle this problem, avoid late, heavy nitrogen fertilization in the fall. Keep thatch to a minimum and the height of your grass lower going into winter. Avoid piling snow onto your lawn, and prevent compaction by limiting activity when the ground is covered with snow. In the spring you'll want to rake early to promote drying and to reduce matting. If you notice any damage at that time, fertilize lightly.

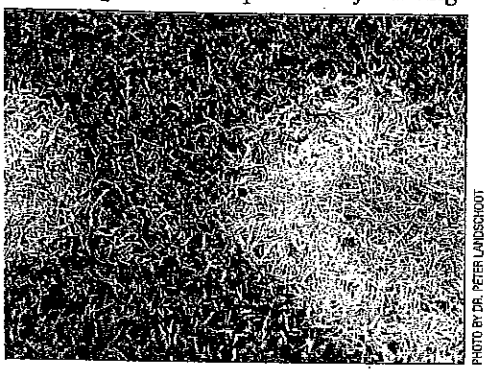


PHOTO BY DR. PETER LANDSCHOOT

Pink snow mold develops from late fall to early spring, during moist cool weather, with or without snow cover. Pink mycelium is visible in sunlight.

Pink snow mold (fusarium patch) develops in cool, moist, cloudy weather, with or without snow cover. It's distinguished by small, light tan to rusty-brown circular patches up to 2 ft. in diameter that become ringlike as interior grass regrows. When the area is moist, salmon-colored mycelium is visible in sunlight. Treatment includes late fall fertilization with slow-release nitrogen fertilizer. Keep thatch low and don't allow leaves or debris to remain on the lawn over the winter. Rake in early spring, followed by light fertilization if the lawn shows damage. FM

Dollar spot affects low-nitrogen lawns—especially when the grass is stressed by drought and subject to heavy dew.

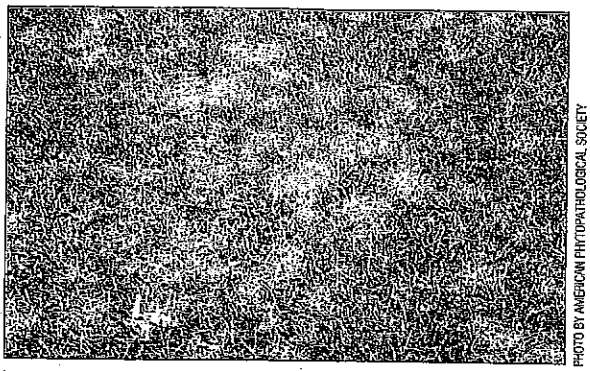


PHOTO BY AMERICAN PHYTOPATHOLOGICAL SOCIETY

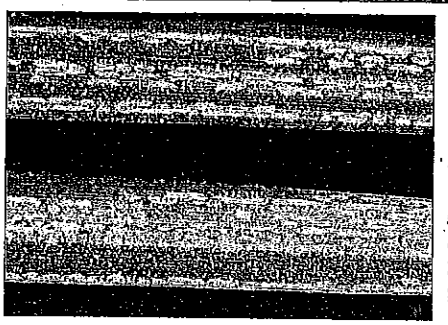


PHOTO BY AMERICAN PHYTOPATHOLOGICAL SOCIETY

Rust appears on low-fertility, compacted or shady lawns, when growth slows due to hot, dry weather.