



# Plant Disease Control

## Managing Diseases of Landscape Turf

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Management of disease in landscape turf begins with a program of sound cultural practices. Turfgrass maintained in a healthy, vigorous condition is less susceptible to disease than stressed turf. In many cases, simple manipulations in management practices will greatly influence turf vigor and reduce the impact of a particular disease in a turf stand. The following are some guidelines to help maintain disease-free landscape turf.

### Seed Selection

When establishing a turf stand, choose species that are well-adapted to the site and management objectives. Disease- and insect-resistant cultivars of most turf species are available and should be used as the basis for an integrated pest management program. Promote genetic diversity when seeding by blending and mixing high-quality, certified seed purchased from a reputable source.

### Fertility

A balanced fertility program, based on the results of soil tests, will improve the vigor of

plants and their ability to resist disease. Nitrogen fertilizers can have a significant effect on disease potential. Excessive applications of highly soluble nitrogen fertilizers can stimulate many diseases. Excessive applications promote succulent tissue that is easily penetrated by many fungi. Conversely, turfgrasses grown in nutrient-poor soils are susceptible to several other diseases. Applications of recommended amounts of nitrogen to N-deficient turf will stimulate the turfgrass to produce leaves faster than the fungus can blight them.

### Mowing

Regular mowing is necessary to maintain the aesthetic qualities of a turf stand. However, mowing may favor disease by creating wounds through which a pathogen may enter and, in some cases, by providing the pathogen with a means of dissemination. Frequent mowing at improper heights consistently removes the most photosynthetically active tissue. This reduces carbohydrate production and limits the natural ability of turfgrasses to resist infection. Remove no more than 1/3 of the

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**COMMON DISEASES OF LANDSCAPE TURF**

<b>DISEASE</b>	<b>SYMPTOMS/SIGNS</b>	<b>HOST</b>	<b>SEASON</b>	<b>BEST MANAGEMENT</b>
<b>RED THREAD</b>	Small, water-soaked patches. Antlerlike sclerotia on leaf tips.	bluegrass ryegrass fescues	early-spring to late-fall	Avoid low nitrogen, excess thatch, and drought stress.
<b>LEAF SPOT and MELTING OUT</b>	Oval, purple leaf spots. General thinning and yellowing.	bluegrass ryegrass fescues	early-spring to late-fall	Avoid high nitrogen, leaf wetness, and low mowing. Use resistant cultivars.
<b>POWDERY MILDEW</b>	White powdery spore masses on leaf blades.	bluegrass fescues	spring to fall	Avoid high nitrogen and low mowing. Use shade-tolerant cultivars.
<b>NECROTIC RING SPOT</b>	Rings of dead turf with green, healthy turf (or weeds) in the center. Root and crown rot.	bluegrass fine fescues	spring and fall	Avoid high nitrogen and drought stress. Overseed with ryegrass or tall fescue.
<b>DOLLAR SPOT</b>	Patches 2 to 3 inches in diameter. Hour-glass leaf lesions with bleached centers and orange borders.	bluegrass ryegrass fescues	late-spring to fall	Avoid low nitrogen, low mowing, thatch, leaf wetness and drought stress.
<b>SLIME MOLDS</b>	White, gray, brown, red, or yellow slimelike blobs of spores on leaf blades.	bluegrass ryegrass fescues	late-spring to fall	Remove spore masses by washing or raking. Control thatch.

<b>DISEASE</b>	<b>SYMPTOMS/SIGNS</b>	<b>HOST</b>	<b>SEASON</b>	<b>BEST MANAGEMENT</b>
<b>BROWN PATCH</b>	1 to 3 foot patches of thinning turf. Tan leaf lesion with dark border.	bluegrass ryegrass tall fescue	summer	Avoid high nitrogen, leaf wetness, and excess thatch.
<b>SUMMER PATCH</b>	Rings of dead turf with green, healthy turf (or weeds) in the center. Root rot.	bluegrass fine fescue	summer	Avoid high nitrogen, wet soil, compaction, and low mowing. Use resistant cultivars.
<b>PYTHIUM BLIGHT</b>	Rapid, greasy collapse of leaves. Cottony mycelium.	bluegrass ryegrass fescues	summer	Avoid high nitrogen and leaf wetness. Reduce thatch. Improve drainage.
<b>FAIRY RINGS</b>	Dark green rings 1 to 20 feet in diameter. Rings of mushrooms. Rings of dead turf.	bluegrass ryegrass fescues	spring, summer, and fall	Reduce thatch and avoid drought stress. Fertilize and rake mushrooms to mask.
<b>RUST</b>	Orange spore masses on leaf blades. General thinning and yellowing of turf.	bluegrass ryegrass fescues	fall and spring	Avoid low nitrogen and leaf wetness. Use resistant cultivars.
<b>STRIPE SMUT</b>	Black masses of spores on shredded leaves. General thinning.	bluegrass	fall and spring	Avoid high nitrogen. Use resistant cultivars.
<b>PINK SNOW MOLD</b>	1 to 5 inch patches of bronze turf. Gray to pink mycelial mass.	bluegrass ryegrass fescues	late-fall, winter, and spring	Avoid high nitrogen and thatch. Remove leaves and mow late into fall.

leaf tissue at each mowing. Keep mower blades sharp in order to encourage rapid healing of the cut grass. Mow turf when dry, especially when diseases are present. Mow at the recommended heights and raise the mowing height when the turf is under stress or displaying disease symptoms. Leaving clippings on the turf will prevent their introduction into the solid waste stream, will reduce yearly nitrogen needs, and will not contribute to thatch accumulation or disease development.

### **Irrigation**

Free moisture is essential for disease progression. Turfgrasses grown under wet conditions develop succulent tissues that are easily penetrated by fungi. Water-logged soils inhibit gas exchange and result in dysfunctional roots. Drought stressed turf lacks vigor and is prone to disease. Deep, infrequent irrigation, only to avoid drought stress, will maintain the turf in good vigor and reduce the impact of many diseases. Water early in the morning to allow the leaves to dry before nightfall. Selective pruning of trees and shrubs around a turf

area will promote light penetration and air circulation, which will also reduce humidity in the turf canopy.

### **Aerification**

Excessive thatch accumulation restricts root growth and favors drought stress. Many turfgrass pathogens survive as saprophytes in the thatch layer. Soil compaction also restricts water movement and air penetration into the root zone, eventually reducing root function and causing a decline in plant vigor and disease resistance. Limit foot and vehicular traffic on wet soils to prevent excessive compaction. Regular aerification in the fall or spring will reduce thatch accumulation and relieve compacted soils.

A healthy turfgrass can recover more rapidly from periodic disease outbreaks. Fungicides alone may help to minimize short-term disease damage but are not a substitute for proper cultural management. For further information, contact your local County Rutgers Cooperative Extension office.