

SUMMER PATCH DISEASE OF LAWN GRASSES



University of Maryland
Turfgrass Technical Update
TT-18 November 2003

Peter H. Dernoeden

University of Maryland Dept. of Natural Resource Sciences & Landscape Architecture

Summer patch is the most destructive disease of Kentucky bluegrass and creeping red fescue lawns in the Mid-Atlantic region. Hard fescues also are susceptible to summer patch, but they are somewhat more resistant than creeping red fescues.

Summer patch is caused by the fungus *Magnaporthe poae*, which infects and destroys roots. Another patch disease with symptoms similar to summer patch in Kentucky bluegrass and fine leaf fescue is necrotic ring spot, which is caused by *Ophiosphaerella korrae*. Necrotic ring spot, however, is not common in Maryland.

The information provided in this publication applies only to summer patch disease.

Symptoms of summer patch first appear as wilted, dark-green, and roughly circular areas of turf 1-2" in diameter. The affected turf soon turns a straw-brown color, leaving patches that initially resemble the symptoms of dollar spot disease. These patches increase in size and may take on crescent shapes, elongated streaks, or circular patches. The outer edge of patches may have a yellow or bronze appearance, and leaves dieback from the tip.

Healthy turf may persist in the center of blighted patches, producing rings or 'frog-eye' symptoms. The most common symptoms are circular, straw-colored patches that range from 3-12" in diameter. There may be living plants in the center of patches, but distinct frog-eyes are less common. Circular depressions called 'crater pits' occasionally are present. Affected regions may coalesce, and large areas of turf can be destroyed within a 7-21 day period. Creeping red fescue turf develops orange or bronze-colored patches prior to affected plants turning straw-colored. Crater pits are more common in creeping red fescue than Kentucky bluegrass.

Summer patch most commonly occurs in Kentucky bluegrass lawns that are two years of age or older. The disease may appear in newly sodded lawns because sod is often harvested after it is two or more years old. In creeping red fescue, however, symptoms often appear in the summer following a fall seeding.

Environmental factors are key to the development of summer patch. The disease invariably is more severe in full sun and generally appears in July or August. Symptoms may appear in early July when daytime temperatures over 90° F prevail. Soil temperatures over 78° F in the root zone and moist soils are critical factors in predisposition of turf to summer patch.

During wet summers with moderate temperatures, the symptoms may not develop until August or early September; disease activity declines with the advent of cooler weather in mid-to late September.



Symptoms of summer patch disease: bronze-edged frog eyes and dead areas that grow into each other.

KEY POINTS

Summer patch affects Kentucky bluegrass, creeping red fescue, and hard fescue; tall fescue and zoysiagrass may be immune.

Summer patch is a disease of hot weather. Symptoms appear July - August, and decline in September.

Turf growing in sunny, hot lawn areas is often affected earliest and most severely.

Cultural practices strongly influence the development of summer patch.

Disease control with fungicides is costly and often erratic.

Summer patch is most severe on sunny, exposed slopes or other very warm areas of a lawn such as those near walls, walks and driveways. Drought stress following warm and wet periods, and compacted soil are other factors that are associated with this disease.

Other factors that lead to summer patch disease include heavy Spring applications of nitrogen fertilizer (especially nitrate N), accumulation of thatch, and frequent light irrigation or rainfall. Low mowing is the cultural factor that contributes most to severe disease. Scalping lawns by mowing low after allowing the turf to grow tall can trigger the appearance of the disease.

Chemical control of summer patch is expensive and not always effective. The most efficient way to fight any plant disease is by planting of resistant species or cultivars. As noted previously, Kentucky bluegrass, creeping red fescue, and hard fescue are most susceptible to summer patch. Other lawn grasses, such as tall fescue and zoysiagrass are resistant and may be immune to the disease.

Many Kentucky bluegrass cultivars used in the past were very susceptible to summer patch, especially 'Merion', 'Windsor' and 'Fylking.' Newer, recommended cultivars generally have improved resistance, but are not immune to summer patch. Refer to 'TT-77: Recommended Turfgrass Cultivars' for a list of top-performing cultivars in Maryland.

Even disease-resistant cultivars of Kentucky bluegrass may become susceptible to the disease during hot and wet summers, especially when turf is mowed below 2.0 inches. All cultivars of creeping red fescue appear to be susceptible to summer patch. Cultural and chemical approaches to summer patch control are as follows:

Ten Cultural Approaches to Disease Control

1. Increase mowing height to 2.5" or higher, especially for creeping red and hard fescue.
2. Avoid light, frequent applications of water.
3. Irrigate when turf shows 1st signs of drought stress.
4. Apply water to wet the soil at least 3" deep.
5. Avoid heavy nitrogen fertility, especially in the spring.

6. Use slow release sources of nitrogen fertilizer such as sulfur coated urea.
7. Avoid nitrate forms of nitrogen such as potassium nitrate, calcium nitrate and sodium nitrate.
8. Apply 75% or more of the total annual amount of nitrogen fertilizer per year during autumn months.
9. Reduce thatch when the layer is over ½ inches thick.
10. Core aerate compacted soils in the fall, and if necessary, repeat core aeration in the spring.

Fungicides for Disease Control

Banner MAXX, Bayleton and Heritage are among the more effective fungicides used for preventive control of summer patch. The initial, preventive fungicide application be made in mid-June in Maryland, followed by a second application in 21 to 28 days.

The normal use rate of Banner MAXX™ and Bayleton™ is 4.0 oz of product per 1000 ft². Heritage™ is applied at 0.4 oz per 1000 ft². Although lower rates may not provide effective control, higher rates often do not significantly improve disease. Additional fungicide applications may be required on an as needed basis.

These fungicides should be applied in at least 2.5 gallons of water (preferably 5 gallons) per 1000 ft². Curative applications of fungicides are often erratic and generally provide poor control once large numbers of patches become evident.

It is important to note that the fungicide effectiveness will be negated if turf enters drought dormancy. Lack of preventive control of summer patch with Bayleton™ is a clue that the disease problem may be necrotic ring spot. Necrotic ring spot has been controlled with Rubigan™, Banner MAXX™, and Fungo 50™, but not Bayleton™.

When large areas have been severely damaged because of disease, it is best to overseed the areas with resistant cultivars in September.

For information about fungicide application rates and timing, please refer to TT-38: Maryland Turfgrass Disease Control Recommendations, available at www.mdturfcouncil.org.

Educating People to Help Themselves Local Governments • U.S. Department of Agriculture Cooperating

The University of Maryland is equal opportunity. The University's policies, programs and activities are in conformance with pertinent Federal and State laws and regulations on nondiscrimination regarding race, color, religion, age, national origin, sex, and disability. Inquiries regarding compliance with Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Educational Amendments; Section 504 of the Rehabilitation Act of 1973; and the Americans With Disabilities Act of 1990; or related legal requirements should be directed to the Director of Personnel/Human Relations, College of Agriculture and Natural Resources, Symons Hall, College Park, MD 20742.