



Rhizoctonia Brown Patch

Pest Fact Sheet 44

Dr. Cheryl A. Smith, Extension Professor/Specialist, Plant Health

UNH Cooperative Extension Programs

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Introduction

Rhizoctonia brown patch is a common fungal disease of all turf grasses. Symptoms vary depending upon the grass species and mowing height. In general, brown patch is characterized by roughly circular areas of brown grass ranging from a few inches to two feet or more in diameter.

Description

On close-cut grass, such as golf greens, *Rhizoctonia* brown patch appears as light brown irregularly shaped areas ranging from a few inches up to two feet in diameter. The color of these patches appears first as a purplish-green that fades rapidly to light brown as the leaves dry out.

On taller turf (e.g., on home lawns, park lawns, and golf course fairways), diseased areas range from six inches to two or more feet in diameter. These patches of light brown grass are more or less circular in outline. Grass in the center of the patch may be unaffected or recover more quickly than grass near the perimeter, creating a “frog-eye”, or ring-shaped appearance.

The chief distinguishing feature of *Rhizoctonia* brown patch appears during periods of warm, humid weather, when dark, purplish “smoke rings” half an inch to two inches wide may border the diseased areas. The “smoke rings” are more pronounced in the early morning, usually fading by the middle of the day. “Smoke rings” are more commonly seen on close-cut grass.

Disease Cycle

The causal fungus survives from year to year in the form of resting structures within infected grass tissue, plant debris, or in the soil. The fungus is also capable of living in the soil for long periods in the absence of susceptible grass.

Large areas of turf can rapidly become blighted in hot, humid, or rainy weather. Severe damage can occur when leaf surfaces are wet,



Brown patch symptoms on perennial ryegrass (top) and tall fescue (bottom). Credit: P. H. Dernoeden; Reproduced, by permission, from R.W. Smiley, P.H. Dernoeden, and B.B. Clarke. 2005. Compendium of Turfgrass Diseases, 3rd ed. American Phytopathological Society, St. Paul, MN.



Brown patch symptoms on bluegrass golf tee. Credit: B. B. Clarke; Reproduced, by permission, from R.W. Smiley, P.H. Dernoeden, and B.B. Clarke. 2005. Compendium of Turfgrass Diseases, 3rd ed. American Phytopathological Society, St. Paul, MN.

or humidity is above 95% and night temperatures are above 68°F. Under these conditions, the fungus may completely blight a large area of turf within a period of six to eight hours. In addition to ideal temperatures and humid weather, poorly drained soils, thick thatch, and heavy applications of nitrogen fertilizer favor disease development.

Management

IPM Strategies:

- Cultural Practices — Avoid excessive nitrogen fertilizers, especially during warm wet weather. Slow-release nitrogen formulations are less likely to favor disease development. Do not mow wet turf. Irrigate early in the day. Remove thatch if thicker than one inch. Moderately resistant cultivars of perennial ryegrass, Kentucky bluegrass, and tall fescue are available.
- Chemical Control — There are many fungicides labeled for managing brown patch. Preventative applications should be applied to golf course turf when environmental conditions are favorable for infection. Consult your county Extension Educator or State Specialist for specific recommendations about pesticides.

Summary

Table 1 summarizes key information on *Rhizoctonia* brown patch.

Table 1: Summary

Summary Table	
Causal Agent	Fungus
Major Symptoms	Circular brown patches sometimes bordered by dark “smoke rings”
Time of First Noticeable Symptoms	Mid- to late-summer, especially following hot, humid weather conditions with prolonged minimum night temperatures above 65°F
Plant Parts Attacked	Leaf tissue
Cultural Control	Avoid high nitrogen fertility Do not mow wet turf Water early in the day Remove thatch if thicker than one inch
Chemical Control	Preventive fungicide sprays

Notes: Refer to the text for more information about this pest.

Stop! Read the label on every pesticide container each time before using the material. Pesticides must be applied only as directed on the label to be in compliance with the law. Contact the Division of Pesticide Control at (603) 271-3550 to check registration status. Dispose of empty containers safely, according to New Hampshire regulations.

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Previous contributing author to this fact sheet: William E. McHardy, Extension Specialist Emeritus, Plant Pathology

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About the Author

Dr. Cheryl A. Smith is an Extension Specialist in Plant Health and a professor at the University of New Hampshire.

For More Information

State Office

Taylor Hall
59 College Rd.
Durham, NH 03824
<http://extension.unh.edu>

Education Center and Information Line

answers@unh.edu
1-877-EXT-GROW
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