



# Brown Patch

O & T Guide TD-6

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**Causal Agent and Hosts:** Brown patch, caused by the soil-inhabiting fungus, *Rhizoctonia solani*, is one of the most common turf diseases in New Mexico. All turfgrass species are susceptible to brown patch.

**Symptoms:** Although the symptoms are highly variable, depending on turf species, mowing height, soil and environmental conditions, the disease is generally characterized by small to large circles or irregularly shaped patches of brown, dead and dying grass. Centers of the spots may recover, resulting in rings of diseased grass. In some cases, no patches or circles are apparent and the disease appears as a diffuse yellow blight. The disease may produce blighted patches with a purplish – gray border (“smoke-rings”) on closely mowed, cool-season grasses. Leaves of individual plants may have small to large, irregularly shaped, tan lesions with a noticeable dark brown margin. Infected leaves become chlorotic to olive-green in color and wilt, eventually turning brown as they die. When dew is present on the grass, white, cobwebby mycelium of the fungus can sometimes be seen on the surface of affected grass plants. Stems, crowns, and roots also may be infected. In light attacks, roots and crowns usually are not involved, and plants recover. Dark brown resting structures (sclerotia) composed of hard masses of fungal mycelium may develop at the base of infected plants.



Brown patch on a bentgrass putting green. Photo: B. B. Clarke, Rutgers University



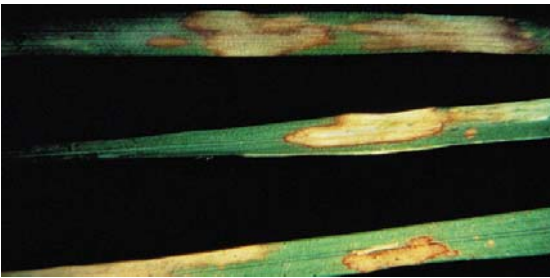
Brown patch on fescue. Photo: B. G., Joyner.



Diffuse damage caused by brown patch. Photo: R. W. Smiley, Oregon State University.



Smoke-rings caused by *Rhizoctonia solani*. Photo: N. Jackson, University of Rhode Island.



Leaf lesions caused by *Rhizoctonia solani*. Photo: B. G. Joyner.



Mycelium of *Rhizoctonia solani* on infected grass. Photo: APS.



Sclerotia of *Rhizoctonia solani* on the base of turfgrass plants. Photo: APS.

**Conditions for Disease:** The fungus survives in soil, in infected plants and plant debris as mycelium and sclerotia. It is spread by leaf to leaf contact and by movement of infected plant material by equipment, people, animals, water and wind.

The disease occurs from spring through fall and is favored by warm (70-90°F), wet conditions. Periods of wet or humid conditions especially with high night temperatures (above 68°F) favor rapid disease development. A cold, wet-weather (40°-60° F) form of the disease occurs infrequently. Dense, highly fertilized (excessive nitrogen), frequently watered grass is more susceptible to the disease. Poorly drained soils, excessive thatch, and night irrigation lengthen the period of leaf wetness and promote infection.

**Management:** Cultural practices which help to reduce the occurrence and severity of the disease include:

- Reduce shading.
- Aerate soil to reduce thatch and improve water drainage.
- Maintain appropriate fertility levels.
- Avoid heavy nitrogen applications.
- Follow proper irrigation practices.
- Avoid watering at night.
- Avoid light, frequent watering.
- Maintain turf at the tallest height recommended for the grass species.
- Fungicides are more effective when used preventively, but will also help to stop the disease infection.