

INTEGRATED PEST MANAGEMENT FOR TURF

Publication 845





Figure 5-24. Brown patch causing visible brown discoloration.

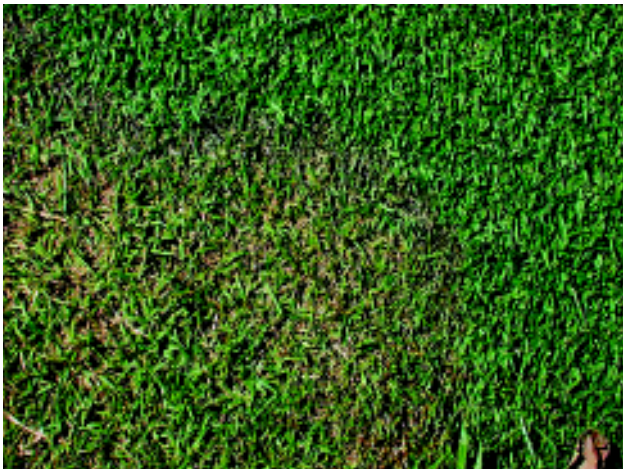


Figure 5-25. Brown patch on creeping bentgrass with a purple smoke ring at patch margin. (Photo: Dr. Tom Hsiang, University of Guelph)

Disease Cycle: The fungus survives in soil or thatch as sclerotia or mycelium. The overwintering fungus begins to develop when air temperatures are 15°C up to low 30s°C. Wet foliage is needed for disease development.

Management: Reduce shade and increase air circulation. Reduce nitrogen levels during summer. Maintain soil pH greater than 7. Avoid night watering. Brown patch occurs under similar environmental conditions as Pythium blight but there is more recovery from brown patch.

Anthracnose foliar blight

Pathogen: *Colletotrichum cereale* (formerly called *Colletotrichum graminicola*).

Hosts: Annual bluegrass is the most severely affected turfgrass species and it can be killed in the summer by this disease. Kentucky bluegrass, red fescue and other turfgrasses are also susceptible and may show some lesions, but generally they are not killed by this disease.

Symptoms: Infection and discoloration can occur in cool weather, but serious damage follows high temperature and humidity and stressful conditions. Discoloration is first observed in patches from a few centimetres to a few metres in diameter on annual bluegrass. Widespread mottling can occur with creeping bentgrass unaffected while annual bluegrass turns yellow (Figure 5-26, on this page).

Small yellow lesions develop on leaves. The lesions have black centres and leaves turn brown.

Black spore-producing acervuli erupt from stomates on dead tissues (Figure 5-27, on page 76).

Eyelash-like black spore-producing structures of the anthracnose fungus, called acervuli, are visible on dead and dying tissue.



Figure 5-26. Anthracnose killing annual bluegrass during hot humid weather (Pythium blight streaks in the background). (Photo: Pest Diagnostic Clinic, University of Guelph)

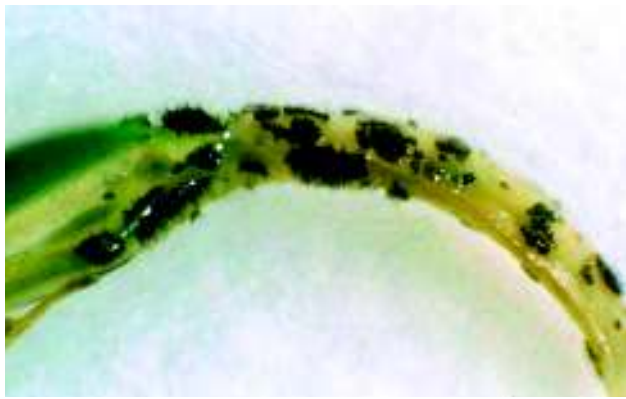


Figure 5-27. Eyelash-like black spore-producing structures of the anthracnose fungus, called acervuli, visible on dead and dying tissue. (Photo: Dr. Tom Hsiang, University of Guelph)

Disease Cycle: Anthracnose overwinters in diseased or dead tissues as mycelium and spores. Spores are produced throughout the growing season. Symptoms develop with temperatures greater than 25°C and high relative humidity. On dead tissue, spores are produced and then splashed and windblown to other plants. Symptoms can develop very quickly, and a sward can be completely blighted in two days.

Management: Syringe turf at 10 a.m. and 2 p.m. on days when temperatures exceed upper 20s°C. Use a balanced fertilization regime. Don't irrigate in the evening. Avoid turf stress, drought or nitrogen deficiency. Control thatch by core aeration. Alleviate and avoid soil compaction. Mow with light weight mowers. Annual bluegrass may be weak in the summer because of stress and anthracnose becomes the secondary killer.

Anthracnose basal rot

Pathogen: *Colletotrichum cereale*.

Hosts: Anthracnose basal rot is most severe on creeping bentgrass and is less of a problem on annual bluegrass.

Symptoms: Anthracnose basal rot is characterized by widespread yellowing and thinning out of creeping bentgrass turf (Figure 5-28, on this page). Roots and crowns become rotted and pull out easily. It is a common disease after stress periods, including cultural operations such as coring and verticutting.



Figure 5-28. Anthracnose basal rot in the cool, wet season attacking mostly creeping bentgrass.

Disease Cycle: The disease overwinters in diseased or dead tissues as mycelium and spores. Spores are produced throughout the growing season. Symptoms develop during prolonged wet periods, whether cool or warm. On dead tissue, spores are produced and then spread by splashing water or wind.

Management: Reduce compaction and minimize thatch and root zone wetness periods. Water in fungicides.

Pythium blight (also known as cottony blight)

Pathogen: Species of *Pythium* which are not true fungi, but are more closely related to algae.

Hosts: Creeping bentgrass, annual bluegrass and perennial ryegrass are the most susceptible hosts.

Symptoms: Early symptoms are similar to dollar spot (especially in the afternoon), with small spots about 5 cm in diameter. The spots are darker, with a water-soaked look and continue to increase in size. During wet periods, such as the early morning, water-soaked leaves collapse and become matted together by a fluffy mass of white mycelium. As the grass dries, the mycelium disappears and the dead blades turn yellow and brown. This disease occurs in patches (Figure 5-29, on page 77).

Killed areas often appear as elongated streaks due to spread of spores and mycelium on mowing equipment or in surface water along drainage slopes (Figure 5-30, on page 77). Crowns may be killed