

## Brown Patch<sup>1</sup>

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**Other Names:** Large patch or Rhizoctonia blight

**Pathogen:** *Rhizoctonia solani*

**Turfgrasses Affected:** All warm-season turfgrasses, especially St. Augustinegrass and zoysiagrass.

**Occurrence:** This disease is most likely to be observed from November through May when temperatures are below 80°F. It is normally *not* observed in the summer. Infection is triggered by rainfall, excessive irrigation, or extended periods of high humidity resulting in the leaves being continuously wet for 48 hours or more.

**Symptoms/Signs:** The fungus infects the leaf area closest to the soil, eventually killing the leaf. A soft, dark rot occurs at the base of the leaf, and leaves can easily be pulled off the stem (Figure 1). The base of a pulled leaf has a rotted odor. Roots are not affected by this pathogen.

This disease usually begins as small patches (about 1 ft in diameter) that turn yellow and then reddish brown, brown, or straw colored as the leaves start to die. Patches can expand to several feet in diameter (Figure 2). It is not uncommon to see rings of yellow or brown turf with apparently healthy turf

in the center. Turf at the outer margin of a patch may appear dark and wilted (Figure 3). This disease is often confused with herbicide damage on St. Augustinegrass.

Herbicide damage may cause the same overall symptoms of yellow or brown patches. The leaf may still pull out of the leaf sheath, but the base of the leaf is not dark and rotted (Figure 4). Instead, the leaf base is dry with a tan discoloration, and there is no distinct smell of rot.

**Cultural Controls:** Avoid excess nitrogen during potential disease development periods. Limit readily available forms of nitrogen, such as soluble liquids or quick-release nitrogen sources, just prior to or during these periods. Instead, use slow-release nitrogen sources. Apply a balanced fertilizer containing equivalent amounts of potassium and nitrogen, preferably a slow-release potassium form.

Irrigate only when necessary and do so only in the early morning hours (between 2:00 and 8:00 a.m.) when dew is already present. Since mowers can spread this disease, mow diseased areas last, and wash turf clippings off the mower before proceeding to the next site.

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**Figure 1.** Base of leaf is rotted due to brown patch.

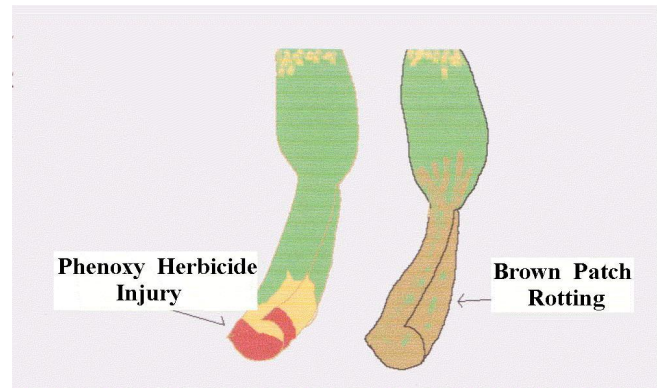


**Figure 2.** Brown patch symptoms on St. Augustine grass. Credits: M. L. Elliott



**Figure 3.** Brown patch symptoms on zoysiagrass. Note that the outer edge is a darker color indicating the fungus is active at this point. Credits: G. W. Simone

**Chemical Controls:** Azoxystrobin, chlorothalonil, fenarimol, fludioxonil, flutolanil, iprodione, Junction<sup>®</sup>, mancozeb, metconazole, myclobutanil, polyoxin D, propiconazole,



**Figure 4.** Comparison of phenoxy herbicide damage (left) and basal leaf rot due to brown patch (right). Credits: T. Johnston

pyraclostrobin, thiophanate-methyl, thiram, triadimefon, trifloxystrobin, triticonazole, and vinclozolin

For a homeowner's guide to turfgrass fungicides, see [http://edis.ifas.ufl.edu/document\\_pp154](http://edis.ifas.ufl.edu/document_pp154). Check fungicide labels for site application restrictions as some fungicides cannot be used on residential lawns. DMI (demethylation-inhibiting) fungicides have shown the potential to damage bermudagrass turf. Follow label directions and restrictions for all pesticides. The presence of a fungicide on this list does not constitute a recommendation.

Please note that for the diseased turfgrass to recover, it must be actively growing. Symptoms do not disappear until new leaves develop and the old leaves are removed by mowing or decomposition. Since this disease normally occurs when the turfgrass is not growing very rapidly, recovery may be very slow. The fungicides simply stop the disease from spreading—they do not promote turfgrass growth. This is why it may be beneficial to apply these fungicides prior to disease development, but only if this disease has been a routine problem in the landscape. Always incorporate cultural control measures into the disease management program.

**Additional Information:** There are two other *Rhizoctonia* species that are pathogens of turfgrass. They are *R. zaeae* and *R. oryzae*. These pathogens are not very common. The disease these fungi cause is called *Rhizoctonia* leaf and sheath spot. It occurs during the summer when the temperatures are above 80°F. While overall symptoms may look like brown

patch, the leaf symptoms are different. These pathogens do not cause a basal leaf rot, but rather cause a leaf spot that expands into a leaf blight. The entire leaf turns yellow or reddish-yellow and then brown, and it does not pull off the stem. The roots are not affected. This disease must be confirmed by a plant disease clinic prior to any control efforts as the controls are very different from brown patch.

**Refer to the "Turfgrass Disease Management" section of the *Florida Lawn Handbook* (<http://edis.ifas.ufl.edu/lh040>) for explanations of cultural and chemical controls.**