

## Brown Patch & Large Patch Diseases of Lawns

### Introduction

The beauty of a lawn can be quickly destroyed by brown patch or large patch, which are serious fungal diseases (each caused by different strains of *Rhizoctonia solani*) that can affect all South Carolina lawn grasses. Disease can develop rapidly when daytime temperatures are warm (75 to 90 °F) and humid, nighttime temperatures are above 60 °F, and there is an extended period of leaf wetness. Generally symptoms of brown patch begin on cool-season grasses (tall fescue, ryegrass, bluegrass and bentgrass) during the late spring. It may also occur on these grasses during warmer periods of the winter months. Warm-season grasses (St. Augustinegrass, zoysiagrass, Bermudagrass and centipedegrass) most commonly are affected by large patch (formerly also known as brown patch) during the early spring and late fall.

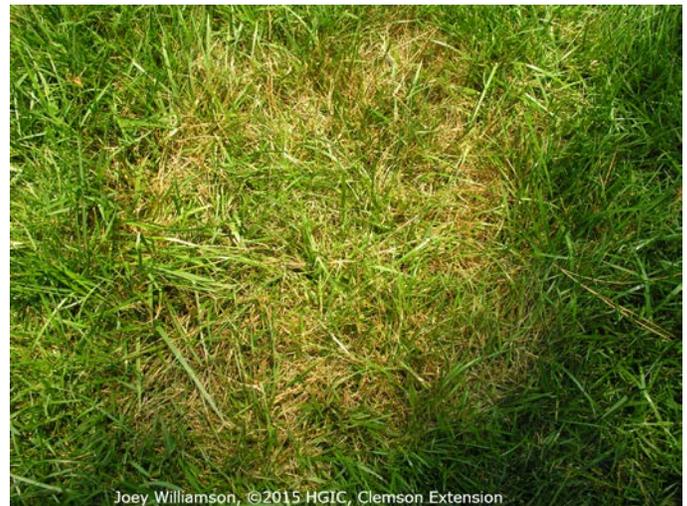
### Symptoms

Symptoms of brown and large patch diseases may vary greatly with the type of grass and soil conditions. The diseases usually cause thinned patches of light brown grass that are roughly circular in shape. These areas range in diameter from a few inches to several feet. Often the center of the patch will recover, resulting in a doughnut-shaped pattern.

When disease conditions are favorable, large areas of the lawn may be uniformly thinned and eventually killed with no circular patch being evident. This type of pattern is commonly seen on infected St. Augustinegrass grown in shady, moist locations.

Close inspection of cool-season grass blades reveals small, irregular, tan leaf spots with dark-brown

borders. Bentgrass may not show individual lesions, but leaves will turn brown and shrivel. Infected warm-season grasses rarely have leaf spots but instead have rotted leaf sheaths near the soil surface.



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Brown patch on turfgrass tall fescue lawn.  
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### Grasses Commonly Affected

All types of warm-season or cool-season lawn grasses grown in South Carolina can be affected by large patch or brown patch, respectively. There are no turfgrass species entirely resistant to these diseases currently available. Brown patch is the most common and important disease of tall fescue in the Southeast. In most cases affected areas are able to recover, but tall fescue lawns less than a year old can be completely killed. Ky-31 fescue has more resistance to brown patch than all turfgrass tall fescue cultivars. Large patch is the most common disease affecting centipedegrass.

## Prevention & Treatment

The best way to prevent brown patch or large patch in the home lawn is by following good lawn care practices. This is much easier and less expensive than the use of fungicides and can be very effective.

- Avoid high rates of nitrogen fertilizer on cool-season grasses in the late spring and summer. Avoid high nitrogen rates on warm-season grasses in mid to late fall or in early spring. The disease-causing fungus readily attacks the lush growth of grass which nitrogen promotes. Avoid fast-release forms of nitrogen fertilizer.
- Irrigate grass only when needed and to a depth of 4 to 6 inches (generally 1 inch of irrigation water per week), but do not subject the lawn to drought conditions. Water early in the morning. This disease can spread fast when free moisture is present, especially greater than 10 hours.
- Avoid spreading the disease to other areas. Remove clippings if the weather is warm and moist to prevent spread to other areas during mowing.
- Keep lawns mowed on a regular basis to the proper height for the grass species you are growing. Lower than optimum mowing height can increase disease severity. Do not mow fescue lawns shorter than 2-1/2 inches high, nor higher than 3-1/2 inches. Mow centipede at 1-1/2 inches high.
- Provide good drainage for both surface and subsurface areas. Correct soil compaction by core aeration. Prevent excessive thatch buildup.
- Have the soil tested and apply lime according to test recommendations. Disease may be more severe if the soil pH is less than 6.0.

Fungicides can be difficult to rely upon for controlling brown patch and large patch in the home lawn, but regular applications can vastly improve appearance. A good "rule of thumb" to follow on either cool- or warm-season grasses is to initiate fungicide sprays when nighttime low temperatures reach 60 °F. Stop applications when nighttime lows are forecast to be below 60 °F for five consecutive days. Typically, applications are made at 14- to 28-day intervals, depending upon the fungicide. If disease is severe enough to warrant chemical control, select one of the following fungicides listed in Table 1.

It will help in disease control to alternate fungicides used with subsequent applications to prevent a buildup of resistance to a fungicide. Slightly better control may be obtained by a liquid fungicide application rather than by granular application of the same fungicide active ingredient. Granular fungicides must be irrigated after application (follow label directions).

Preventatively, fungicides should be applied to turfgrass fescue in the late spring or early summer. Frequently brown patch becomes obvious around the first week of May in the Upstate.

Warm season turfgrasses require fungicide treatments in the spring, but especially in the fall for best disease control. Start applications around October 1<sup>st</sup> for the fall and late April for the late spring applications.

**Table 1. Fungicides for Control of Brown Patch & Large Patch on Home Lawns.**

| Fungicides   | Examples of Brands   | Form of Product   | Effectiveness of Fungicide     |
|--|--|---|--------------------------------|
| <b>Azoxystrobin<sup>1</sup></b>  | Heritage G   | Granules 0.31%  | BP: Excellent<br>LP: Good      |
| <b>Azoxystrobin (with Propiconazole)</b>   | Headway G  | Granules 0.31% (with 0.75% propiconazole)   | BP: Excellent<br>LP: Excellent |
| <b>Pyraclostrobin (with Triticonazole)</b>   | Pillar G Intrinsic Fungicide   | Granules 0.38% (with 0.43% triticonazole)   | BP: Excellent<br>LP: Excellent |
| <b>Fluoxastrobin</b>   | Disarm 0.25  | Granules 0.25%  | BP: Excellent<br>LP: Excellent |
| <b>Propiconazole</b>   | Bayer Advanced Fungus Control for Lawns Ready to Spread<br>Spectracide Immunox Fungus Plus Insect Control for Lawns RTS <sup>2</sup><br>Ferti-lome Liquid Systemic Fungicide II RTS <sup>2</sup><br>Bonide Infuse Systemic Disease Control Lawn & Landscape RTS <sup>2</sup> (but <u>not</u> the granular version)<br>Bayer Advanced Fungus Control for Lawns RTS <sup>2</sup> | Granules 0.51%<br>RTS <sup>2</sup> 1.45% (with cyhalothrin 0.08%)<br>RTS <sup>2</sup> 1.55%<br>RTS <sup>2</sup> 1.55%<br>RTS <sup>2</sup> 2.42% | BP: Fair<br>LG: Good           |
| <b>Triadimefon</b>   | Lebanon Turf Fungicide contains 1% Bayleton  | Granules 1.00%  | BP: Fair<br>LP: Good           |
| <b>Myclobutanil</b>  | Ferti-lome F-Stop Lawn Fungicide<br>Lebanon Eagle 0.62G Specialty Fungicide<br>Lesco Eagle 0.39% Granular Turf Fungicide<br>Ferti-lome F-Stop Lawn & Garden Fungicide<br>Monterey Lawn Fungicide RTS <sup>2</sup>  | Granules 0.39%<br>Granules 0.62%<br>Granules 0.39%<br>RTS <sup>2</sup> 2.00%  | BP: Poor<br>LP: Fair           |
| <p><sup>1</sup> Resistance to the fungicide by the brown and large patch fungi will develop from continued exclusive use of azoxystrobin (alone). Always alternate this fungicide with one of the others. Alternatively, choose a product, such as Headway G or Pillar G, each of which contain 2 active ingredients. These can be used in repeated applications against brown or large patch without an increase in resistance to the fungicide treatment. Follow directions on product label for use. In general, azoxystrobin or pyraclostrobin will control brown and large patch for 28 days. The other three fungicides will control the diseases for 14 days. Irrigate according to label directions after application of granular products. G = a granular product.</p> <p><sup>2</sup> RTS = Ready to Spray (a hose-end sprayer)<br/>BP = Brown patch; LP = Large Patch<br/>Landscape professionals should consult the <a href="#">2017 Pest Control Guidelines for Professional Turfgrass Managers</a> for additional recommendations.</p> |  |   |                                |

Pesticides updated by Joey Williamson, HGIC Horticulture Extension Agent, Clemson University, 02/17. Revised by Joey Williamson, HGIC Horticulture Extension Agent, Clemson University, 04/15. Originally prepared by Nancy Doubrava, HGIC Information Specialist, and James H. Blake, Extension Plant Pathologist, Clemson University. 06/99.

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