

# TURFGRASS RESEARCH 2016



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## Preventative Control of Brown Patch with Select Fungicides

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**Summary.** Preventative applications of Velistra and Heritage Action fungicides will decrease the percentage of brown patch observed in a perennial stand of tall fescue.

**Rationale.** Tall fescue [*Lolium arundinacea*] is one of the most predominantly used cool-season turfgrass species in the transition zone. Its deep root system and coarse textured leaves lend to its ability to withstand drought, heat, and wear stress. Although it is well adapted to survive the summer months in Kansas, it can be susceptible to injury from disease. Brown patch [*Rhizoctonia solani*] is a disease that can damage leaf tissue, shoots, and the crown of tall fescue during the summer months. This disease is most prevalent during periods of high humidity, high temperature (above 80 °F), and high nitrogen levels. During the mornings mycelia can be seen forming a “smoke ring” around the affected area. Applications of preventative fungicides have proven to be a successful management strategy in reducing the occurrence of brown patch incidences in tall fescue stands. With new fungicide formulations coming out every year, testing is needed to demonstrate the efficacy of these fungicides in reducing potential injury from disease.

**Objectives.** Evaluate Heritage Action and Velistra for preventative control of brown patch in a perennial stand of tall fescue.

**Study Description.** A field study was initiated June 18, 2015 at the Kansas State University Olathe Horticultural Research Center in Olathe, KS on turf-type tall fescue maintained at 3 inches. The study was conducted as a randomized complete-block design, with three replications. Fungicides applied during this study were Heritage Action (Azoxystrobin and Acibenzolar-S-methyl) and Velistra (Penthiopyrad). Field study consisted of: an untreated control, Velistra applied at 0.3 and 0.5

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oz/1,000 ft<sup>2</sup>, and Heritage Action applied at 0.2 oz/1,000 ft<sup>2</sup>. Visual percent brown patch incidence was rated on a 0 to 100% scale every three weeks beginning at trial initiation. Means were separated according to Fisher's Protected LSD test when  $P \leq 0.05$ .

**Results.** All applications of the preventative fungicides resulted in minimal observations of brown patch. Six weeks after treatment application (WAT) Velista applied at 0.3 oz/1,000 ft<sup>2</sup> and 0.5 oz/1,000 ft<sup>2</sup> and Heritage Action resulted in 5%, 7%, and 0% brown patch incidence, respectively, when compared to an untreated control (43% brown patch incidence) (Table 1). Heritage Action performed best during this study with brown patch only being observed 9 WAT (0.3%). From this research, to decrease the chances of a brown patch incidence, it is recommended to apply a preventative fungicide before conditions are favorable for this disease. Repeat applications may be needed to ensure seasonal coverage.

**Table 1. Percent brown patch incidence on tall fescue with the application of preventative fungicides**

Treatment	% Brown patch incidence†			
	0 WAT‡	3 WAT	6 WAT	9 WAT
Control	0	0	43.3 a§	13.7
Velista 0.3 oz/1,000 ft <sup>2</sup>	0	0	5.0 b	14.3
Velista 0.5 oz/1,000 ft <sup>2</sup>	0	0	6.7 b	5.3
Heritage Action 0.2 oz/1,000 ft <sup>2</sup>	0	0	0.0 b	0.3

† Percent brown patch incidence was visually rated on a 0-100% scale where 0% = no brown patch observed and 100% = plot completely affected by brown patch.

‡ Indicates weeks after treatment application.

§ Means in a column followed by the same letter are not significantly different according to Fisher's protected LSD test, ( $P \leq 0.05$ ).

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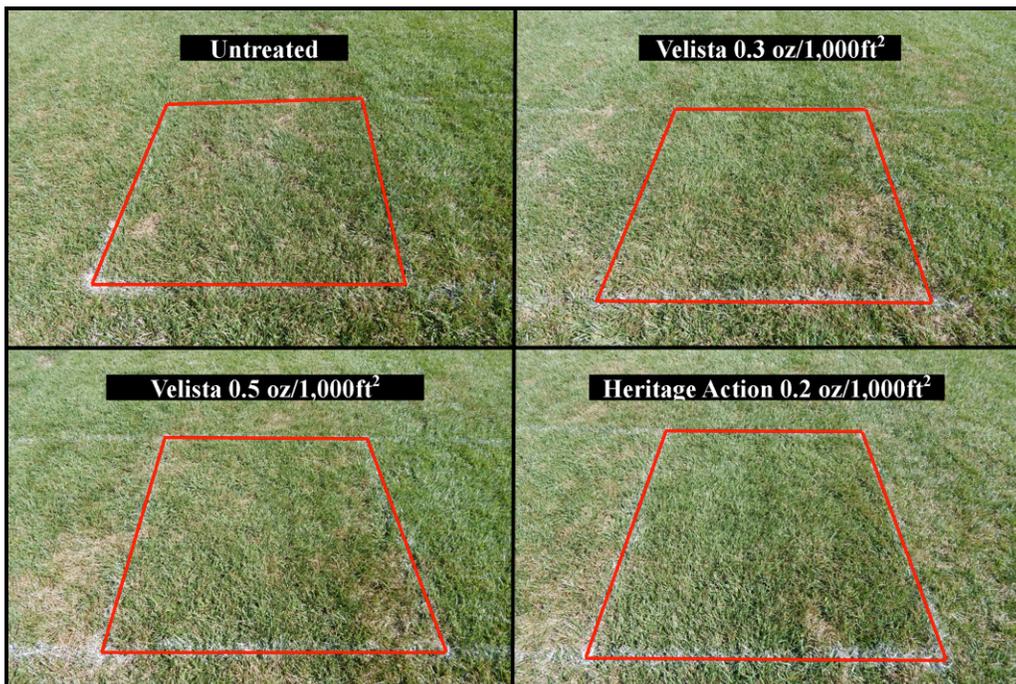


Figure 1. Digital images of research plots 9 WAT, see Table 1 for the mean percent brown patch cover for each corresponding treatment.

