

CREEPING BENTGRASS (*Agrostis stolonifera* 'Penncross')
Dollar spot; *Sclerotinia homoeocarpa*
Brown patch; *Rhizoctonia solani*
Blue-green algae; *Prokaryotic cyanobacteria*

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Evaluation of multiple fungicides for summer disease control on greens height creeping bentgrass, 2014.

Fungicides were evaluated for disease control at the University of Missouri Turfgrass Research Facility in Columbia, MO on a 'Penncross' creeping bentgrass green. The green contained a 12-in sand root zone over a drained subgrade. Mowing was performed at a height of 0.13-in., three and five times weekly from 2 Apr to 7 Jun and 7 Jun to 19 Sep, respectively. Nitrogen was applied at 0.20 lb N/1000 sq ft on 18 Apr. and every 3 wks at 0.39 lb N/1000 sq ft thereafter from 16 May to 29 Aug. Revolution® (6.0 fl oz/1000 sq ft) was applied every 28-d starting on 16 May. Plots were 5 × 5 ft and arranged in a randomized complete block design with four replications. Treatments were applied in water equivalent to 2 gal/1000 sq ft with a CO₂-powered sprayer at 26 psi using TeeJet 8008 flat fan nozzles. Preventative fungicide applications were applied on 14 d intervals from 8 May – 31 Jul. On 23 May, rye grain (*Secale cereale* L.) infested with the dollar spot pathogen was uniformly applied at a volume of 1.52-in.³ per plot using a small broadcast spreader and left on the turf surface for 3 days before mowing. Disease severity and turfgrass quality were assessed every 14-d from initial symptom development. Brown patch was assessed as a visual estimate of the percent symptomatic area and dollar spot was quantified as counts of infection centers per plot. Turfgrass quality was evaluated using a 1 to 9 scale (9=best, 5=acceptable) based on color, density, and uniformity. Phytotoxicity was evaluated using a 0 to 9 scale with 0 = none, ≥ 2 = unacceptable discoloration, and 9 = total plot necrosis. Data were subjected to analysis of variance and means separation using Fisher's Protected LSD test ($P=0.05$). To stabilize variance, disease severity and turf quality data were square-root transformed for analysis and back-transformed for presentation.

Dollar spot was first observed on 22 May. From 19 Jun - 14 Aug, all treated plots had significantly less dollar spot severity than the untreated control. During that same time period, all treated plots had significantly less dollar spot infection centers per plot than plots treated with Daconil Action and Chipco Signature. Chipco Signature provided the least amount of dollar spot control among the treatments tested. By 11 Sept, 6 weeks following final application (WFFA), residual dollar spot control (< 15.3 infection centers per plot) was still noted in plots treated with the high rate of Lexicon Intrinsic and Headway. Brown patch was first observed on 19 Jun. From 17 Jul – 14 Aug, all treated plots had significantly less brown patch severity than untreated control plots, except Chipco Signature. On 11 Sept, plots treated with Lexicon Intrinsic (both rates) had significantly less brown patch severity compared to plots treated with Daconil Action, Chipco Signature, Velista, and Secure. Blue-green algae was observed on 2 rating dates following multiple rainfall events in late summer. On 28 Aug, all treated plots had statistically less blue-green algae incidence than the untreated control. On 11 Sep (6 WFFA), algae incidence increased quickly, and was significantly higher in plots treated with the high rate of Lexicon Intrinsic (both rates), Headway, and Briskway than plots treated with Secure or Daconil Action. From 19 Jun – 28 Aug, turf quality was significantly higher in treated plots compared to the untreated control. On 28 Aug (4 WFFA), plots treated with the high rate of Lexicon had significantly higher turf quality than other treatments due to lower disease incidence. By 11 Sep, unacceptable turf quality was noted in all plots. From 19 Jun – 28 Aug, significant turf phytotoxicity (bronzing /discoloration) was observed in plots treated with Headway.