CREEPING BENTGRASS (*Agrostis stolonifera* 'Penncross')
Dollar spot; *Sclerotinia homoeocarpa*
Brown patch; *Rhizoctonia solani* AG2-2 IIIB

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Evaluation of fungicides for dollar spot and brown patch control on a creeping bentgrass putting green, 2015.

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 30 Apr and 1 May to 18 Sep, respectively. Nitrogen was applied at 0.375 lb N/1000 sq ft on 17 Apr. and every 3 wks at 0.39 lb N/1000 sq ft thereafter from 1 May to 18 Sep. Revolution® (6.0 fl oz/1000 sq ft) was applied every 28-d starting on 1 May. Plots were 5 ft × 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 CO_2-powered sprayer at 28 psi using TeeJet 8008 flat fan nozzles. Dollar spot symptoms occurred in the trial area in early April before the trial was initiated. Therefore, Daconil Ultrex (3.25 oz/1000 sq ft) was applied on 17 Apr, and reapplied at a higher rate (5.0 oz/1000 sq ft) on 23 Apr and 1 May. On 22 May, rye grain (*Secale cereale* L.) infested with the brown patch pathogen was uniformly applied at a volume of 1.52-in.^{3} per plot using a small broadcast spreader across each plot. A clear 10 fl oz plastic cup was randomly placed over 6 to 10 rye grains within each plot, and left on the turf for 3 days to encourage pathogen infection. 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, 6=acceptable) based on color, density, and uniformity. Data were subjected to analysis of variance and means separation using Fisher's Protected LSD test (P=0.05).

Fungicide treatments were applied on 14- or 21-d intervals from 19 May to 30 Jun (3 to 4 applications) or from 19 May to 28 Jul (6 applications). Dollar spot symptoms were first observed in the trial area (≤0.5% severity) on 19 May. From 17 Jun to 25 Aug, dollar spot severity was significantly lower in all treated plots than the untreated control. Among tested treatments, no significant differences in dollar spot counts per plot were noted until 11 Aug. On 11 Aug, plots treated with Interface Stressgard (4 apps) had a significantly greater number of dollar spot infection centers than Lexicon Intrinisic (4 apps), and Exteris Stressgard (3.0 and 4.0 fl oz/ 1000 sq ft) (4 and 3 apps, respectively). By 25 Aug, plots treated with Exteris Stressgard (1.5 and 2.0 fl oz/ 1000 sq ft) (6 apps) had significantly less dollar spot counts than plots treated with Interface Stressgard (4 apps). Throughout the season, the lowest dollar spot incidence was observed in plots treated with Exteris Stressgard applied 6 times at 1.5 and 2.0 fl oz/1000 sq ft on a 14 d interval. Brown patch was first observed on 17 Jun. From Jun through Jul, all treated plots had statistically less brown patch severity than the untreated control; however, no significant differences in brown patch control were observed among fungicide treatments. On 25 Aug, plots treated with Exteris Stressgard (1.5 and 2.0 fl oz/ 1000 sq ft) and Lexicon Intrinsic had significantly less brown patch severity than plots treated with Exteris Stressgard (3.0 fl oz/ 1000 sq ft) and the untreated control. During Jun and Jul, minimal differences were noted in turfgrass quality among treatments. Turfgrass quality in all treated plots remained above acceptable levels (≥6) during Jun and July, and from 14 Jul through 25 Aug, had significantly higher turfgrass quality than the untreated control. During the month of Aug, turfgrass quality was reduced among treatments that only received 3 and 4 total applications due to increased dollar spot and brown patch severity. No turfgrass phytotoxicity was noted following any applications.