

CREEPING BENTGRASS (*Agrostis stolonifera* 'Penneagle II')

Dollar spot; *Sclerotinia homoeocarpa*

Brown patch; *Rhizoctonia solani*

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Evaluation of preventive fungicide applications for dollar spot control on fairway height creeping bentgrass, 2014.

Fungicides were evaluated for disease control at the University of Missouri Turfgrass Research Facility in Columbia, MO on 'Penneagle II' creeping bentgrass grown on a native soil (Mexico silt loam). Mowing was performed two times weekly at a height of 0.55-in. from 2 Apr to 19 Sep. Starting on 16 May to 8 Aug, UMaxx® (47-0-0) at 0.375 lb N/1000 sq ft + Ferramec (10-2-4) + micros (0.015 lb N/1000 sq ft) was applied every three weeks. 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 CO₂-powered sprayer at 26 psi using TeeJet 8008 nozzles. Following each application, all plots were watered in with 0.2-in of water. On 23 May, rye grain 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 days from initial symptom development. Dollar spot incidence was assessed as number 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. Data were subjected to analysis of variance and means separation using Fisher's Protected LSD ($P=0.05$). To stabilize variance, disease severity data was square-root transformed for analysis and back-transformed for presentation.

Initial applications were made based on a preventative fairy ring control program, but early dollar spot control was the targeted pathogen in this study. Preventative fungicide applications were applied on 30 Apr, when the 5 day average 2-in. soil temp was 56°F and again on 28 May. Heat stress and disease occurrence favored by high temperatures were lower in 2014 than in typical seasons (5th coolest July on record in Columbia, MO). Dollar spot was first observed on 28 May, but incidence was suppressed in all fungicide-treated plots except Lexicon Intrinsic. On 11 Jun all fungicide treatments suppressed dollar spot. An increase in dollar spot incidence in fungicide-treated plots was observed on 9 Jul, six weeks following the final fungicide applications. By 6 Aug, all plots had high counts of dollar spot infection centers. Minimal differences in turf quality were noted from May to Aug among treated plots. On 11 Jun, plots treated with Tartan alone had significantly greater turfgrass quality than plots treated with Lexicon Intrinsic. By 9 Jul, 6 weeks following the final application, turfgrass quality was less than acceptable (<5) in plots treated with Tartan followed by Mirage and Lexicon Intrinsic due to disease occurrence. On 6 Aug, turfgrass quality in both treated and untreated plots was (<5); however turfgrass quality in plots treated with single applications of Bayleton Flo were significantly higher than plots treated with Lexicon Intrinsic. No phytotoxicity was observed following any application.