

Evaluation of two fungicide programs for disease control on creeping bentgrass, 2013.

Host:

CREEPING BENTGRASS (*Agrostis stolonifera* 'Penn A-4')

Target Disease/Pathogen:

Dollar spot; *Sclerotinia homoeocarpa*

Brown patch; *Rhizoctonia solani*

Copper spot; *Gloeocercospora sorghi*

Multiple fungicide programs were evaluated for disease control at the University of Missouri Turfgrass Research Facility in Columbia, MO on 'Penn A-4' creeping bentgrass. Mowing was performed at a height of 0.130 in three and five times weekly from 2 Apr to 7 Jun and 7 Jun to 9 Sept, respectively. Nitrogen was applied using Signature™ (13-2-13) on 15 and 22 Apr at 0.20 lb N/1000 sq ft. From 23 May – 3 Sept, 0.25 lb N/1000 sq ft was supplied every two to three weeks with UMaxx™ (47-0-0) + Knife Plus (12-0-0) or Ferromec (10-2-4) + micros (0.01 lb N/1000 sq ft). Revolution (6.0 fl oz/1000 sq ft) was applied every 28 days starting on 8 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 per 1000 sq ft with a CO₂ powered sprayer at 26 psi using TeeJet 8008 nozzles. On 13 May, rye grain (*Secale cereale* L.) infested with three isolates of *Sclerotinia homoeocarpa* was uniformly applied at a volume of 1.52 in³ per plot using a small broadcast spreader. Inoculum was left on the turf surface for 2 days. Disease severity and turfgrass quality were assessed every 14 days from initial symptom development. Disease severity was assessed as a visual estimate of the percent symptomatic area and 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. Data were subjected to analysis of variance and means separation using Fishers Protected LSD (P=0.05).

Two preventive fungicide programs (see table for application details) were initiated on 8 May and continued until 14 Aug, following a 14 d application interval. Dollar spot and brown patch symptoms were first observed in untreated plots on 22 May and 19 Jun, respectively. From 5 Jun – 25 Sept, both program treated plots had significantly lower dollar spot severity than untreated plots. No statistical differences in dollar spot control were observed between the two programs. Dollar spot symptoms were first noted in plots treated with programs 1 and 2 on 28 Aug and 11 Sept, respectively. On 25 Sept, (six weeks after the final application), residual control was still observed in program-treated plots (4 - 5% symptomatic area vs. 51% in the untreated control). All program-treated plots had significantly lower brown patch severity compared to the untreated control. Among treated plots, brown patch symptoms (<1%) were only observed in Program 2 on the 17 Jul rating date. During mid to late Sept, copper spot was observed in untreated plots but not in treated plots. Turfgrass quality remained above acceptable levels for both programs compared to the untreated control. On 17 Jul, plots treated with Program 2 had significantly lower turfgrass quality than Program 1 treated plots due to an increase in brown patch severity on that rating date. No phytotoxicity was observed as a result of any fungicide application.