

Evaluation of multiple 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*

Red leaf spot; *Drechslera erythrospila*

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. 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).

Four preventive fungicide programs (see table for application details) were initiated on 8 May following a 14 d application interval. Dollar spot, brown patch, and red leaf spot symptoms were first observed in untreated plots on 5 Jun, 19 Jun and 3 Jul, respectively. All program treated plots had significantly lower dollar spot severity from 5 Jun – 25 Sept than untreated plots. No statistical differences in dollar spot control were observed among programs tested. On 25 Sept, (six weeks following the final application), residual dollar spot control (2.3-25.0 infection centers per plot) was observed in program-treated plots vs. (110.8 infection centers per plot) in the untreated control. All programs had significantly lower brown patch severity during the trial compared to the untreated control. Among treated plots, brown patch symptoms (<1%) were only observed in Program 4 on the 28 Aug rating date. Red leaf spot was observed in untreated plots from July – Sept, but did not occur in program-treated plots. Turfgrass quality remained above acceptable levels for all programs compared to the untreated control. On 28 Aug, plots treated with BASF Program 1 had significantly higher turfgrass quality than programs 3 and 4. On 25 Sept, plots treated with Program 4 had significantly lower turfgrass quality than other program treated plots due to an increase in dollar spot incidence. No phytotoxicity was observed as a result of any fungicide application.