

Evaluation of fungicides for brown patch, dollar spot, and copper spot control on creeping bentgrass, 2011.

Host:

Creeping bentgrass putting green (*Agrostis stolonifera* 'Penncross')

Target Disease/Pathogen:

Dollar spot; *Sclerotinia homoeocarpa*

Brown patch; *Rhizoctonia solani*

Copper spot; *Gloeocercospora sorghi*

Fungicides were evaluated for the control of dollar spot and a natural infestation of brown patch and copper spot on a 'Penncross' creeping bentgrass green at the University of Missouri Turfgrass Research Facility in Columbia, MO. The soil was a USGA root zone mix. Mowing was performed three times weekly at a height of 0.135 in. Nitrogen was applied using UFlexx 46-0-0 every two to three weeks at 0.25 lb N/1000 ft² from 3 May to 8 Jun and UMaxx 47-0-0 at 0.125 lb N/1000 ft² from 8 Jun to 11 Aug. Plots were 5 ft × 5 ft and arranged in a randomized complete block with four replications. Treatments were applied in water equivalent to 2.0 gal/1000 sq ft with a CO₂-powered sprayer at 25 psi using TeeJet 8008 nozzles. On 21 May, rye grain 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 to enable pathogen establishment. Disease severity and turfgrass quality were assessed every 7 to 14 days from initial symptom development. Disease severity was assessed as visual estimates 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. Phytotoxicity was observed on 21 and 28 Jul, and 4 Aug and 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 by Waller-Duncan k-ratio t-test (k=100).

Applications were initiated on 6 May when dollar spot was first observed, and continued until 26 Aug. On both 16 Jun and 22 Sept, all treated plots had significantly lower dollar spot severity than the untreated control. Plots treated with Curalan on 21-d intervals and with Interface, Chipco 26019, and Iprodione Pro on 28-d intervals tended to have higher dollar spot severity than other treatments applied on 14- and 21-d intervals. Plots treated with Emerald on a 14-d interval had the lowest dollar spot severity throughout the trial. Brown patch was first observed on 23 Jun. Plots treated with Curalan and Emerald were not different from the untreated control on 18 Aug. Plots treated with 28-d Interface (both rates), and Tourney tended to have the lowest brown patch severity among the treatments at both rating dates. Copper spot was first observed on 14 Jul. Acceptable copper spot control was observed in plots treated 28-d Interface (both rates) and Tourney. Excessive heat in late July and early August combined with repeated treatment applications caused short-term, minimal phytotoxicity among all treatments except Emerald and Tourney. Plots treated with Interface and Tourney had the highest turf quality ratings throughout the study.