

## Evaluation of fungicide programs for disease control on creeping bentgrass, 2011.

### Host:

Creeping Bentgrass (*Agrostis stolonifera* 'Penn A-4')

### Target Disease/Pathogen:

Dollar spot; *Sclerotinia homoeocarpa*

Brown patch; *Rhizoctonia solani*

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. 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 sq ft from 3 May to 8 Jun, and UMaxx 47-0-0 at 0.125 lb N/1000 sq ft 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 CO<sup>2</sup>-powered sprayer at 25 psi using TeeJet 8008 nozzles. The Bayer fungicide program 1 and 2, and the Syngenta program were initiated on 21 Apr and 4 May, respectively. The first fungicide applications for BASF programs 1 through 4 were made on 18 May, making these applications curative for dollar spot control. 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).

Dollar spot symptoms became evident in early May. Dollar spot severity was numerically greater in plots treated curatively with BASF program 1 and programs 2, 3, and 4 until early June. After this period, all treated plots had little to no dollar spot infection centers during the application period. On the 28 Sep rating date (34-d after the last application), residual dollar spot control tended to be greatest for Bayer program 1 and 2 and the least for BASF program 3. Brown patch was first observed on 22 Jun. All programs significantly controlled brown patch severity to acceptable levels (<5%). Turf quality in plots treated with BASF programs 1 through 4 was lower than other program treatments in May and early June due to dollar spot incidence. During the summer stress period, all fungicide programs significantly improved turf quality compared to the untreated control. A short-lived phytotoxic effect was noted in plots treated with the Syngenta program in early August, resulting in lower turf quality ratings than other programs.