Evaluation of fungicides for dollar spot and brown patch control on creeping bentgrass, 2013.

Host:
CREEPING BENTGRASS (*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 on a 'Penncross' creeping bentgrass green at the University of Missouri Turfgrass Research Facility in Columbia, MO. 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 first applied using Signature™ (13-2-13) on 15 and 22 Apr at 0.20 lb N/1000 sq ft. From 23 May – 3 Sept, UMaxx™ (47-0-0) at 0.25 lb N/1000 sq ft + Knife Plus (12-0-0) or Ferromec (10-2-4) + micros (0.01 lb N/1000 sq ft) was applied every two to three weeks. 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 with four replications. Treatments were applied in water equivalent to 2 gal per 1000 sq ft with a CO_2 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 in^3 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 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. Data were subjected to analysis of variance and means separation using Fisher's Protected LSD at (P=0.05).

On 8 May, preventive fungicide applications were applied on 14, 21, or 28 d intervals from 8 May – 28 Aug. Dollar spot symptoms were first observed in untreated control plots on 22 May. From 5 Jun through 25 Sept, dollar spot infection centers per plot was significantly lower in all treated plots compared to the untreated control. No significant difference in dollar spot control was observed among Encartis and Reserve treated plots regardless of rate or application interval throughout the trial period. On all rating dates, no dollar spot symptoms were observed in plots treated with Encartis (28 d). Briskway treated plots had the first breakthrough of dollar spot on 25 Sept (4 weeks after the final application). Brown patch was first observed on 19 Jun and continued into the end of the Sept. On all rating dates, all treated plots had significantly lower brown patch severity than the untreated control. No significant differences were noted in brown patch control among treatments tested until the final rating date (25 Sept). On this date, brown patch severity was significantly higher in plots treated with Daconil Action + Appear. Copper spot was observed in the trial area during mid to late Aug. Until 11 Sept, copper spot incidence was significantly lower in all treated plots than untreated control plots. On 11 Sept, no differences in copper spot control were observed in plots treated with Encartis (3 fl oz/1000 sq ft) when compared to the untreated control. On 25 Sept, (4-5 weeks after the final application), plots treated with Encartis had higher copper spot severity than all other treated and untreated plots. From Jun to Sept, minimal differences in turf quality were observed among treated plots. On all rating dates, turf quality was significantly higher in all treated plots compared to the untreated control. Turf quality remained above acceptable levels (≥5) in treated plots until the 25 Sept rating date. Due to dollar spot and copper spot severity, unacceptable turf quality was noted on 25 Sept in all treated plots except those treated with Reserve and Briskway. No phytotoxicty was observed from any fungicide treatment.