Efficacy of low spray volume applications of fungicides for disease control on creeping bentgrass, 2012.

Host:
Creeping bentgrass (*Agrostis stolonifera* ‘Penncross’)

Target Disease/Pathogen:
Dollar spot; *Sclerotinia homoeocarpa*
Brown patch; *Rhizoctonia solani*

Fungicides were evaluated for the control of dollar spot and a natural infestation of brown patch on a 20 year old ‘Penncross’ creeping bentgrass green with a USGA root zone mix at the University of Missouri Turfgrass Research Facility in Columbia, MO. Mowing was performed three times weekly at a height of 0.140 in. Nitrogen was applied using UFlexx 46-0-0 at 0.35 lb N/1000 sq ft on 16 Mar. UMaxx 47-0-0 at 0.4 lb N/1000 sq ft + Knife Plus at 0.01 lb N /1000 sq ft was applied on 4 May. UMaxx at 0.125 lb N /1000 sq ft + Knife Plus at 0.01 lb N /1000 sq ft was applied every two weeks from 18 May to 31 Aug. Plots were 5 ft × 5 ft and arranged in a randomized complete block with four replications. Treatments were applied in water equivalent to 1.0 gal/1000 sq ft with a CO$_2$-powered sprayer at 23 psi using TeeJet 8004 nozzles. On 8 Jun, 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 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 by Waller-Duncan k-ratio t-test (k=100).

Treatments were initiated on 11 May and continued until 24 Aug on either 14 d or 21 d intervals. Dollar spot symptoms were first observed in the plot area on 7 Jun. From 5 Jul through 4 Sep, dollar spot severity was significantly lower in all fungicide treated plots compared to the untreated control. Plots treated with Daconil Ultrex in a low spray volume had consistently numerically higher dollar spot severity than plots treated with Encartis and Curalan at low spray volumes. Plots treated with Encartis and Curalan, regardless of application intervals, exhibited acceptable dollar spot control throughout the study period. Brown patch was observed from Jul through Sept. Minimal differences in brown patch control were noted in treated plots, however plots treated with Encartis remained at acceptable levels (≤5%). Dollar spot and brown patch activity reduced turf quality to below acceptable levels in all plots except Encartis applied at either a 14 or 21 d interval. No phytotoxicity was observed as a result of fungicide treatments.