

Evaluation of fungicide applications for large patch control on zoysiagrass, 2013-2014.

Fungicides were evaluated for control of large patch at the University of Missouri Turfgrass Research Facility in Columbia, MO on 'Meyer' zoysiagrass. The soil was a Mexico silt loam. Mowing was performed two times weekly at a height of 0.75-in. No fertilizer applications were made during the trial period. Plots were 5 ft × 10 ft and arranged in a randomized complete block with four replications. Plots were inoculated on 27 Sep 13 by placing 1.52-in.³ of rye grain (*Secale cereale* L.) infested with *Rhizoctonia solani* AG2-2 LP in the center of each plot under a metal plate. Plates were removed on 4 Nov 13 and mycelial growth was noted within the turf canopy. Treatments were applied in water equivalent to 2.0 gal per 1000 sq ft with a CO₂-powered sprayer at 26 psi using TeeJet 8008 nozzles. Disease severity and turfgrass quality were assessed every 14 days from initial symptom development. Select rating dates are presented in the table below to demonstrate disease progress and turfgrass quality in untreated control plots. Disease severity was assessed as a visual estimation of the percent symptomatic area within the 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 Fisher's Protected LSD ($P = 0.05$). To stabilize variance, disease severity data was log-transformed ($\log X + 1$) for analysis and back-transformed for presentation.

Large patch was first observed on 17 Oct 13, when all treated plots had significantly less large patch severity than the untreated plots. Large patch was first observed again the following spring on 30 Apr. From 30 Apr to 15 May all treated plots had significantly less large patch severity than the untreated control. No significant differences in large patch severity were noted among treatments, except on 11 Jun. On 11 Jun, plots treated with Mirage (2.0 fl oz) (ABC - three times in the fall) and (ABD - twice in the fall and once in the spring) had significantly less large patch severity than plots treated with Heritage (AB - applied only twice in fall). On 11 Jun, large patch severity was > 5% in plots treated with two fall applications of Mirage (1.0 fl oz), Heritage, or ProStar (19 Sep 13) followed by Triton FLO (30 Apr 14). Although large patch severity was prevalent in the trial area, spring 2014 turf quality in treated plots remained at acceptable levels (≥ 5) on 15 May and 11 Jun rating dates. No phytotoxicity was observed as a result of any fungicide treatment.