

Evaluation of granular and sprayable fungicides for large patch control on zoysiagrass, 2011-2012.

Host:

Zoysiagrass (*Zoysia japonica* 'Meyer')

Target Disease/Pathogen:

Large Patch; *Rhizoctonia solani* AG2-2 LP

Fungicides were evaluated for the 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 one to two times weekly at a height of 1.5 in. Plots were 5 ft × 10 ft and were arranged in a randomized complete block with four replications. Plots were inoculated on 28 Sep by placing 1.52 in³ of rye grain (*Secale cereale* L.) infested with *Rhizoctonia solani* AG2-2 LP under a metal plate until 23 Mar. Applications of Heritage G and Headway G were applied by hand using a shaker bottle, and watered in with 0.2 in. of irrigation immediately following application. After turf was allowed to dry, all other treatments were applied in water equivalent to 2.0 gal per 1000 sq ft with a CO₂-powered sprayer at 28 psi using TeeJet 8008 nozzles. Disease severity and turfgrass quality were assessed every 14 days from initial symptom development. 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 Waller-Duncan k-ratio t-test (k=100).

Large patch symptoms were first observed on 14 Oct, but were minimal during the fall of 2011. Following an early spring greenup due to a warmer than normal March, large patch severity was significantly lower in all treated plots than the untreated control on 13 Apr. On 10 May, all treated plots still had lower large patch severity than the untreated control except for those treated with a single fall application of Heritage TL. Plots treated with Affirm (0.9 oz/1000 sq ft) (A) followed by Torque (0.9 fl oz/1000 sq ft) (B) in the fall, followed by a spring application of CX-55 (6.0 fl oz/1000 sq ft) had the lowest disease severity ratings ($\leq 1\%$) and highest turf quality among the treatments tested. A single fall application of Renown, Heritage G, and Headway G also sufficiently controlled large patch ($\leq 2.5\%$) when compared to the untreated control (22.8%). Due to large patch infection, turf quality was below acceptable levels (< 5) for plots treated with a single fall Heritage TL application. No phytotoxicity or reduction in spring greenup was observed as a result of fungicide treatment.