

Evaluation of fungicides for control of brown patch in 'Coronado' tall fescue, 2007.

Fungicides were evaluated for control of brown patch in tall fescue landscapes. This trial was conducted at the Lake Wheeler Turfgrass Field Lab in Raleigh, NC on 'Coronado' tall fescue. Turf was mowed twice weekly at a height of 3.5 in. with clippings returned. The site was irrigated with 0.13 in. water daily at 800 h and 2000 h to provide conditions conducive to disease development. Fertilizer was applied as 46-0-0 on 11 Jan (0.25 lb N/1000 sq ft) and 25-6-12 on 20 Feb and 24 Apr (1.0 lb N/1000 sq ft each). Barricade 65WG was applied at 0.25 lb ai/a on 26 Feb and 25 Apr for pre-emergence control of annual grasses. Plots were 5 ft x 6 ft and were arranged in a randomized complete block with four replications. Unless otherwise indicated in the table, fungicides were applied in water equivalent to 2 gal per 1000 sq ft with a CO₂ powered sprayer at 40 psi using TeeJet 8004 nozzles. Treatments were initiated on 15 Jun, except as noted, and were reapplied at the appropriate intervals as indicated in the table. The experimental area was inoculated on 6 Jun using rye grain infested with *R. solani* isolates ECC-A, ECC-B, ECC-C, and ECC-E. Percent turf area exhibiting brown patch symptoms was assessed on 5, 11, and 26 Jul, and 3 Aug. Turfgrass quality was evaluated on 6 Aug using a 1 to 9 scale (9=best, 5=acceptable). Data were subjected to analysis of variance and means separation by Waller-Duncan k-ratio t test (k=100).

Brown patch pressure was light in this experiment, with untreated control plots exhibiting a maximum disease incidence of 12.9% in early July. Disease incidence was variable in mid- to late-July, coincident with droughty conditions. Only 0.2 in. of rain fell during the last 17 days of June and 0.3 in. during the first 16 days of July. Aside from a 3.0 in. rain event on 17 Jul, a total of 0.5 in. was recorded between 17 Jul and 21 Aug. This, combined with record high temperatures throughout August, is a likely cause of the low and variable brown patch incidence. Headway (both rates), NCSU-EXP-3 (1.1 oz applied in 2 gal water/1000 sq ft), Insignia, and NCSU-EXP-3 (0.825 oz, preventive application, 21-day interval) provided excellent control of brown patch throughout the study. No significant differences were observed among the three NCSU-EXP-3 treatments (1.1 oz each) applied in 2, 3, or 4 gal water/1000 sq ft. Curative treatments, initiated 12 Jul, were providing brown patch suppression equal to their preventively-applied counterparts on 3 Aug; however, only the preventive NCSU-EXP-3 (0.825 oz) treatment was significantly different from the untreated control. The two SA-BLX + SA-IB tank mixtures and the two BS-SSTA treatments were ineffective in controlling brown patch in this trial, with the exception of the 3.0 fl oz rate of BS-SSTA on 26 Jul. Severe phytotoxicity was observed throughout the trial in all plots treated with Headway + Primo MAXX tank mixtures. The injury was more severe in plots receiving the low rate of Headway (0.75 fl oz) than in plots receiving the high rate of Headway (1.5 fl oz), and no phytotoxicity was observed in plots treated with Headway alone. In fact, plots treated with the 1.5 fl oz rate of Headway exhibited the highest turf quality on 6 Aug. Although Primo was not applied alone in this experiment, a side study demonstrated that the observed phytotoxicity was induced by Primo and that Headway helped to mitigate this effect.

Treatment, formulation, and rate per 1000 sq ft	Appl. interv. (days)	Brown patch incidence (%)				Turf quality ^z
		5 Jul	11 Jul	26 Jul	3 Aug	
Disarm 4SC 0.09 oz.....	28 ^y	0.7 de ^x	0.9 c	2.0 d-g	3.7 a-d	7.5 abc
Disarm 4SC 0.18 oz.....	28	0.3 e	0.6 c	1.6 d-g	3.2 a-d	7.3 a-d
Disarm 4SC 0.28 oz.....	28	0.3 e	1.5 c	1.9 d-g	1.8 bcd	7.5 abc
Disarm 4SC 0.36 oz.....	28	0.6 e	2.8 bc	2.1 d-g	4.3 a-d	6.3 def
Headway 1.39ME 1.5 fl oz.....	28	1.4 de	1.3 c	0.4 fg	0.8 cd	8.0 a
Headway 1.39ME 1.5 fl oz + Primo MAXX 1ME 0.75 fl oz ^w	28	---	---	---	---	4.0g
Headway 1.39ME 0.75 fl oz.....	28	0.1 e	0.9 c	0.2 fg	1.6 cd	7.5 abc
Headway 1.39ME 0.75 fl oz + Primo MAXX 1ME 0.75 fl oz ^w	28	---	---	---	---	2.0 h
NCSU-EXP-3 1.1 oz.....	28	0.0 e	0.2 c	0.5 fg	0.9 cd	7.8 ab
NCSU-EXP-3 1.1 oz ^v	28	0.0 e	0.7 c	0.8 d-g	3.3 a-d	7.0 a-d
NCSU-EXP-3 1.1 oz ^u	28	0.0 e	0.0 c	0.4 fg	1.8 bcd	7.3 a-d
Insignia 20WG 0.9 oz.....	28	0.4 e	0.2 c	0.6 efg	0.8 cd	7.5 abc
NCSU-EXP-3 0.825 oz.....	21	0.0 e	0.3 c	0.6 efg	0.7 d	7.5 abc
NCSU-EXP-3 1.1 oz.....	21	0.1 e	0.5 c	0.1 g	3.5 a-d	7.3 a-d
NCSU-EXP-3 0.825 oz ^t		6.2 abc	15.7 a	4.2 a-e	4.3 a-d	7.8 ab
NCSU-EXP-3 1.1 oz ^t		9.2 a	15.3 a	3.8 b-f	2.2 bcd	7.5 abc
NCSU-EXP-3 0.825 oz.....	28	0.7 de	2.4 bc	1.6 d-g	3.8 a-d	6.8 b-e
NCSU-EXP-3 1.1 oz.....	28	0.3 e	2.0 bc	2.2 c-g	3.8 a-d	6.5 c-f
NCSU-EXP-3 0.825 oz ^s		7.8 ab	14.2 a	3.3 b-g	2.4 bcd	7.0 a-d
NCSU-EXP-3 1.1 oz ^s		7.6 ab	15.3 a	2.1 d-g	2.4 bcd	7.5 abc
Heritage TL 0.8ME 2.0 fl oz.....	28	0.3 e	2.0 bc	2.7 b-g	3.7 a-d	6.8 b-e
Heritage TL 0.8ME 2.0 fl oz ^s		3.5 cde	12.1 a	3.0 b-g	4.0 a-d	7.3 a-d
Heritage TL 0.8ME 1.0 fl oz.....	28	0.5 e	0.8 c	2.5 c-g	4.0 a-d	6.8 b-e
SA-BLX L 0.5 fl oz + SA-IB L 2.0 fl oz.....	14	2.6 cde	9.1 ab	4.3 a-d	4.1 a-d	5.8 ef
SA-BLX L 1.0 fl oz + SA-IB L 4.0 fl oz.....	14	6.3 abc	13.2 a	6.2 ab	7.1 a	5.8 ef
BS-SSTA 2004 L 3.0 fl oz.....	14	5.5 abc	14.4 a	2.4 c-g	2.2 bcd	6.3 def
BS-SSTA 2004 L 5.0 fl oz.....	14	4.6 bcd	16.4 a	5.8 abc	5.4 abc	5.5 f
Untreated Control.....		6.2 abc	12.9 a	7.7 a	6.3 ab	6.3 def

^z Turfgrass quality on a 1 to 9 scale, where 9=highest quality, and 5=acceptable.

^y Application intervals: 28 day treatments applied 15 Jun, 12 Jul, 7 Aug; 21 day treatments applied 15 Jun, 5 and 26 Jul, 14 Aug; 14 day treatments applied 15 and 28 Jun, 12 and 26 Jul, 7 and 22 Aug.

^x Values are means of four replications. Means within the same column followed by the same letter are not significantly different according to the Waller-Duncan k-ratio t-test (k=100).

^w Treatment was not ratable due to severe phytotoxicity.

^v Treatment applied in water equivalent to 3 gal/1000 sq ft using TeeJet 8006 nozzles.

^u Treatment applied in water equivalent to 4 gal/1000 sq ft using TeeJet 8008 nozzles.

^t Treatment applied as a curative treatment on a 21-day interval 12 Jul, and 2 and 22 Aug.

^s Treatment applied as a curative treatment on a 28-day interval 12 Jul and 7 Aug.