

Fall and Dormant Applications of Roundup ProMax for Dallisgrass Control

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Introduction

This study was conducted on a mature stand of 'Mirage' bermudagrass (*Cynodon dactylon*) at the East Tennessee Research and Education Center (Knoxville, TN). The objective of the study was to evaluate the efficacy of Roundup ProMax for dallisgrass (*Paspalum dilatatum*) control when applied to turfgrasses transitioning into and during winter dormancy.

Methods and Materials

The test site was maintained similar to that of a golf course fairway with respect to irrigation, fertilization and mowing.

Treatments were arranged in a randomized complete block design with four replications. Herbicide treatments were applied on 15 October 2008, 17 November 2008, and 29 January 2009 to plots (5' x 5') using a CO₂ powered boom sprayer calibrated to deliver 30 gpa using four, flat-fan, 8002 nozzles at 18 psi, configured to provide a 5-ft spray swath.

Dallisgrass control was rated visually utilizing a 0 (no turf injury or weed control) to 100 % (complete control of all weeds or turf) scale at 7, 14, 26, 181, 188, 195, 201, and 208 days after initial treatment (DAIT). Turfgrass injury was visually rated using the same scale at 7, 14, and 26 DAIT. Percent spring green-up data were also collected at 160, 167, 174, 181, 188, 195, 201, and 208 DAIT.

Results and Discussion

October applications of Roundup ProMax at 0.375 lb a.e./A controlled dallisgrass in this study. All treatments provided greater than 83% control at 26 DAIT, and greater than 97% control at 188 DAIT. By 208 DAIT, control had been reduced to 87, 66, and 86 % for treatments initially delivering Roundup ProMax in October. Control for treatments applied in November and January at 208 DAIT measured 20.0 and 0.0%, respectively (Table 1).

October applications induced significant bermudagrass injury. At 26 DAIT, injury was greater than 30% for all treatments (Table 1). These applications also delayed spring green-up. Applications of Roundup ProMax at 0.375 lb a.e./A in October yielded spring green-up values of 8.8, 7.5, and 16.3% at 174 DAIT. Values for plots treated in November and January (i.e- fully dormant) at the same rate measured 48.8% at 174 DAIT (Table 3). and were not significantly different from the untreated check (Table 2). By 201 DAIT, no significant differences in spring green-up were detected.

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Table 1. Dallisgrass control and bermudagrass injury following applications of Roundup ProMax in 2008 and 2009.

Treatment	Rate -per A-	Time -Month-	Dallisgrass Control								Bermudagrass Injury		
			7 DAIT	14 DAIT	26 DAIT	181 DAIT	188 DAIT	195 DAIT	201 DAIT	208 DAIT	7 DAIT	14 DAIT	26 DAIT
-----%													
1. UNTREATEDCHECK			0.0 b [†]	0.0 b	0.0 b	0.0 c	0.0 c	0.0 b	0.0 b	0.0 b	0.0 a	0.0 b	0.0 b
2. MON 76207	0.375 lb a.e.	OCT	6.3 a	62.5 a	86.3 a	100.0 a	100.0 a	100.0 a	92.5 a	87.5 a	3.8 a	41.3 a	30.0 a
3. MON 76207	0.375 lb a.e.	NOV	---	---	---	100.0 a	58.8 b	22.5 b	22.5 b	20.0 b	---	---	---
4. MON 76207	0.375 lb a.e.	JAN	---	---	---	50.0 b	0.0 c	0.0 b	0.0 b	0.0 b	---	---	---
5. MON 76207	0.375 lb a.e.	OCT	7.5 a	62.5 a	88.8 a	100.0 a	100.0 a	100.0 a	70.0 a	66.3 a	6.3 a	42.5 a	31.3 a
MON 76207	0.375 lb a.e.	JAN											
MON 76207	0.375 lb a.e.	OCT	7.5 a	62.5 a	83.8 a	100.0 a	97.5 a	100.0 a	90.0 a	86.3 a	5.0 a	37.5 a	31.3 a
6. MON 76207	0.375 lb a.e.	JAN											

[†]Means followed by the same letter do not significantly differ (P = 0.05; Duncan's new MRT)

Table 2. Spring green-up of 'Mirage' bermudagrass following applications of Roundup ProMax in 2008 and 2009.

Treatment	Rate -per A-	Time -Month-	'Riveria' Spring Green-up							
			160 DAIT	167 DAIT	174 DAIT	181 DAIT	188 DAIT	195 DAIT	201 DAIT	208 DAIT
-----%										
1. UNTREATEDCHECK			15.0 a [†]	30.0 a	45.0 a	61.3 a	83.8 a	93.8 a	97.5 a	100.0 a
2. MON 76207	0.375 lb a.e.	OCT	2.5 a	2.5 b	8.8 b	12.5 b	25.0 b	53.8 b	58.8 a	87.5 a
3. MON 76207	0.375 lb a.e.	NOV	15.0 a	33.8 a	48.8 a	62.5 a	87.5 a	93.8 a	100.0 a	100.0 a
4. MON 76207	0.375 lb a.e.	JAN	13.8 a	32.5 a	48.8 a	57.5 a	85.0 a	91.3 a	100.0 a	100.0 a
5. MON 76207	0.375 lb a.e.	OCT	3.8 bc	1.3 b	7.5 b	10.0 b	35.0 b	62.5 b	80.0 a	95.0 a
MON 76207	0.375 lb a.e.	JAN								
6. MON 76207	0.375 lb a.e.	OCT	5.0 b	5.0 b	16.3 b	23.8 b	42.5 b	75.0 ab	92.5 a	100.0 a
MON 76207	0.375 lb a.e.	JAN								

[†]Means followed by the same letter do not significantly differ (P = 0.05; Duncan's new MRT)

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