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2008 Perennial Ryegrass Phytotoxicity Trial

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Abstract

The objective of this study was to investigate the effects of Dismiss 4F (Sulfentrazone) and Sedgehammer 75 WDG (Halosulfuron) on perennial ryegrass maintained at fairway mowing height. The area was established to 38% Divine, 34% Majesty, and 25% Secretariat perennial ryegrass in 2003. The area was mowed at 1.5 in. mowing height. This is slightly higher than golf course fairways in the region, but was necessary this spring because of the very wet conditions on the site. The site received 3 lb nitrogen (N)/1000 ft² /yr and had received a total of 1.75 lb by the end of the study period. Treatments were applied June 3, 2008 (Table 1). The Dismiss at 0.125 lb a.i./acre was repeat applied on July 1, 2008 (the fifth treatment). No other treatments were repeated. The study was conducted as a randomized complete block with four replications.

Keywords

Horticulture

Disciplines

Agricultural Science | Agriculture | Horticulture

2008 Perennial Ryegrass Phytotoxicity Trial

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Treatments were applied with a backpack CO₂ sprayer equipped with 8002 nozzles at 40 psi, and a spray volume equivalent to 3 gallons/1000ft².

Introduction

The objective of this study was to investigate the effects of Dismiss 4F (Sulfentrazone) and Sedgehammer 75 WDG (Halosulfuron) on perennial ryegrass maintained at fairway mowing height. The area was established to 38% Divine, 34% Majesty, and 25% Secretariat perennial ryegrass in 2003. The area was mowed at 1.5 in. mowing height. This is slightly higher than golf course fairways in the region, but was necessary this spring because of the very wet conditions on the site. The site received 3 lb nitrogen (N)/1000 ft²/yr and had received a total of 1.75 lb by the end of the study period. Treatments were applied June 3, 2008 (Table 1). The Dismiss at 0.125 lb a.i./acre was repeat applied on July 1, 2008 (the fifth treatment). No other treatments were repeated. The study was conducted as a randomized complete block with four replications.

Phytotoxicity data were collected for 6 weeks following the initial application (Table 1). The low rate of Dismiss 4F (0.125 lb a.i./acre) and the Sedgehammer (0.046 lb a.i./acre) did not cause unacceptable damage to the ryegrass at any time during the study.

The 0.188 lb a.i./acre rate of Dismiss 4F caused initial damage that continued until June 17. The 0.25 lb a.i./acre of Dismiss 4F caused similar damage to the ryegrass, which remained a few days beyond what was observed at the 0.188 lb a.i./acre level. No damage to the perennial ryegrass was observed following the repeat application of the 0.125 lb a.i./acre level of Dismiss on July 1. The area was extremely wet at the time of the initial application and remained wet for several weeks. The soil was still quite wet at the time of the repeat application.

Table 1. Phytotoxicity of perennial ryegrass by Dismiss and Sedgehammer herbicides.¹

Treatment	Rate (lb a.i./acre)	June 6	June 9	June 12	June 14	June 17	June 21	June 27	July 1	July 5	July 9	July 14
Control	--	0	0	0	4	1	1	0	0	0	0	0
Dismiss 4F	0.125	1	1	0	6	3	3	0	0	0	0	0
Dismiss 4F	0.188	20	18	8	9	5	4	1	0	0	0	0
Dismiss 4F	0.25	20	38	18	14	8	5	5	0	0	0	0
Dismiss 4F	0.125/0.125	4	5	1	6	4	4	5	0	0	0	0
Sedgehammer	0.046	0	0	0	3	1	3	3	0	0	0	0
LSD (0.05)		NS	12	11	5	4	NS	NS	NS	NS	NS	NS

¹Phytotoxicity was rated on a scale of 0 to 100, where 100 represented complete kill and 0 was no damage; a rating of 10 and above was considered to be unacceptable discoloration.