

EVALUATION OF MILESTONE[®] FOR CROP TOLERANCE ON KENTUCKY BLUEGRASS AND ROUGH BLUEGRASS, 2000-2001

Marvin Butler, Claudia Campbell, Les Gilmore, Norm McKinley, and Dennis Wilson

Abstract

Milestone[®] herbicide was evaluated to determine the potential for use for seedling and weed control in Kentucky and rough bluegrass seed production. Three rates were broadcast over the rows (1 oz/acre to 4 oz/acre), followed by banded applications of 4 oz/acre and 8 oz/acre for Kentucky bluegrass and 5.25 oz/acre and 10.5 oz/acre for rough bluegrass. In general, the rates applied either broadcast or banded produced unacceptable levels of crop injury. Kentucky bluegrass shows more tolerance to Milestone than rough bluegrass.

Introduction

Grass seed growers in central Oregon are using banded spraying between rows to control weeds and seedlings. However, this leaves in-row seedlings and weeds that remain untreated. The objective of this trial was to evaluate Milestone as a banded spray between planted rows of Kentucky bluegrass and rough bluegrass in combination with low rates broadcast over the top to provide potential control of in-row seedlings and weeds.

Methods and Materials

Plots were placed in a commercial Kentucky bluegrass ('Merit') field and two commercial rough bluegrass ('Laser' and 'Saber') fields near Madras, Oregon. Plots were replicated three times in a split-block design, with the broadcast application as the main plots. Broadcast rates of Milestone were 1 oz/acre, 2 oz/acre, and 4 oz/acre. Subplots were banded with Milestone at 4 oz/acre, 8 oz/acre, and banded at 5.25 oz/acre and 10.5 oz/acre on the rough bluegrass locations.

Broadcast treatments were applied to 10-ft x 30-ft plots with a CO₂-pressurized, hand-held boom sprayer at 40 psi and 20 gal/acre water. Banded applications were applied with an experimental push-type shielded sprayer to 10-ft x 10-ft plots. Treatments were applied to the Kentucky bluegrass plots October 6 and to the rough bluegrass plots October 13, 2000. Plots were evaluated for percent between row seedling control and percent stand reduction on April 3 for the Kentucky bluegrass, April 5 for the 'Laser' rough bluegrass, and April 6 for the 'Saber' rough bluegrass.

Results and Discussion

Milestone applied broadcast alone significantly reduced grass stand for all treatments compared to untreated plots (Table 1), except Kentucky bluegrass at 1 oz/acre. Kentucky bluegrass ('Merit') shows greater tolerance to Milestone applied broadcast than rough

bluegrass ('Laser', 'Saber'), with 3 percent rather than 30 percent stand reduction at 1 oz/acre, 33 percent compared to 67 or 73 percent at 2 oz/acre, and 72 percent rather than 97 or 98 at 4 oz/acre.

Seedling control was greater for rough bluegrass than Kentucky bluegrass. Milestone broadcast at 1 oz/acre reduced Kentucky bluegrass seedlings by 17 percent, without a banded application. All other treatments were unacceptable, with stands of either Kentucky or rough bluegrass reduced between 50 and 100 percent. No seedlings were present in the 'Saber' rough bluegrass plots.

There appeared to be an effect on crop stands by banded application of Milestone alone, as indicated by the reduced stands observed in plots without a broadcast application. The crop stands in these plots were consistently reduced as banded application rates increased. This may have been the result of the product movement into the root zone, or increased Milestone concentrated at the base of the shields near the seed line.

The potential use of Milestone for row spraying appears greater for Kentucky bluegrass than rough bluegrass. However, lower rates will need to be evaluated to determine if adequate crop safety can be achieved.

Table 1. Milestone evaluation for crop tolerance on Kentucky bluegrass ('Merit') and Rough bluegrass ('Laser', 'Saber') in three commercial fields near Madras, Oregon, 2001.

Treatment		Stand reduction			Seedling control	
Broadcast	Banded	'Merit'	'Laser'	'Saber'	'Merit'	'Laser'
-----Prod/acre-----		-----%-----			-----%-----	
4 oz	8 or 10.5 oz	91 a ¹	100 a	100 a	98 a	100 a
4 oz	4 or 5.25 oz	75 ab	100 a	100 a	95 a	100 a
4 oz	Untreated	2 ab	97 a	98 a	78 a	92 a
2 oz	8 or 10.5 oz	70 ab	99 a	100 a	90 a	100 a
2 oz	4 or 5.25 oz	40 c	94 a	100 a	85 a	99 a
2 oz	Untreated	33 cd	67 b	73 a	50 b	70 b
1 oz	8 or 10.5 oz	47 bc	97 a	100 a	88 a	100 a
1 oz	4 or 5.25 oz	7 d	85 ab	8 a	77 a	98 a
1 oz	Untreated	3 d	30 c	30 b	17 c	53 c
Untreated	8 or 10.5 oz	33 cd	80 ab	100 a	80 a	100 a
Untreated	4 or 5.25 oz	0 d	37 c	88 a	73 a	98 a
Untreated	Untreated	0 d	0 d	0 c	0 c	0 d

¹Mean separation with Student-Newman-Kuels (SNK) Test at $P < 0.05$.