

EVALUATION OF HERBICIDES FOR CONTROL OF CHEATGRASS AND RATAIL FESCUE IN ROUGH BLUEGRASS, 1998-99

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Abstract

Rough bluegrass is generally more sensitive to herbicides, and therefore it is more difficult to find materials that provide adequate weed control while not damaging the crop. Herbicides were evaluated in two commercial rough bluegrass fields near Madras, Oregon. Nortron applied on November 2 provided 95 percent control of cheatgrass and rattail fescue while reducing seed set of the crop by 37 percent. Other herbicides effective against cheatgrass and rattail fescue caused substantially higher reductions in seed set.

Introduction

Central Oregon is the major rough bluegrass seed production area in the U.S. Rough bluegrass is used for overseeding warm season grasses in the south when they go dormant during the cool season. The object of the research was to do an initial screening of herbicides for use on rough bluegrass to control cheatgrass and rattail fescue. Rough bluegrass is generally more sensitive to herbicides than Kentucky bluegrass, and therefore it is harder to find effective herbicides against these weed species that do not cause unacceptable damage to the crop.

Methods and Materials

Herbicides were evaluated in two commercial rough bluegrass seed fields ('Saber' and 'Cypress') near Madras, Oregon. Plots 10 ft x 25 ft were replicated three times in a randomized complete block design. Treatments were applied with a CO₂ pressurized, hand-held boom sprayer at 40 psi and 20 gal/a water. Crop oil concentrate was applied at 1 qt/a with Nortron. Spray Booster S was applied at 1 qt/100 gal in combination with Goal, Banvel, Axium, Raptor, and herbicides applied as a tank mix. Spray Booster S was applied at 0.5% v/v in combination with Mavrick Ammonium nitrate was added at 1 qt/a to the Spray Booster S with the Raptor application. Prowl, Command, and Solicam were applied without additives. Applications were made on October 30, 1998 to the 'Saber' field and November 2, 1998 to the 'Cypress' location.

Plots at both locations were evaluated for percent reduction in biomass on March 1, 1999. At the 'Cypress' location, percent cheatgrass control was evaluated on March 4 and percent rattail control was evaluated on April 22. Rattail fescue was concentrated in the first replication, and so numbers reported are from that single replication. There was not adequate cheatgrass or rattail at the 'Saber' location for evaluation. Percent reduction in seed set was evaluated shortly before harvest at both locations on June 23, 1999.

Results and Discussion

Nortron at 3 pt/a provided 95 percent control of both cheatgrass and rattail fescue while reducing seed set 37 percent (Table 1). All other herbicide treatments reduced seed set at a significantly higher rate. Command, Goal plus diuron, and Goal plus Nortron provided 97 to 99 percent control of cheatgrass and 95 to 100 percent control of rattail fescue but reduced seed set by 93 to 98 percent. There was good correlation between percent reduction in biomass evaluated on March 1 and percent reduction in seed set evaluated June 23. Although there were some differences in percent reduction between locations, results were generally consistent across the two trials (Table 2).

Table 1. Evaluation of injury to 'Cypress' rough bluegrass and control of cheatgrass and rattail fescue following herbicide applications on November 2, 1998 near Madras, Oregon.

Treatment	Rate	Reduction in biomass		Control of cheatgrass		Reduction in seed set		Control of rattails
	(product/a)	(%)		(%)		(%)		(%)
Nortron	3 pt	63	c ²	95	a	37	bcd	95
Goal	10 oz	60	c	72	ab	27	cd	60
Prowl	2 pt	0	e	0	c	13	d	0
Banvel	4 pt	33	d	80	ab	0	d	0
Axium	10 oz	96	a	65	b	70	abc	50
Raptor	3 oz	75	bc	97	a	63	abc	0
Mavrick	0.5 oz	88	ab	93	a	77	ab	50
Command	1 pt	98	a	99	a	93	a	95
Solicam	5 oz	0	e	0	c	30	bcd	0
Nortron	3 pt	75	bc	82	ab	10	d	85
+Banvel	2 pt							
Prowl	2 pt	32	d	72	ab	0	d	0
+Banvel	4 pt							
Goal	10 oz	99	a	99	a	98	a	100
+Nortron	3 pt							
Diuron	1 lb	99	a	97	a	90	a	99
+Goal	10 oz							
Untreated		0	e	0	c	0	d	0

Data reflects evaluation of only one replication.

²Mean separation with Student-Newman-Keuls P<0.05.

Table 2. Evaluation of injury to 'Saber' rough bluegrass following herbicide applications October 30, 1998 near Madras, Oregon.

Treatment	Rate	Reduction in biomass		Reduction in seed set	
	(product/a)		(%)		(%)
Nortron	3 pt	30	b ¹	3	d
Goal	10 oz	28	b	17	cd
Prowl	2 pt	0	d	0	d
Banvel	4 pt	12	cd	7	bc
Axium	10 oz	75	a	37	bc
Raptor	3 oz	92	a	80	a
Mavrick	0.5 oz	88	a	57	b
Command	1 pt	88	a	85	a
Solicam	5 oz	0	d	0	d
Nortron	3 pt	28	b	3	d
+Banvel	2 pt				
Prowl	2 pt	20	bc	20	cd
+Banvel	4 pt				
Goal	10 oz	77	a	40	bc
+Nortron	3 pt				
Diuron	1 lb	78	a	53	b
+Goal	10 oz				
Untreated		0	d	0	c

Mean separation with Student-Newman-Keuls $P < 0.05$.