EVALUATION OF HERBICIDES FOR CONTROL OF ROUGHSTALK BLUEGRASS AND INJURY TO KENTUCKY BLUEGRASS, 1995-1996

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Abstract

Herbicides terbacil (Sinbar, Du Pont), diuron (Karmex, Du Pont), primisulfuron (Beacon, Ciba), oxyfluorfen (Goal, Rohm and Haas), metribuzin (Lexone, Du Pont), and imazamethabenz (Assert, Cyanamid) were applied in combination to commercial fields of roughstalk bluegrass and Kentucky bluegrass.

Introduction

Research to evaluate herbicides for control of roughstalk bluegrass in Kentucky bluegrass was initiated in 1993. A wide variety of herbicide combinations were screened during the 1994-1995 season. The objective of this project was to evaluate in replicated plots the most promising fall and spring-applied herbicides from 1994-1995. Herbicides evaluated in combination included Sinbar, Karmex, Beacon, Goal, Lexone, and Assert.

Methods and Materials

Combinations of Sinbar at 0.25 and 0.5 lb/a, Karmex at 2 lb/a, Beacon at 0.38 and 0.75 oz/a, Lexone at 2.7 and 5.3 oz/a, Goal at 15 fl oz/a, and Assert at 0.75 pt/a were applied October 14 to two roughstalk bluegrass fields to evaluate control of established and seedling plants, and to two Kentucky bluegrass fields to determine crop injury. Spring applications were made April 3 and April 26. Treatments included a spring application of Sinbar at 0.25 lb/a plus Karmex at 2 lb/a following a fall application of Lexone at 2.7 oz/a plus Goal at 15 fl oz./a, a split application of Beacon at 0.38 oz/a, and split application of Beacon at 0.38 oz/a plus Karmex at 0.5 lb/a followed by Beacon at 0.38 oz/a. Treatments were applied with a CO, pressurized, hand-held, boom sprayer at 40 psi and 20 gal/a water. Plots 10 ft x 20 ft were replicated three times in a randomized complete block design. A nonionic surfactant was applied at 1 qt/100 gal in combination with all herbicides. Visual evaluation for control of established and seedling roughstalk bluegrass, and crop injury based on reduction in plant biomass to Kentucky bluegrass was conducted January 5, 1996. Pre-harvest evaluation of percent reduction in seed set was conducted for roughstalk bluegrass June 23, and for Kentucky bluegrass June 26, 1996.

Results and Discussion

Seedling roughstalk bluegrass was more easily controlled than established plants. Of the fall-applied herbicides Sinbar at 0.5 lb/a plus Karmex at 2 lb/a provided the greatest control of roughstalk seedling and established plants at 89 percent and 39 percent control, respectively. Beacon at 0.38 oz/a plus Karmex at 2 lb/a provided 86 percent control of roughstalk seedling plants but only 9 percent control of established plants. Treatments that included Goal produced 20 percent injury to Kentucky bluegrass, more than any other treatment. Spring split-applications of Beacon at 0.38 oz/a provided 81 percent control while Beacon at 0.38 oz/a plus Karmex at 0.5 lb/a provided 84 percent control of seedling and established roughstalk bluegrass.

No difference among treatments could be detected in seed set prior to harvest for either roughstalk bluegrass or Kentucky bluegrass, except for the two spring split-applications. Despite the serious damage, what plants remained did establish seed heads. Presumably they were late enough that they did not produce viable seed.

Table 1. Effect of fall-applied herbicide applications October 14, 1996 on established and seedling roughstalk bluegrass at two locations, and crop injury to Kentucky bluegrass at two locations near Madras and Culver, Oregon.

Treatments'	Rate	Roughstalk bluegrass control'		Injury to Kentucky bluegrass
		Seedling plants	Establis plant	
	(product/a)	(percent)		
Sinbar	0.5 lb			
+ Karmex	2.0 lb	89 a[3]	39 a	9
Sinbar	0.5 lb			
+ Beacon	0.38 oz	83 a	3 b	12
Sinbar	0.5 lb			
+ Goal	15 oz	80 a	8 b	20
Sinbar	0.5 lb			
+ Lexone	5.3 oz	80 a	17 ab	7
Sinbar	0.5 lb			
+ Assert	0.75 lb	70 a	15 ab	15
Sinbar	0.25 lb			
+ Karmex	2.0 lb	80 a	20 ab	9
Lexone	2.7 oz			
+ Goal	15 oz	74 a	1 b	20
Beacon	0.38 oz			
+ Karmex	2.0 lb	86 a	9 b	10
Untreated		0 b	0 b	0
				n.s.

' Visual evaluations were conducted January 5, 1996.
[2] Treatments were applied October 14, 1995.
[3] Mean separation with Honesty Significant Difference at P 0.05.