EVALUATION OF HERBICIDES FOR CONTROL OF ROUGH BLUEGRASS AND INJURY TO KENTUCKY BLUEGRASS, 1998

Marvin Butler, Les Gilmore, Al Short, and Neysa Farris

Abstract

This is the fifth year of a multiyear study to evaluate herbicides for control of rough bluegrass *(Poa trivialis)* and injury to Kentucky bluegrass *(Poa pratensis).* Herbicides were applied to two rough bluegrass varieties and one Kentucky bluegrass field. The most effective treatment was fall-applied Sinbar (terbacil) plus Karmex (diuron) followed by a spring application of Beacon (primisulfuron-methyl) in March or April. A single fall application of Sinbar plus Karmex provided better control of rough bluegrass than Beacon plus Karmex. There were no consistent differences between Beacon applied in March or April, or as a slit application in March and April. Milestone does not appear to be an effective tool for control of rough bluegrass in Kentucky bluegrass.

Introduction

Research to evaluate herbicides for control of rough bluegrass in Kentucky bluegrass was begun in 1993. A wide variety of herbicide combinations were screened early in the process. In subsequent years, the objective has been to evaluate treatments with the most promise, and to fine-tune application rates and timings of the most effective herbicide combinations. In addition, several new herbicides have been evaluated as they have become available.

The objectives of the research this year was to determining the best timing and the rate of a spring application of Beacon following a fall application of Sinbar plus Karmex or Beacon plus Karmex. Timings evaluated were a single treatment in March or April, or a split application made in both March and April. A new herbicide, Milestone, was included in the evaluation at two application rates.

Methods and Materials

Plots were placed in three commercial grass seed fields to evaluate control of 'Cypress' and `Saber II' rough bluegrass and injury to 'Crest' Kentucky bluegrass. Treatments included a November 4 application of Sinbar at 0.5 lb/a plus Karmex at 2 lb/a or Beacon at 0.38 oz/a plus Karmex at 2 lb/a alone, or followed by a spring application of Beacon. Beacon was applied either March 30, April 24, or both at 0.76 oz/a following Sinbar plus Karmex or at 0.38 oz/a following Beacon plus Karmex. New product evaluations included a November 4 application of Milestone at 2 oz/a and 4 oz/a.

Treatments were applied with a CO_2 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.

A visual evaluation for the percentage of reduction in biomass to established plants was conducted March 24 on rough bluegrass. Preharvest evaluations of the percentage of reduction in seed set were conducted on both rough bluegrass and Kentucky bluegrass June 4.

Results and Discussion

Data on the effect of herbicide applications for control of rough bluegrass is provided in Table 1, and data on the reduction in yield to Kentucky bluegrass is shown in Table 2. In comparing fall applications alone, Sinbar plus Karmex provided better control of rough bluegrass than Beacon plus Karmex. Beacon applied in either March or April provided greater control of rough bluegrass following the fall application of Sinbar plus Karmex than following Beacon plus Karmex. However, the least injury to Kentucky bluegrass was with Beacon applied in March following Beacon plus Karmex in November. There were no consistent differences between March and April applications of Beacon. Beacon applied as a split application in March and April did not increase control of rough bluegrass, but may have caused slightly less injury to Kentucky bluegrass.

Milestone at 4 oz/a compared to 2 oz/a provided more control of rough bluegrass but caused more injury to Kentucky bluegrass. Early plant injury to rough bluegrass declined later in the season causing less reduction in seed set.

The most effective treatment for control of rough bluegrass continues to be a fall application of Sinbar at 0.5 lb/a plus Karmex at 2 lb/a followed by a Beacon application in late March or early April.

Table 1. Effect of herbicides applied November 4, 1997 alone or followed by Beacon applied March 30 and/or April 24 to rough bluegrass. Crop reduction was evaluated March 24, 1998 and yield reduction was evaluated June 4, 1998.

	Treatments		Crop Reduction'		Yield Reduction'	
		Rate	Fuzzy	Saber II	Fuzzy	Saber II
		product/a			percent	
1.	Sinbar	0.5 lb	83 a[3]	50 ab	60 ab	30
	+Karmex	2.0 lb				
2.	Beacon	0.76 oz	60 a	47 ab	45 b	10
	+Karmex	2.0 lb				
3.	Sinbar	0.5 lb	87 a	47 ab	97 a	60
	+Karmex	2.0 lb				
	Beacon (Mar)	0.76 oz				
4.	Sinbar	0.5 lb	87 a	60 ab	93 a	37
	+Karmex	2.0 lb				
	Beacon (Apr)	0.76 oz				
5.	Sinbar	0.5 lb	82 a	57 ab	98 a	33
	+Karmex	2.0 lb				
	Beacon (Mar)	0.38 oz				
	Beacon (Apr)	0.38 oz				
6.	Beacon	0.38 oz	33 b	32 ab	55 ab	33
	+Karmex	2.0 lb				
	Beacon (Mar)	0.38 oz				
7.	Beacon	0.38 oz	22 be	15 b	65 ab	3
	+Karmex	2.0 lb				
	Beacon (Apr)	0.38 oz				
8.	Milestone	2.0 oz	15 bc	12 b	35 bc	20
9.	Milestone	4.0 oz	85 a	80 a	35 bc	40
10.	Untreated		0 c	0 b	0 c	0
						NS

'Data based on visual evaluation of reduction in biomass.
'Data based on visual evaluation of reduction in seed set.
'Mean separation with Student-Newman-Keuls ($P < 0.05$).

Table 2. Effect of herbicides applied November 4, 1997 alone or followed by Beacon applied March 30 and/or April 24 to Kentucky bluegrass. Yield reduction was evaluated June 4, 1998.

	Treatments	Rate	Yield Reduction' Crest Kentucky bluegrass	
		product/a	------ percent -----	
1.	Sinbar	0.5 lb	53	a[2]
	+Karmex	2.0 lb		
2.	Beacon	0.76 oz	57	a
	+Karmex	2.0 lb		
3.	Sinbar	0.5 lb	60	a
	+Karmex	2.0 lb		
	Beacon (Mar)	0.76 oz		
4.	Sinbar	0.5 lb	53	a
	+Karmex	2.0 lb		
	Beacon (Apr)	0.76 oz		
5.	Sinbar	0.5 lb	43	a
	+Karmex	2.0 lb		
	Beacon (Mar)	0.38 oz		
	Beacon (Apr)	0.38 oz		
6.	Beacon	0.38 oz	13	b
	+Karmex	2.0 lb		
	Beacon (Mar)	0.38 oz		
7.	Beacon	0.38 oz	50	a
	+Karmex	2.0 lb		
	Beacon (Apr)	0.38 oz		
8.	Milestone	2.0 oz	33	a
9.	Milestone	4.0 oz	40	a
10.	Untreated			0 b

'Data based on visual evaluation of reduction in seed set.

[2]Mean separation with Student-Newman-Keuls ($P < 0.05$).