EVALUATION OF PREEMERGENCE HERBICIDE APPLICATIONS ON SEED ONION AND RADISH, 1996

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Abstract

Herbicides pendimethalin (Prowl, Cyanamid), propachlor (Ramrod, Monsanto), and alachlor (Lasso, Monsanto) were applied post-plant, preemergence to seed radish and at partial emergence to seed onion near Madras, Oregon. Prowl provided 100 percent control of common lambsquarters and 99 percent control of redroot pigweed, but caused injury to radishes. Ramrod provided 90 percent control of redroot pigweed,and inadequate control of common lambsquarters and grasses. Lasso provided 98 percent control of redroot pigweed and 96 percent control of grasses, with lower levels of crop injury.

Introduction

Research in Europe has indicated the potential for use of Lasso in seed radish. Prowl is currently registered for postemergence application to seed onions and radish, and Ramrod for preemergence application to seed onions. There has been industry interest in the potential for use of Prowl preemergence on these two crops. The objective of this project was to evaluate post-plant, preemergence application of Prowl, Ramrod, and Lasso to seed onions and radishes grown commercially near Madras, Oregon.

Methods and Materials

Prowl at 2 pt/a, Ramrod at 5 qt/a, and Lasso at 2.5 pt/a were applied to seed onions and radishes July 27 with a CO_2 pressurized, hand-held boom sprayer at 40 psi and 20 gal/a water. At the time of application radish plants had not emerged, but onions and weeds were partially emerged. Plots 18 ft x 25 ft were replicated three times in a randomized complete block design. Treatments were evaluated August 14 for control of redroot pigweed, common lambsquarters, and grass species. Reduction in stand and crop injury were rated visually.

Results and Discussion

Prowl provided 100 percent control of common lambsquarters, 99 percent control of redroot pigweed, was ineffective on grass species, and reduced the radish stand by 53 percent and radish growth by 67 percent. Ramrod provided 90 percent control of redroot pigweed, did not provide adequate control of common lambsquarters at 63 percent or grass species at 70 percent, and reduced the onion stand by 47 percent and onion growth by 30 percent. Onion injury from Ramrod is likely the result of seedling emergence at the time of application. Lasso provided 98 percent control of redroot pigweed, 96 percent control of grass species, and 83 percent reduction or less in onion or radish stands and

Table 1. Effect of post-plant, preemergence herbicide applications July 27, 1996 on commercial seed onion and radish near Madras, Oregon.

		Weed control'			Onion		Radish	
Treatments[2]	Rate	Redroot pigweed	Common lambsquarters	Grass species	Reduced stand	Reduced growth	Reduced stand	Reduced growth
	(product/a)				(percent)			
Prowl	2 pt	99 a[3]	100 a	20 b	17 b	13 ab	53 a	67 a
Ramrod	5 qt	90 a	63 b	70 a	47 a	30 a	0 b	13 b
Lasso	2.5 pt	98 b	83 ab	96 a	13 b	13 ab	0 b	13 b
Untreated		0 c	0 c	0 b	0 b	0 b	0 b	0 b

' Visual evaluation was conducted August 14, 1996.
[2] Treatments applied July 27, 1996.
[3] Mean separation with Honestly Significant Difference at P 0.05.