

EVALUATION OF PREEMERGENCE HERBICIDE APPLICATION TO SEED CARROTS, 1996

Marvin Butler, Bruce Martens, Les Gilmore and Al Short

Abstract

Two herbicides, linuron (Lorox, Du Pont) and pendimethalin (Prowl, Cyanamid), were applied preemergence alone, and in combination, to seed carrots at two locations near Madras, Oregon. Lorox at 2 lb/a provided 100 percent control of common groundsel, China lettuce, redroot pigweed, and hairy nightshade at the Harris location and China lettuce, redroot pigweed, and buttonweed at the Boyle location. Prowl provided inadequate control of common groundsel, and less overall control than either rate of Lorox. There was no reduction in carrot stand and no visible crop injury.

Introduction

Seed carrot producers in central Oregon have depended on Treflan applied preplant for preemergence weed control. Research was conducted during the 1995 season to evaluate Lorox, Eptam, and Prowl when applied preemergence. The objective of this project was to evaluate preemergence application of Lorox and Prowl alone, and in combination, to seed carrots.

Methods and Materials

Lorox at 1 and 2 lb/a, Prowl at 2 pt/a, and Lorox at 1 lb/a plus Prowl at 2 pt/a were applied to seed carrots grown commercially at two locations near Madras, Oregon. Treatments were applied preemergence on August 16, 1996 with a CO₂ 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. Treatments were evaluated

September 20, 1996 by counting the number of weeds per plot for common groundsel, China lettuce, redroot pigweed, and hairy nightshade at the Harris location, and common groundsel, China lettuce, redroot pigweed, and buttonweed at the Boyle location. Reduction in stand and crop were rated visually.

Results and Discussion

Lorox at 2 lb/a provided 100 percent control of all four weed species evaluated at the Harris location, and 93 percent control of weeds evaluated at the Boyle location. Lorox at 1 lb/a provided 100 percent control of redroot pigweed at both locations, but was weak on common groundsel. Prowl provided less weed control than Lorox, with inadequate control of common groundsel. There was no reduction in carrot stand and no visible crop injury.

Table 1. Effect of preemergence herbicide application on seed carrots at the Harris location near Madras, Oregon, 1996.

Treatments ²	Rate	Non-controlled Weeds ¹					Total weeds
		Common groundsel	China lettuce	Redroot pigweed	Hairy nightshade		
	(product/acre)	(plants per plot) -----					
Lorox	1 lb	1.7 ab ³	0.3 a	0	0	2	a
Lorox	2 lb	0 a	0 a	0	0	0	a
Prowl	2 pt	4 b	1.7 a	2	0		7.7 a
Lorox + Prowl	1 lb 2 pt	0.3 a	0.3 a	0	0		0.7 a
Untreated		4 b	5 b	8.3 n.s.	0.7 n.s.	18	b

¹ Visual evaluation was conducted September 20, 1996.

² Treatments applied August 16, 1996.

³ Mean separation with Honestly Significant Difference at P 0.05.

Table 2. Effect of preemergence herbicide application on seed carrots at the Boyle location near Madras, Oregon, 1996.

Treatments ²	Rate	Non-controlled Weeds ¹					Total weeds
		Common groundsel	China lettuce	Buttonweed	Redroot pigweed		
	(product/a)	(plants per plot) -----					
Lorox	1 lb	1.8	1	0 a ³	0 a	2.8	a
Lorox	2 lb	0.8	0 0	a	0 a	0.8	a
Prowl	2 pt	3	1 0	a	0 a	4	a
Lorox + Prowl	1 lb 2 pt	3.3	0 0	a	0 a	3.3	a
Untreated		3.5 n.s.	1.8 13 n.s.	b	5.5 b	12	b

¹ Visual evaluation was conducted September 20, 1996.

² Treatments applied August 16, 1996.

³ Mean separation with Honestly Significant Difference at P 0.05.