

EVALUATION OF PREEMERGENCE HERBICIDES IN SEED ONIONS, 2001

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Abstract

Prowl[®] was applied alone at two rates and in combination with Dacthal[®] to onions grown for seed near Madras, Oregon, in 2001. All herbicide treatments significantly reduced the number of pigweed, watergrass, nightshade, and lambsquarters plants compared to untreated plots. The trend indicated Dacthal may improve pigweed control, while increasing Prowl from 1 pint/acre to 2 pint/acre may increase the control of buttonweed.

Introduction

With limited weed control tools for use in onion seed production, the search continues for additional herbicides that may be effective. This project focused on the preemergence application of Prowl alone and in combination with Dacthal. Dacthal is currently one of the few herbicides registered for use on seed onions.

Methods and Materials

Herbicide treatments were Prowl at 1 pint/acre, Prowl at 2 pint/acre, and Prowl at 1 pint/acre plus Dacthal at 7 lb/acre. Herbicides were applied July 13 after planting but before the first irrigation. Treatments were applied with a CO₂-powered boom sprayer at 40 psi and 20 gal/acre water. Plots 9 ft x 15 ft were replicated three times in a randomized complete block design. Plots were evaluated August 8 for control of pigweed, watergrass, buttonweed, nightshade, and lambsquarters.

Results and Discussion

Prowl at 1 pint/acre, 2 pint/acre, or 1 pint/acre in combination with Dacthal at 7 lb/acre significantly reduced the number of pigweed, watergrass, nightshade, and lambsquarters plants compared to untreated plots (Table 1). None of the treatments controlled buttonweed. The trend indicated that the addition of Dacthal to Prowl improved pigweed control, while not providing additional control of watergrass, buttonweed, nightshade, or lambsquarters. Prowl at 2 pint/acre compared to 1 pint/acre did not significantly increase weed control in this trial, but the trend was for potentially increasing control of buttonweed. No detectable crop stunting was observed.

Table 1. Effect of herbicides applied to seed onions July 13 and evaluated August 8, 2001, near Madras, Oregon.

Treatment	Rate Prod/acre	Weed control								
		Pigweed	Watergrass	Buttonweed	Nightshade	Lambsquarters	-----Number of plants-----			
Prowl	1.0 pt	21.3	b ¹	1.3	b	8.0	1.0	ab	0	b
Prowl	2.0 pt	19.3	b	0	b	2.7	0	b	0	b
Prowl	1.0 pt	10.0	b	5.3	b	2.3	0	b	0	b
+Dacthal	+7.0 lb									
Untreated	----	82.3	a	32.3	a	9.7	2.7	a	3.0	a
						NS				

¹Mean separation with Student-Newman-Kuels (SNK) Test at $P \leq 0.05$.