# EVALUATION OF PRE-EMERGENCE HERBICIDE APPLICATIONS TO SEED CARROTS, 1995

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## Abstract

Three herbicides, linuron (Lorox, Du Pont), pendimethalin (Prowl, Cyanamid), and EPTC (Eptam, ZENECA) were applied alone, and in combination, post-plant, pre-emergence in a commercial carrot seed field near Madras, Oregon. Lorox provided excellent control of all six weed species evaluated. Prowl performed well, except for moderate control of buttonweed and weak control on groundsel. Eptam provided inadequate control, with the exception of moderate control of groundsel at 7 pt/a. None of the treatments reduced stand, caused stunting, or were phytotoxic to the crop.

## Introduction

Carrot seed production is a major component of the central Oregon vegetable seed industry. Of the nearly 5,000 acres of vegetable seed grown in the area, about 1,500 acres are seed carrots with a value of over $5 million. Few herbicides are registered for use on carrots grown for seed, and efficacy data are required as the first step in the registration of new materials.

## Methods and Materials

Evaluation of the herbicides Lorox, Prowl, and Eptam alone, and in combination, was conducted in a commercial seed carrot field in the Mud Springs area near Madras, Oregon. Application was made post-plant, pre-emergence September 8, 1995 to 10 ft x 20 ft replicated plots with a $CO_2$ pressurized, hand-held, boom sprayer at 40 psi and 20 gal/a of water, using 8002 TeeJet nozzles. The trial area was sprinkler-irrigated several times after planting and prior to application of herbicides, and again four hours after application. Herbicide treatments were evaluated November 2, 1995 for percent control of buttonweed, China lettuce, lambsquarters, common groundsel, flixweed, and purple mustard, as well as reduction in stand, stunting, and phytotoxicity.

## Results and Discussion

Average distribution of weed species in the untreated plots was 37 percent buttonweed, 22 percent China lettuce, 13 percent flixweed, 11 percent common groundsel, 10 percent purple mustard, and 7 percent lambsquarters. Lorox provided excellent control of all six species evaluated (Table 1). Prowl perfoimed well on China lettuce, lambsquarters, flixweed, and purple mustard, with moderate control of buttonweed, and weak control of common groundsel. Eptam provided inadequate control, with the exception of 90 percent control of common groundsel at 7 pt/a. No reduction in stand, stunting, or phytotoxicity were visually detected.

Table 1. Evaluation of pre-emergence herbicide application on seed carrots in a commercial field in the Mud Springs area near Madras, Oregon, 1995.

| Materials | Rates | Buttonweed | China Lettuce | Lambsquarter | Groundsel | Flixweed | Purple Mustard |
|---|---|---|---|---|---|---|---|
| | (product/a) | (percent control) --- | | | | | |
| Lorox | 2 lb | 100 a[1] | 100 a | 100 a | 100 a | 100 a | 100 a |
| Eptam | 4 pt | 0 b | 0 b | 67 ab | 80 ab | 33 b | 13 b |
| Eptam | 7 pt | 0 b | 0 b | 0 b | 90 a | 0 b | 57 ab |
| Lorax | 2 lb | | | | | | |
| + Eptam | 4 pt | 99 a | 100 a | 100 a | 100 a | 100 a | 100 a |
| Prowl | 2 pt | 93 a | 100 a | 100 a | 50 b | 100 a | 100 a |
| Untreated | | 0 b | 0 b | 0 b | 0 c | 0 b | 0 b |

Mean separation with the T-method at P 0.05