EVALUATION OF MESSENGER® ON SEED CARROTS, 2001

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Introduction

Seed carrots, along with garlic seed, provide a large portion of the agricultural income in the Madras and Culver areas of central Oregon. Diseases such as *Alternaria* and *Xanthomonas* are becoming an increasing problem as the industry tries to maximize production acres and maintain yields. If Messenger® can increase disease resistance, or otherwise increase seed yield, it would generate a large amount of industry and grower interest.

Methods and Materials

Small plots were established to evaluate the effect of Messenger in a commercial seed carrot field north of Madras. A 20 percent concentration applied three times at either a 14- or 21-day interval was compared to untreated plants. Plots one row by 10 ft were replicated three times in a randomized complete block design. Plot size was minimized because of the difficulty associated with hand harvesting and processing a large amount of biomass.

Applications were initiated when the plants began to bolt (May 29) and continued through early bloom (June 26 or July 10, depending on application interval). Treatments were applied with a CO_2-pressurized, hand-held, boom sprayer at 40 psi and 20 gal/acre water. Distilled water and a separate Messenger packet was used for each application date.

Plots were hand harvested on September 10, just prior to commercial harvest of the field. Plants were removed from the soil, placed in canvas bags, and hung to dry in a three-sided shed at the Central Oregon Agricultural Research Center (COARC). Seed was cleaned with equipment at COARC and the seed-conditioning lab at the USDA-Agricultural Research Service Forage Seed Production Research Center in Corvallis. Seed weight and percent germination were determined at COARC.

Results and Discussion

There was inadequate disease pressure to evaluate plots for either *Alternaria* or *Xanthamonas*, common foliar diseases on seed carrots grown in central Oregon (Table 1). This was despite hail damage to the plots May 23 prior to application of Messenger. This early hail damage would not be expected to affect yield, but would provide disease entry points.

Statistical evaluation of the rough clean seed weights, percent germination, and 1,000 seed weight indicate no differences between treated and untreated plots.

Table 1. Effect of Messenger applied at 20 percent concentration to seed carrots near Madras, Oregon, 2001.

Treatment	Application	Yield	Germination	1,000 seed weight
20% product	----------dates----------	----lb/acre----	----%----	----g----
Messenger	May 29, June 12, June 26	1207.3[1]	78	1.07
Messenger	May 29, June 20, July 10	1265.6	86	1.10
Untreated	----------	1359.4	81	1.08
		NS	NS	NS

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