

Project Number: 13K 3419 7228

Title: Weed control in vegetable seed crops.

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Reporting Period: 2003-04

Accomplishments: Six vegetable seed studies were conducted in 2003: two studies each in table beet/Swiss chard seed and spinach seed, one in cabbage seed, and one in Apiaceae seed crops. A second cabbage seed trial is currently underway. Weed control and/or crop injury was measured in each study. Table beet, Swiss chard, spinach, and cabbage seed crops were also included for evaluation of rotational crop sensitivity to Sandea (halosulfuron) used in cucumber. Two trials are being conducted at WSU Mount Vernon from 2001 through 2004.

Registrations for Ro-Neet (cycloate) in spinach, table beet, and Swiss chard seed crops were retained after the former distributor (Cedar) went bankrupt. Helm Agro agreed to take on the formerly registered uses of Ro-Neet. In addition, a new registration for Dual Magnum (s-metolachlor) in spinach seed was obtained from Syngenta.

Results: All results will be presented at the Western Washington Horticultural Association meeting in January, 2004.

Table Beets/Swiss chard seed. In separate trials, table beet roots and overwintered beet/Swiss chard seedlings were transplanted May 8 and 12, 2003, respectively, at WSU Mount Vernon. PPI treatments were applied just prior to transplanting, PRE on May 13, and POST on June 17. Weed control and crop injury for both trials were estimated June 2 and July 1. Three representative beet plants per plot were cut in late September then dried in the field/greenhouse. Seed has been threshed but not yet sized or weighed. Both trials were randomized complete blocks with four replicates.

Spinach seed. Spinach was seeded May 21 and June 26, 2003 at WSU Mount Vernon. In the first trial, PPI, PRE, and POST herbicides were applied May 20, May 24-26, and June 18-19 for the first trial, respectively. In the second trial, PPI and PRE herbicides were applied June 25 and July 9, respectively. Weed control and crop injury were estimated June 12 and July 1 in the first trial, and August 7 in the second trial. Due to poor seedling emergence, the second trial was discontinued following the August rating. Both trials were randomized complete blocks with four replicates.

Apiaceae seed crops. Early-flowering and long-standing cilantro, coriander, carrot, dill, parsnip, and parsley were seeded into separate rows June 2 and 3, 2003 at WSU Mount Vernon. Plants were sprayed POST with one of fifteen herbicides at two growth stages: early (cotyledon to 2-leaf seedlings) and late (3- to 4-leaf seedlings). Early applications were made July 1 and late applications July 7. Visible crop injury was estimated at approximately 3 and 10 days after treatment for both timings. Plants were then grown until 4 weeks after treatment (July 29 and August 4 for early and late POST applications, respectively) at which time the plants in 1 m of row were cut at the soil surface, and dry weights determined.

Cabbage seed. Cabbage seedlings (2- to 3-leaf) were transplanted at WSU Mount Vernon September 6, 2002 and at-transplant treatments applied September 6 and 9. Split-plot, POST herbicides were applied to all plots September 27, and crop injury/weed control were estimated October 11 and January 3. POST herbicides were applied a second time March 24 and weed control and crop injury estimated April 25. Four cabbage plants were selected at late bud stage of growth and biomass was determined April 30. The trial was a split-plot, randomized complete block with three replicates. The 2003-04 cabbage seed trial is very similar to the 2002-03 and was transplanted September 9. At-transplant treatments were made September 8-9 and POST herbicides October 10-13. POST treatments included shielded flaming, and vinegar was applied over-the-top at transplanting and with POST treatments. These plots will be evaluated for weed control and crop injury over the course of winter/spring and crop biomass determined as before.