

Organic Weed Control Methods

Row Method

- 101 Spring-tine implement: Williams Tool System (Lely-type weeder with tool bar for cultivator knives and sweeps) attached to compact tractor
- 102 Control: Hand weeding, including pulling weeds, hoeing with gooseneck hoe and wheel hoe
- 103 Flame with backpack flamer
- 104 Corn gluten meal, OMRI certified, application rate of approx. 40 lbs/1000 sf

All four rows received hand weeding prior to harvest in order to achieve low weed populations, resulting in a clean harvest with a cutter bar. Rows 101, 103 and 104 also received one of the weed control methods, while row 102 received only hand weeding. A farmhand was hired both seasons to help with the work related to the Western SARE project, including weeding, trials, and harvest samples. Sixteen months of record-keeping provided data for the project.

Prior to First Harvest, 2009

Trial Row	Yield of 5 Samples (Fresh Wt. lbs)	Method	Setup Time (min)	Labor for Application of Method (min/row)	Remaining Hand-weeding Labor (min/row)
101	50.9	Spring Tine Implement	0	0	138
102	54.1	Control	0	n/a	138
103	63.9	Flame	0	0	138
104	47	Corn Gluten Meal	0	0	138

No application of trial methods, only hand weeding before harvest. Dates of hand-weeding: 5/17, 6/16, 6/30, 7/2 Time (minutes) represents the average per row after time on all rows was totaled.)

Preceding Second Harvest 2009

Trial Row	Yield of 5 Samples (Fresh Wt. lbs)	Method	Setup Time (min total)	Labor for Application of Method (min/row)	Remaining Hand-weeding Labor (min/row)
101	31.2	Spring Tine Implement	222	3	0
102	35.9	Control	0	n/a	12
103	33.3	Flame	15	9	0
104	22	Corn Gluten Meal	38	33	0

Spring tines set to 2 notches less than maximum pressure, no cultivator knives, 6 mph, single pass.

Hand weeding with hoe/wheel hoe and hand pulling, Dates of application: 7/23/09

Backpack flamer on visible weeds 8/10/09

Prepare row by hand weeding 9/10/09 then spread corn gluten meal by hand 40 lb/1000 sf, rake in by hand

Preceding First Harvest of 2010

Trial Row	Yield of 5 Samples (Fresh Wt. lbs.)	Method	Setup Time(min)	Labor for Application of Method (min/row)	Remaining Hand-weeding Labor (min/row)
101	37.7	Spring Tine Implement	60	4	43
102	20.8	Control	0	n/a	61
103	24.6	Flame	5	13	46
104	23.2	Corn Gluten Meal	5	19	38

Spring tine implement same application as before, but with pumpkin knives cultivating between rows 6/11/10

Hand weeded with gooseneck hoe 6/28/10 and 8/6/10, same day as remaining weeding on other trial rows.

Backpack flamer as before 3/20/10, 5/18/10.

Corn Gluten Meal: Apply 40 lb/1000 sf by hand and rake in by hand 3/20/10

Preceding Second Harvest of 2010

Trial Row	Yield of 5 Samples (Fresh Wt. lbs.)	Method	Setup Time(min)	Labor for Application of Method (min/row)	Remaining Hand-weeding Labor (min/row)
101	76.8	Spring Tine Implement	20	13	11
102	51.2	Control	0	n/a	42
103	55.2	Flame	5	11	16
104	43	Corn Gluten Meal	40	7	17

Spring Tine Implement: Same settings as before but double pass no pumpkin knives 8/11/10 and 8/31/10

Hand weeding with hoe on control row on 8/11/10, 9/24/10

Backpack flamer on 8/11/10

Corn Gluten Meal: Apply 37 lb/1000 sf with push drop spreader and mix in using spring tine implement single pass 8/11/10