

## **2010 Weed Control Trials**

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**Methods:** Trial was established at the USDA Spence Research Station on a site with Chualar gravelly sandy loam. The preplant incorporated (PPI) materials were applied on June 22 and mulched into the beds on the same day with a power bed shaper. The post plant preemergence (PRE) applications were applied on June 24 after planting and incorporated with sprinkler irrigation. All materials were applied with two passes of a 8008E single tip wand pressurized at 30 psi with a CO<sub>2</sub> backpack sprayer applying 72 gallons of water per acre. Each plot was one 40-inch bed wide by 25 feet long. Weed evaluations were conducted on two dates and phytotoxicity on one date. Harvest evaluations were conducted on September 2 by harvesting all heads in the plots, weighing total yield and trimming to measure mean weight of marketable heads.

**Results:** The weed spectrum at this site was dominated by burr clover and malva due to prior history of fumigation for strawberry production. Also present were groundsel and sow thistle, but in general, the weed spectrum was not typical of Salinas Valley vegetable ground. None of the weed control materials provided exception weed control, but Dual Magnum PRE had the lowest number of burr clover and total weeds on both evaluation dates (Table 1). However, Dual Magnum PRE had unacceptable phytotoxicity as did Prowl H2O PRE. Both Dual Magnum and Prowl H2O had greater safety PPI. Treflan and Balan were both safe PRE and PPI as was Kerb and Prefar PRE.

Prior to thinning, both checks, Treflan and Balan PRE and PPI had the greatest number of plants/A (Table 2). Post thinning, all treatments had statistically similar numbers of plants except, Dual Magnum PRE and Prowl H2O PRE which had significant stand reduction. At harvest, the check and the standard herbicides, Kerb and Prefar, had the greatest head weight. Greatest tonnage was measured in both checks, Kerb PRE and Treflan, Prowl H2O and Balan applied PPI.

Table 1. Weed counts (per 4 ft<sup>2</sup>) on two dates and phytotoxicity on July 16

Material	Lbs a.i./A	Material/A	Application	July 8				July 15				July 16
				Burr Clover	Malva	Other Weeds <sup>1</sup>	Total weeds	Burr Clover	Malva	Other Weeds <sup>1</sup>	Total weeds	Phyto
Check	----	----	----	5.3	0.3	3.0	8.5	5.0	0.0	2.0	7.0	0.0
Hand weeded	----	----	----	4.3	0.3	1.0	5.5	4.5	0.0	2.5	7.0	0.0
Kerb	1.2	2.4 lbs	PRE	1.5	0.5	0.5	2.5	3.5	0.0	2.0	5.5	0.0
Prefar	5	5.0 qts	PRE	5.3	0.8	0.0	6.0	5.3	0.0	2.8	8.0	0.0
Dual Magnum	0.5	0.52 pt	PPI	4.0	0.3	1.0	5.3	4.0	0.0	2.8	6.8	1.3
Dual Magnum	0.5	0.52 pt	PRE	1.5	0.0	0.5	2.0	1.5	0.3	1.0	2.8	4.5
Treflan	0.5	1.0 pt	PPI	4.3	0.0	2.0	6.3	4.0	0.0	3.8	7.8	0.0
Treflan	0.5	1.0 pt	PRE	5.5	0.3	0.3	6.0	5.0	0.0	3.0	8.0	0.0
Prowl H2O	0.7	1.5 pt	PPI	4.5	0.0	1.8	6.3	5.3	0.3	2.3	7.8	1.5
Prowl H2O	0.7	1.5 pt	PRE	3.3	0.3	1.0	4.5	2.8	0.3	0.8	3.8	8.5
Balan	1.2	2.0 lbs	PPI	4.0	0.0	1.0	5.0	3.3	0.0	2.5	5.8	0.0
Balan	1.2	2.0 lbs	PRE	5.5	0.3	1.5	7.3	4.3	0.5	3.5	8.3	0.0
			Pr>Treat	0.085	0.405	0.028	0.026	0.317	0.353	0.271	0.168	<0.001
			Pr>Block	0.997	0.953	0.065	0.536	0.937	0.885	0.261	0.543	0.550
			LSD <sub>0.05</sub>	NS	NS	1.6	3.4	NS	NS	NS	NS	0.5

1 - Other weeds included: groundsel, sow thistle and hairy nightshade

Table 2 Prethinning stand count on July 19 and yield evaluations on September 2, 2010

Material	Lbs a.i./A	Material/A	Application	Plant/A prethinning	Plants/A at harvest	Untrimmed Lbs/plant	Yield (tons/A)	Trimmed <sup>1</sup> Lbs/plant
Check	----	----	----	60,244.1	22,325.1	1.74	19.41	1.25
Hand weeded	----	----	----	60,374.7	25,290.1	1.71	21.62	1.28
Kerb	1.2	2.4 lbs	PRE	56,977.0	23,720.4	1.69	20.09	1.29
Prefar	5	5.0 qts	PRE	46,783.9	20,406.5	1.63	16.38	1.23
Dual Magnum	0.5	0.52 pt	PPI	53,187.3	23,197.1	1.60	18.47	1.20
Dual Magnum	0.5	0.52 pt	PRE	7,710.2	17,790.3	0.89	7.87	1.14
Treflan	0.5	1.0 pt	PPI	61,420.2	24,418.0	1.56	19.00	1.19
Treflan	0.5	1.0 pt	PRE	61,681.6	24,069.2	1.54	18.55	1.16
Prowl H2O	0.7	1.5 pt	PPI	59,721.3	24,243.6	1.61	19.52	1.16
Prowl H2O	0.7	1.5 pt	PRE	0.0	0.0	0.00	0.00	1.14
Balan	1.2	2.0 lbs	PPI	65,079.3	24,418.0	1.62	19.78	1.19
Balan	1.2	2.0 lbs	PRE	60,766.8	23,546.0	1.53	18.00	1.28
			Pr>Treat	<0.001	<0.001	<0.001	<0.001	<0.001
			Pr>Block	0.156	0.543	0.482	0.104	0.230
			LSD <sub>0.05</sub>	3099	2.1	5.9	0.16	0.10

1 – trimmed to a marketable size