

California Pepper Commission – Complete Final Report, 2013

Title: Preemergence Weed Control Trials in Peppers

Principle Investigators:

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Timeline: March 1, 2013 to February 28, 2014

Objective

Examine pre-transplant (herbicides for weed control).

Summary: This trial provided an excellent opportunity to evaluate the efficacy and safety of a number of materials for use on bell peppers. Zeus was used under a research authorization. Zeus had the lowest number of malva plants per plot. This is a key weed in pepper production fields in the coastal production district. There was some indication that 4.5 oz/A of Zeus caused delay in the maturity of bell peppers as there were fewer red fruit at harvest, but no overall reduction in yield. Zeus should be further evaluated in 2014 to further test safety and efficacy against problematic weeds.

Methods: The trial was conducted on a commercial bell pepper farm east of Gilroy on a site with Pleasanton loam soil. Treatments were applied to shaped beds prior to transplanting on May 15. The bell pepper variety Baron was transplanted the next morning on May 16 in two seedlines on the beds; transplants were watered with sprinkler irrigation immediately after planting. Each plot was one 40-inch bed wide by 20 feet long and replicated three times in a randomized complete block design. The two Zeus treatments were also applied under a Research Authorization two two beds by the length of the field. All materials were applied with two passes of a one-tip wand with an 8008E nozzle applying the equivalent of 69 gallons per acre. See tables for evaluations and dates.

Table 1. Phytotoxicity rating and weed counts (no./20 ft²) on June 10

Treatment	Material/A	Phyto-toxicity	Malva	Sow Thistle	Night-shade	Purslane	Pigweed	Groundsel	Other weeds	Total Weeds
Untreated	----	0.0	11.0	9.8	5.0	0.5	0.3	1.3	2.8	30.5
Dual Magnum 7.62	1.67 pt	0.0	4.8	0.3	0.5	0.5	0.3	0.3	0.3	6.8
Prowl H2O	2.00 pt	0.0	7.0	2.8	3.0	0.0	0.0	1.3	1.0	15.0
Dual Magnum 7.62 Prowl H2O	1.67 2.00	0.0	6.6	0.3	0.3	0.0	0.0	0.0	0.3	6.8
Outlook 6.0	14.0 oz	1.5	5.8	0.5	1.0	1.5	0.3	0.0	0.5	9.5
Zeus 4F	3.0 oz	1.5	0.8	0.8	4.3	0.0	0.0	0.0	0.0	5.8
Zeus 4F	4.5 oz	2.5	0.5	0.0	3.8	0.3	0.0	0.0	0.3	4.8
Nortron 4SC	24 oz	3.0	14.5	3.3	0.8	0.3	0.0	0.5	0.3	19.5
	Pr>F treat	<.0001	0.2673	<.0001	0.6049	0.0690	0.6430	0.0366	0.1272	0.0214
	LSD 0.05	1.1	NS	3.4	NS	NS	NS	1.0	NS	15.0

Table 2. Yield evaluations (lbs/10 plants) on October 8.

Treatment	Material/A	Red fruit		Green fruit		Culled fruit		Total fruit	
		No.	lbs	No.	lbs	No.	lbs	No.	lbs
Untreated	----	43.0	22.7	3.7	1.4	2.3	0.9	49.0	25.0
Dual Magnum 7.62	1.67 pt	42.3	20.8	4.3	1.5	2.0	0.9	48.7	23.1
Prowl H2O	2.00 pt	46.7	23.1	2.0	0.5	2.3	1.1	51.0	24.6
Dual Magnum 7.62 Prowl H2O	1.67 2.00	43.0	22.2	2.7	0.8	1.7	0.6	47.3	23.6
Outlook 6.0	14.0 oz	37.0	19.9	7.7	2.7	1.0	0.5	45.7	23.0
Zeus 4F	3.0 oz	43.7	20.7	5.7	1.7	1.7	0.5	51.0	22.9
Zeus 4F	4.5 oz	36.0	18.6	10.0	3.0	2.0	0.5	48.0	22.1
Nortron 4SC	24 oz	46.3	22.8	6.3	2.0	1.7	0.5	54.3	25.3
	Pr>F treat	0.2328	0.0488	0.2239	0.1746	0.991	0.9514	0.398	0.1142
	LSD 0.05	NS	2.9	NS	NS	NS	NS	NS	NS