2011 Chili Pepper Weed Control Trial

Richard Smith, Farm Advisor
University of California Cooperative Extension, Monterey County

Methods: These evaluations were conducted to find layby weed control materials that can provide late-season weed control in peppers. ***Trial No. 1:*** was conducted with a cooperating grower in Soledad. Following layby weed control to remove existing weeds, Chateau at 4.0 material/A was injected into a sprinkler system. On July 8 the material was injected into two 30 foot long sections of sprinkler pipe with two sprinkler headsfor 20 minutes and then the irrigation continued for an additional 60 minutes to clean out the system and wash the Chateau from the leaves. The next day, the plot was evaluated for phytotoxicity. However, the results were unambiguous, as the phytotoxicity was too severe and the evaluation was discontinued (see photos below). The plot was examined several times following the application, and interestingly the plants recovered to some extent and yielded a much reduced amount of peppers. **Trial No. 2:** The trial was conducted in a in a commercial chili pepper field in Soledad. Materials were applied on July 7 to peppers following layby weeding to remove existing weeds. The field had been direct seeded in May with a proprietary dried chili pepper variety. The soil at the site was Chualar loam. See tables for evaluations and dates.

Results: ***Trial No. 2:*** There was a low weed population at the trial site. All weed control materials provided improved weed control over the untreated control on the first two weed control evaluation dates (Table 1). Zeus caused burning on the foliage where the spray contacted the leaf tissue, but it was the only material that controlled malva. By the third evaluation date five weeks after the layby application, weed pressure was still low, but it was still possible to see that all materials provided improved weed control over the untreated control (Table 2). Burn on the lower leaves from the Zeus application was still evident on this evaluation date. There were no differences in yield in any of the treatments in the number or weight of reds, greens, breakers or culled fruit (Table 3).

Pepper plants in Trial No. 1 following sprinkler application of Chateau: individual plant (left) and plants in the foreground (right) and untreated plants in the background

Table 1. Weed counts (25 ft^2) and phytotoxicity evaluation on July 25 and August 4.

Treatment	Material/A	Phyto[1]	Shepherd's purse	grass	malva	Total weeds	Phyto[1]	Shepherd's purse	malva	Sow thistle	Total weeds
Outlook 6.0	14 oz	0.0	0.0	0.0	0.7	0.7	0.0	0.3	1.0	0.0	1.3
Dual Magnum 7.63	1.5 pint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	1.7
Prowl H2O	2.0 pint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.7	1.0
Dual Magnum 7.63 Prowl H20	1.5 pint 2.0 pint	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3
Zeus 4.0	4.8 oz	3.3	0.0	0.0	0.3	0.3	4.0	0.0	0.0	0.0	0.0
Untreated	---	0.0	1.0	0.3	1.0	2.3	0.0	1.7	4.3	0.0	6.0
	Pr>trt	NA	NA	NA	0.707	0.220	NA	0.088	0.102	NA	0.079
	Pr>block	NA	NA	NA	0.834	0.623	NA	0.724	0.171	NA	0.188
	LSD(0.05)	NA	NA	NA	NS	NS	NA	NS	NS	NA	NS

1 – Scale: 0 = no crop damage to 10 = crop dead

Table 2. Weed counts (25 ft^2) and phytotoxicity evaluation on August 11

Treatment	Material/A	Phyto[1]	Shepherd's purse	malva	Sow thistle	Total weeds
Outlook 6.0	14 oz	0.0	0.0	1.0	0.3	1.3
Dual Magnum 7.63	1.5 pint	0.0	0.0	1.3	0.0	1.3
Prowl H2O	2.0 pint	0.0	0.0	0.0	0.0	0.0
Dual Magnum 7.63 Prowl H20	1.5 pint 2.0 pint	0.0	0.0	0.0	0.0	0.0
Zeus 4.0	4.8 oz	3.0	0.3	1.0	0.0	1.3
Untreated	---	0.0	2.7	4.0	1.0	7.7
	Pr>trt	NA	0.050	0.033	0.002	0.001
	Pr>block	NA	0.280	0.606	0.402	0.376
	LSD(0.05)	NA	1.9	2.4	0.4	2.9

Table 3. Yield evaluation on November 2

Treatment	Material/A	Reds			Greens		Breakers		Culls		Percent marketable fruit
		Number per plot	Fruit wt per plot (lbs)	Mean Fruit wt (lb)	Number per plot	Mean Fruit wt (lb)	Number per plot	Mean Fruit wt (lb)	Number per plot	Mean Fruit wt (lb)	
Outlook 6.0	14 oz	78.7	7.7	0.10	3.3	0.2	5.7	0.4	4.0	0.1	86.0
Dual Magnum 7.63	1.5 pint	78.3	7.0	0.09	4.0	0.2	2.7	0.2	3.7	0.2	88.9
Prowl H2O	2.0 pint	75.7	7.7	0.10	9.3	0.7	4.0	0.3	6.3	0.2	80.0
Dual Magnum 7.63 Prowl H20	1.5 pint 2.0 pint	73.3	7.0	0.10	5.3	0.4	7.0	0.6	6.3	0.1	79.9
Zeus 4.0	4.8 oz	62.3	6.7	0.11	4.7	0.4	5.3	0.5	2.7	0.1	83.4
Untreated	---	74.3	7.6	0.10	3.7	0.3	7.7	0.6	5.0	0.1	81.9
	Pr>trt	0.487	0.754	0.518	0.826	0.706	0.284	0.299	0.458	0.094	0.741
	Pr>block	0.531	0.507	0.904	0.814	0.822	0.088	0.039	0.250	0.178	0.888
	LSD(0.05)	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS