

Celery Weed Control Study 2015

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

Methods: Trial was conducted in a commercial celery production field near King City and evaluated pre and post transplant herbicide treatments on weed control and safety on celery. Pretransplant applications were made to shaped beds on March 26 and the field was transplanted on March 27. Sprinkler irrigation was applied within four hours after transplanting to set the plants and incorporate the pretransplant herbicide treatments. Post transplant applications were made on April 15 (19 days after transplanting) and were irrigated with sprinklers 2 days following treatments. Each plot was one 40-inch bed wide by 10 feet long and replicated four times in a randomized complete block design. All treatments were applied with 1 pass of a one tip wand with an 8008EVS nozzle at 30 psi applying the equivalent of 42 GPA. Weeds counts per plot were made four times and the data was converted to weeds/m². The plots were weeded on May 6 and weeding time and number of weeds removed per plot were recorded. Phytotoxicity of the treatments was measured on four evaluation dates according the following scale: 0 = no crop damage to 10 = crop dead. Harvest evaluations of 15 heads per plot were made on July 1 and converted to number of plants per acre. Soil type was Rincon clay loam (pH 7.47; CEC 29.3; organic matter 1.98; percent sand 36, silt 37 and clay 27) and the variety was 'Conquistador'. See tables for treatments, evaluations and dates.

Results: Weed pressure was light at this site and no phytotoxicity was observed in any treatment on the April 14 evaluation date (Table 1). On the April 23 evaluation date (8 days after the post emergence applications) significant phytotoxicity was observed in the Zidua preemergence treatment. Good weed control was observed in both Prowl treatments, Zidua preemergence, Caparol and Chateau treatments. The same trend in phytotoxicity was observed on May 1 (Table 2), but the best weed control was observed in the Prowl 2.0 lbs a.i./A and Chateau treatments. On May 6, a stand count was made and no difference in the number of plants in each treatment was observed. All treatments reduced weeding time relative to the untreated control, but both Prowl treatments, Zidua preemergence and Chateau had the lowest weeding time. The preemergence application of Zidua had significantly lower yield than all other treatments.

Table 1. Number of weeds (m²) and phytotoxicity ratings on April 14 and 23

Treatment	Lbs a.i./A	Application Timing	April 14				April 23				
			Night- shade	Malva	Total Weeds	Phyto	Night- shade	Malva	Other weeds	Total Weeds	Phyto
Prowl H2O 3.8 Fb Prowl H2O 3.8	1.5 1.5	pre post	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Prowl H2O 3.8 Fb Prowl H2O 3.8	2.0 2.0	pre post	0.0	0.3	0.3	0.0	0.3	0.3	0.0	0.6	0.0
Zidua 85WG ¹	0.07	post	1.9	0.0	1.9	0.0	1.6	0.6	0.3	2.6	1.0
Zidua 85WG	0.133	pre	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	4.2
Zeus 4F	0.125	pre	0.0	0.3	0.3	0.0	0.7	0.6	0.6	1.9	0.0
Caparol 4L	1.5	pre	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6	0.0
Chateau 51WG	0.094	pre	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Untreated	---	---	1.0	0.7	1.6	0.0	4.5	1.3	0.0	5.8	0.0
Pr>F treat			0.0044	0.2839	0.0089	NA	0.0002	0.0364	0.1558	0.0000	0.0000
LSD 0.05			1.1	NS	1.2	NA	0.6	0.28	NS	0.7	0.2

Table 2. Number of weeds (m²) and phytotoxicity ratings on May 1; crop stand and weeding time on May 6 and yield on July 1

Treatment	Lbs a.i./A	Application Timing	May 1					May 6				July 1
			Night-shade	Malva	Other weeds	Total weeds	Phyto	Celery plants/A	Weed time hrs/A	No. Weeds removed	Phyto	Harvest Lbs/A
Prowl H2O 3.8	1.5	pre	0.0	0.3	0.0	0.3	0.4	41,336.0	2.9	0.0	0.0	105,466
Fb Prowl H2O 3.8	1.5	post										
Prowl H2O 3.8	2.0	pre	0.0	0.0	0.0	0.0	0.0	41,597.6	2.8	0.0	0.2	110,698
Fb Prowl H2O 3.8	2.0	post										
Zidua 85WG ¹	0.07	post	1.3	0.3	0.0	1.6	0.5	42,120.8	3.6	1.0	1.4	96,537
Zidua 85WG	0.133	pre	1.0	0.0	0.0	1.0	3.4	40,812.7	2.3	1.2	5.2	51,190
Zeus 4F	0.125	pre	1.9	1.0	0.3	3.2	0.2	40,289.5	4.2	2.2	0.0	104,844
Caparol 4L	1.5	pre	1.9	1.6	0.0	3.6	0.0	41,074.3	3.8	2.0	0.0	102,686
Chateau 51WG	0.094	pre	0.0	0.0	0.0	0.0	0.1	41,074.3	2.8	0.0	0.2	99,339
Untreated	---	---	5.5	1.6	0.0	7.1	0.0	40,027.9	6.0	4.8	0.0	100,026
Pr>F treat			0.0194	0.0086	0.0098	0.0008	0.0001	0.4254	0.0006	0.0064	0.0000	0.0005
LSD 0.05			1.1	0.4	0.2	1.3	0.2	NS	0.5	0.9	0.2	7,489