

2006 Pepper Weed Control

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Summary: The trial was located on a site with a good spectrum of weeds. All pretransplant treatments provided excellent weed control for 28 days following transplanting and significantly reduced weeding time. All layby applications were effective and low weed pressure was observed in all preplant followed by layby treatments 85 days following the layby application. Postemergence applications were evaluated and provided good but not long-lasting weed control. All postemergence applications were safe on the pepper crop. Promising pretransplant materials include Goal Tender, Outlook and Spartan. V-10142 is a promising postemergence material.

Methods: The following trial was established in cooperation with Peter Iverson in Soledad. The pretransplant applications were made on shaped beds on May 13; peppers were transplanted on May 15. Layby applications were made on June 12. Each plot was one 40-inch bed wide by 20 feet long and replicated three times in a randomized complete block design. Pretransplant treatments were applied to the entire bed in 74 gallons of water per acre with two passes of 1-8008E teejet nozzle at 30 psi. Layby applications were made with directed spray to the base of the plant. Two passes of a one nozzle wand with an 8008E teejet nozzle per seed line at 30 psi applying 148 gallons of water per acre. Soil type = Mocho silt loam. Variety = Pimento. See table for treatments and evaluation dates.

Results: There was good weed pressure in the trial and a good spectrum of weed species. All pretransplant applications provided good weed control on the May 30 (15 days after transplanting) evaluation date (Table 1). There was notable leaf crinkling in the Goal Tender treatment, but this is not surprising in that the material was applied 2 days prior to transplanting, as opposed to 15 to 30 days prior to transplanting as was done in the past. Weed control by the pretransplant applications continued to be good on the June 12 (28 days after transplanting) evaluation date (Table 2). There was significant phytotoxicity in the Goal Tender and Spartan pretransplant treatments. All weed control treatments reduced weeding time significantly over the untreated control. The postemergence were reasonable safe on the peppers (Table 3). These treatments did not have any preemergent herbicides applied and the weeds were good size at the time of application (June 12). All material provided good weed control but the higher rates of V-10142 reduced weeding time over the lowest rate (0.10 lb a.i./A). All Dual Magnum, Goal Tender and Outlook pretransplant applications followed by the various layby treatments provided good weed control on September 5 (85 days following layby application) (Table 4). The postemergence treatments alone did not have as good of long-term weed control. The harvest data illustrated differences among the treatments. A sensitive indicator of negative impacts of a treatment was the percent of red fruit (Table 5). The treatments with the highest percent red fruit were untreated, all V-10142 treatments and Outlook (pretransplant). Spartan as a postemergence layby treatment was damaging to the crop. In the 2005 trial we observed that postemergence applications of Outlook were damaging to the crop. There is a trend in number of total marketable yield that indicates reduced yield within a pretransplant treatment when followed by a postemergence layby application of Outlook vs Dual Magnum.

Table 1. Weeds number (per 20 ft²) and phytotoxicity ratings on May 30, 2006. Evaluation of preemergence treatments only.

Transplant Application	Lbs a.i./A	Layby Application	Lbs a.i./A	Sow Thistle	Chenopods	Nightshade	Total Weeds	Phyto
Dual Magnum 7.62	1.43	Dacthal 75W (standard layby)	7.00	0.3	0.0	0.0	0.3	0.0
Dual Magnum 7.62	1.43	Dual Magnum 7.62	1.43	0.0	0.3	0.0	0.3	0.0
Dual Magnum 7.62	1.43	Outlook 6.0	0.60	0.0	0.3	0.0	0.3	0.0
Goal Tender 4F	0.50	Dual Magnum 7.62	1.43	0.0	0.0	0.0	0.0	2.7
Goal Tender 4F	0.50	Outlook 6.0	0.60	0.0	0.0	0.0	0.0	2.7
Outlook 6.0	0.60	Dual Magnum 7.62	1.43	0.0	0.0	0.0	0.0	0.7
Outlook 6.0	0.60	Outlook 6.0	0.60	0.0	0.0	0.3	0.3	0.7
Spartan 75DF	0.10	----		0.3	0.7	0.3	1.3	2.3
Spartan 75DF	0.10	Spartan 75DF	0.10	0.0	0.0	0.0	0.0	1.7
----	----	Sandea (standard post) NIS	0.047 0.25%	----	----	----	----	----
----	----	V-10142 COC	0.10 1.0%	----	----	----	----	----
----	----	V-10142 COC	0.20 1.0%	----	----	----	----	----
----	----	V-10142 COC	0.30 1.0%	----	----	----	----	----
Untreated	---	Untreated	---	11.0	5.7	7.0	25.3	0.0
LSD (0.05)				4.7	4.0	3.4	7.4	1.0

Table 2. Weeds number (per 30 ft²) and phytotoxicity ratings on June 12, 2006. Evaluation of preemergence treatments only.

Transplant Application	Lbs a.i./A	Layby Application	Lbs a.i./A	Sow Thistle	Cheno-pods	Night-shade	Total Weeds	Phyto	Time to weed Hrs/A
Dual Magnum 7.62	1.43	Dacthal 75W (standard layby)	7.00	3.7	2.9	1.0	8.4	0.0	8.9
Dual Magnum 7.62	1.43	Dual Magnum 7.62	1.43	1.0	1.9	0.0	3.1	0.0	6.3
Dual Magnum 7.62	1.43	Outlook 6.0	0.60	1.4	2.9	1.3	6.4	0.0	8.0
Goal Tender 4F	0.50	Dual Magnum 7.62	1.43	2.4	0.0	1.0	3.4	2.9	6.4
Goal Tender 4F	0.50	Outlook 6.0	0.60	1.4	0.2	0.0	1.4	3.2	5.4
Outlook 6.0	0.60	Dual Magnum 7.62	1.43	1.0	0.2	0.3	1.4	0.2	4.9
Outlook 6.0	0.60	Outlook 6.0	0.60	2.7	1.5	1.0	5.1	0.9	8.5
Spartan 75DF	0.10	----		10.3	0.8	1.0	12.3	2.5	9.8
Spartan 75DF	0.10	Spartan 75DF	0.10	8.5	0.0	0.0	9.3	2.3	8.8
----	----	Sandea (standard post) NIS	0.047 0.25%	----	----	----	----	----	----
----	----	V-10142 COC	0.10 1.0%	----	----	----	----	----	----
----	----	V-10142 COC	0.20 1.0%	----	----	----	----	----	----
----	----	V-10142 COC	0.30 1.0%	----	----	----	----	----	----
Untreated	---	Untreated	---	46.4	18.2	13.3	85.4	0.0	53.5
LSD (0.05)				12.2	8.8	4.4	8.2	1.3	4.1

Table 3. Weeds ratings¹ of post emergence and phytotoxicity ratings of pre and post emergence treatments on June 19; and time to weed on July 6, 2006

Transplant Application	Lbs a.i./A	Layby Application	Lbs a.i./A	Sow Thistle	Cheno-pods	Night-shade	Purslane	Malva	Phyto	Time to Weed hrs/A
Dual Magnum 7.62	1.43	Dacthal 75W (standard layby)	7.00	----	----	----	----	----	0.3	----
Dual Magnum 7.62	1.43	Dual Magnum 7.62	1.43	----	----	----	----	----	0.0	----
Dual Magnum 7.62	1.43	Outlook 6.0	0.60	----	----	----	----	----	0.3	----
Goal Tender 4F	0.50	Dual Magnum 7.62	1.43	----	----	----	----	----	2.0	----
Goal Tender 4F	0.50	Outlook 6.0	0.60	----	----	----	----	----	2.3	----
Outlook 6.0	0.60	Dual Magnum 7.62	1.43	----	----	----	----	----	0.7	----
Outlook 6.0	0.60	Outlook 6.0	0.60	----	----	----	----	----	0.7	----
Spartan 75DF	0.10	----		----	----	----	----	----	3.3	----
Spartan 75DF	0.10	Spartan 75DF	0.10	----	----	----	----	----	7.3	----
----	----	Sandea (standard post) NIS	0.047 0.25%	5.3	7.3	0.7	1.7	4.7	1.7	13.5
----	----	V-10142 COC	0.10 1.0%	3.7	6.3	0.3	1.0	2.7	0.3	23.5
----	----	V-10142 COC	0.20 1.0%	3.3	6.7	0.0	1.7	3.3	0.3	14.2
----	----	V-10142 COC	0.30 1.0%	4.7	7.7	0.0	2.3	3.7	0.7	17.1
Untreated	---	Untreated	---	----	----	----	----	----	0.0	----
LSD (0.05)				0.9	n.s.	n.s.	1.1	n.s.	1.4	7.9

1 – Weed control scale: 0 = no weed control to 10 weeds completely dead.

Table 4. Number of weeds (30 ft²) on September 5. Evaluation of late season pre and postemergence treatments.

Transplant Application	Lbs a.i./A	Layby Application	Lbs a.i./A	Sow Thistle	Cheno-pods	Night-shade	Purslane	Malva	Total weeds
Dual Magnum 7.62	1.43	Dacthal 75W (standard layby)	7.00	3.0	0.0	0.0	0.0	0.0	3.0
Dual Magnum 7.62	1.43	Dual Magnum 7.62	1.43	0.0	0.0	0.0	0.0	0.0	0.0
Dual Magnum 7.62	1.43	Outlook 6.0	0.60	1.0	0.3	0.0	0.0	0.0	1.3
Goal Tender 4F	0.50	Dual Magnum 7.62	1.43	0.7	0.0	0.0	0.0	0.0	0.7
Goal Tender 4F	0.50	Outlook 6.0	0.60	0.0	0.0	0.0	0.0	0.0	0.0
Outlook 6.0	0.60	Dual Magnum 7.62	1.43	0.0	0.0	0.0	0.0	0.0	0.0
Outlook 6.0	0.60	Outlook 6.0	0.60	0.0	0.0	0.0	0.0	0.0	0.0
Spartan 75DF	0.10	----		2.0	0.0	0.0	0.0	0.0	2.0
Spartan 75DF	0.10	Spartan 75DF	0.10	1.0	0.0	0.3	0.0	0.0	1.3
----	----	Sandea (standard post) NIS	0.047 0.25%	3.0	0.7	1.0	0.0	0.0	4.6
----	----	V-10142 COC	0.10 1.0%	2.3	0.0	1.0	1.3	0.3	5.0
----	----	V-10142 COC	0.20 1.0%	5.0	0.0	0.0	0.0	0.0	5.0
----	----	V-10142 COC	0.30 1.0%	3.7	0.0	0.3	0.3	0.0	4.3
Untreated	---	Untreated	---	3.3	1.0	1.0	0.3	0.3	6.0
LSD (0.05)				1.9	0.9	0.9	0.7	n.s.	2.1

1 – Weed control scale: 0 = no weed control to 10 weeds completely dead.

Table 5. Number (1000's), weight (T/A) and mean fruit weight of red, green, intermediate (turning red), culls and marketable fruit on October 6, 2006

Transplant Application Material a.i./A	Layby Application Material a.i./A	Red No.	Percent No. Red	Red Wt.	Green No.	Green Wt.	Inter No.	Inter Wt.	Cull No.	Cull Wt.	Total Mkt No.	Total Mkt Wt.	Mean Wt. grams
Dual Magnum 1.43	Dacthal	60.54	32.7	10.38	104.54	11.12	23.52	4.01	11.32	1.24	188.62	25.51	125.8
Dual Magnum 1.43	Dual Magnum 1.43	76.23	38.6	12.23	106.72	10.75	23.08	3.98	17.42	1.89	206.04	26.96	119.3
Dual Magnum 1.43	Outlook 0.60	59.67	39.3	9.81	84.07	9.88	14.81	2.37	16.55	6.22	158.56	22.07	128.1
Goal Tender 0.50	Dual Magnum 1.43	57.49	30.8	9.42	111.51	13.06	19.60	3.37	10.45	0.95	188.62	25.85	123.6
Goal Tender 0.50	Outlook 0.60	58.37	32.4	9.86	104.11	13.12	17.86	3.02	12.19	1.17	180.34	26.01	130.3
Outlook 0.60	Dual Magnum 1.43	81.02	41.3	13.36	86.68	9.40	27.87	4.07	8.71	0.89	195.59	26.83	124.9
Outlook 0.60	Outlook 0.60	76.65	45.3	12.16	74.05	8.16	17.42	2.93	14.37	1.52	168.14	23.26	125.8
Spartan 0.10	----	69.26	35.4	10.92	101.49	11.10	29.62	4.78	9.58	1.17	200.38	26.81	121.0
Spartan 0.10	Spartan 0.10	18.73	9.4	3.35	179.47	20.56	12.19	1.65	1.74	0.15	210.40	25.57	110.7
----	Sandea 0.047 NIS 0.25%	68.38	33.9	12.58	118.92	14.62	15.68	3.00	5.22	0.71	202.99	30.21	134.9
----	V-10142 0.10 COC 1.0%	85.81	48.5	13.60	71.87	8.03	19.60	3.02	13.50	1.50	177.29	24.66	125.9
----	V-10142 0.20 COC 1.0%	79.27	41.2	12.92	95.40	9.70	20.90	3.28	12.19	1.30	195.59	25.92	120.7
----	V-10142 0.30 COC 1.0%	94.08	49.1	16.06	78.84	8.46	18.73	3.06	6.08	0.76	191.67	27.60	130.4
Untreated	Untreated	68.38	43.5	10.01	70.56	7.87	17.42	2.48	19.16	1.78	156.38	20.37	118.6
LSD (0.05)		17.57	11.5	2.71	48.53	5.42	12.01	2.04	12.16	3.89	52.27	6.96	17.4