

**Robocrop/Tillett Vision-Guided CULTIVATION Evaluations on BELL Pepper
ANNUAL REPORT - 2010**

Michelle Le Strange, UCCE Tulare & Kings Counties

Objective: to evaluate the effectiveness of the Robo/Tillet cultivator in Transplanted BELL PEPPERS for intra-row WEEDING compared to standard cultivation practices

Table 1. 2010 Trial Methods and Event Dates for Transplanted Bell Pepper.

UC WSREC - Five Points Fresno County	2010 Bell Pepper (Transplanted)
Planting	One 40-inch bed x 150 ft of row (3.3' x 150' = 495 ft ²)
Transplanted:	5/18/10
Cultivar:	BARON
Soil Type:	Panoche Clay Loam
Irrigation Method:	Sprinkler initially, then weekly furrow irrigations
Herbicide Applications	
(PRE) Date/Herbicide/Rate:	5/17/10 Dual Magnum @ 1.43 lb ai/A (1.5 pts/A)
(POST) Date/Herbicide/Rate:	6/17/10 Dual Magnum @1.43 lb ai/A (1.5 pts/A)
Cultivation Date:	Standard: 6/6/10 Tillett: 6/4/10
Evaluations	
Crop Stand:	PRE Cultivation: 6/3/10 POST Cultivation: 6/17/10
Weed Counts:	PRE Cultivation: 6/3/10 POST Cultivation: 7/10/10
Time to Weed:	June 17, 2010
Yield (Marketable crop)	08/6/10

Table 2. Effect of cultivation type, thinning/weeding procedures and sequential applications of Dual Magnum on weed control, crop stand, time to weed and marketable yield in transplanted bell peppers.

Cultivation type	Thinning / weeding procedure	Dual Magnum & Dual Magnum rates (lb ai/A)	Pre cultiv. weed counts (no./150ft ²)	Post cultiv. weed counts (no./150ft ²)	Pre cultiv. crop stand (no./150ft)	Post cultiv. crop stand (no./150ft)	Weeding time (min/150ft ²)	Weeding time (hrs/A)	MARKET YIELD Tons/Acre
Tillett	Hand weed	1.43 & 1.43	330.00	18.00	180.25	170.75	4.50	6.60	38.36
Standard	Hand weed	1.43 & 1.43	772.50	27.25	185.25	184.25	8.81	12.93	44.52
Tillett	No hand weed	1.43 & 1.43	345.25	53.25	178.75	158.75	0	0	31.99
Standard	No hand weed	1.43 & 1.43	341.25	143.00	179.25	179.25	0	0	29.21
Tillett	Hand weed	0	4387.50	78.75	182.25	164.75	12.50	18.34	38.19
Standard	Hand weed	0	4211.25	102.75	186.75	172.75	18.06	26.50	24.94
Tillett	No hand weed	0	4995.00	189.50	188.75	171.25	0	0	7.38
Standard	No hand weed	0	5388.75	213.25	183.00	177.25	0	0	1.95
LSD (P=0.05)									
Treatment Prob (F)						0.0212			
<i>Main effects of cultivation type</i>									
Tillett			2514.44	84.88	182.50	166.38	4.75	6.73	7.25
Standard			2678.43	121.56	183.56	178.38	7.22	10.36	6.29
LSD (P=0.05)									
Treatment Prob (F)			0.3790	0.0690	0.3543		0.16	0.16	0.2569
<i>Main effects of thinning/weeding procedure</i>									
	Hand weed		2425.31	56.68	183.63	173.13	10.97	16.09	9.13
	No hand weed		2767.56	149.75	182.44	171.63	0	1.00	4.41
LSD (P=0.05)									
Treatment Prob (F)			0.1270	0.0001			0.00021	0.0002	0.0024
<i>Main effects of Dual Magnum</i>									
		1.43 & 1.43	447.25	60.38	180.9	167.75	3.83	5.38	9.00
		0	4745.63	146.06	185.2	165.00	8.14	11.71	4.53
LSD (P=0.05)									
Treatment Prob (F)			0.000	0.000	0.1152		0.0000	0.0000	0.007
CV%			38.66	36.95	3.92	4.16	30.15	30.97	41.25