

## 2007 Direct Seeded Lettuce Weed Control Trials

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**Methods:** *Trial No. 1:* Conducted at the Hartnell East Campus Research Facility. Post plant preemergence applications were applied following planting on August 7 and irrigation was started immediately. Post plant applications were made on August 24. Each plot was two 40-inch beds wide by 30 feet long and replicated four times in a randomized complete block design; on one bed the head lettuce variety Sniper was planted and on the other the romaine variety Braveheart. Materials were applied in 72 gallons of water per acre using a CO<sub>2</sub> backpack at 30 psi using two passes of a one-nozzle wand with an 8008E tip. Photographic analysis of ground cover by weeds was measured by taking four photographs of a 1 ft<sup>2</sup> quadrat per plot. Weeds in the photos were analyzed with the Autocad 2004 program by marking each weed and estimating ground cover of the weeds in relation to total ground cover. *Trial No. 2:* The lettuce trial was conducted in cooperation with Ed Mora of D'Arrigo Brothers in Castroville on a site with Clear Lake clay soil. Post plant preemergence applications were made on following planting on August 24 and postemergence applications were made on September 19. Each plot was one 40-inch bed wide by 20 feet long. There were four replications arranged in a randomized complete block design. Materials were applied in 72 gallons of water per acre using a CO<sub>2</sub> backpack at 30 psi using two passes of a one-nozzle wand with an 8008E tip. The romaine variety was PIC-MF. Yield was evaluated by harvesting a 15 foot long strip from the middle of the plot and counting and weighing unstripped heads. See tables for details on weed and phytotoxicity evaluations.

**Results:** *Trial No. 1:* All formulations and rates of Kerb controlled shepherd's purse (Table 1); however, based on numbers Kerb did not control nettle, but the nettles were stunted and weakened as measured by photographic analysis. Prefar provided good control of nettle and purslane, but shepherd's purse was not controlled and grew well and had high ground cover. There was no phytotoxicity by any of the materials or rates. There was no affect of any treatment on the yield of romaine (Table 2). In the head lettuce yield evaluation, the Kerb 3.3SC pre and post plant applications had the lowest mean head weight. *Trial No. 2:* There was low weed pressure in this trial and there were slight effects on weed populations in the trial (Table 3). There were no impacts on phytotoxicity by any of the treatments. None of the treatments had yields lower than the untreated control (Table 4).

Table 1. Trial No. 1: Combined weed counts of head and romaine lettuce (weeds per 6 ft<sup>2</sup>) and phytotoxicity rating on August 28; photographic analysis of ground cover by weeds on September 7.

Treatments	Lbs a.i./A	Material/A	Timing	Sow Thistle	Purslane	Groundsel	Shepherd's Purse	Nettle	Total Weeds	Ground cover cm <sup>2</sup> /m <sup>2</sup>	Phyto <sup>1</sup> Head	Phyto <sup>1</sup> Romaine
Untreated	----	----	---	2.9	12.1	3.4	17.1	21.8	61.8	494.9	0.0	0.0
Kerb 50W	1.0	2.0 lbs	Preplant	4.4	0.1	2.3	5.1	18.3	31.3	164.9	0.0	0.0
Kerb 50W	2.0	4.0 lbs	Preplant	2.0	0.1	1.6	1.8	11.1	18.5	82.9	0.0	0.0
Kerb 3.3SC	1.0	2.4 pints	Preplant	2.3	0.0	1.0	3.9	21.9	32.0	119.5	0.0	0.0
Kerb 3.3SC	2.0	4.8 pints	Preplant	3.6	0.1	1.0	4.5	20.3	31.0	93.1	0.0	0.0
Kerb 50W	1.0	2.0 lbs	Preplant + post <sup>1</sup>	1.6	0.4	0.6	2.5	19.0	25.5	79.7	0.0	0.5
Kerb 50W	2.0	4.0 lbs	Preplant + post <sup>1</sup>	2.1	0.4	0.9	3.6	13.0	21.1	81.3	0.0	0.5
Kerb 3.3SC	1.0	2.4 pints	Preplant + post <sup>1</sup>	4.8	0.5	0.9	2.9	17.4	27.5	121.4	0.1	0.3
Kerb 3.3SC	2.0	4.8 pints	Preplant + post <sup>1</sup>	4.3	0.4	1.5	2.9	16.3	27.3	107.9	0.0	0.3
Prefar 4EC	6.0	1.5 gallons	Preplant	1.5	1.3	1.4	15.3	4.9	29.5	288.5	0.0	0.0
LSD (0.05)				3.1	2.3	1.6	4.8	9.5	12.6	93.3	n.s.	n.s.

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

Table 2. Trial No. 1: Yield evaluations of romaine on October 9 and head lettuce on October 23

Treatments	Lbs a.i./A	Material/A	Timing	Romaine			Head Lettuce		
				Heads/Acre	Yield Ton/A	Mean Head wt (lbs)	Heads/Acre	Yield Ton/A	Mean Head wt (lbs)
Untreated	----	----	---	25,701	8.65	0.69	27,879	24.30	1.81
Kerb 50W	1.0	2.0 lbs	Preplant	28,532	11.65	0.81	25,483	27.99	2.36
Kerb 50W	2.0	4.0 lbs	Preplant	25,265	9.48	0.75	27,879	25.02	1.80
Kerb 3.3SC	1.0	2.4 pints	Preplant	25,047	10.19	0.81	27,879	23.37	1.87
Kerb 3.3SC	2.0	4.8 pints	Preplant	25,919	10.67	0.82	28,968	27.99	1.94
Kerb 50W	1.0	2.0 lbs	Preplant + post <sup>1</sup>	28,532	11.20	0.78	26,136	24.22	1.87
Kerb 50W	2.0	4.0 lbs	Preplant + post <sup>1</sup>	27,879	10.52	0.77	28,968	26.58	1.83
Kerb 3.3SC	1.0	2.4 pints	Preplant + post <sup>1</sup>	26,354	8.90	0.67	28,096	23.84	1.67
Kerb 3.3SC	2.0	4.8 pints	Preplant + post <sup>1</sup>	25,918	8.76	0.67	27,661	23.63	1.69
Prefar 4EC	6.0	1.5 gallons	Preplant	25,047	11.79	0.93	24,829	28.91	2.34
LSD (0.05)				n.s.	n.s.	n.s.	n.s.	n.s.	0.59

Table 3. Trial No. 2: Weed counts (weeds per 20 ft<sup>2</sup>) and phytotoxicity rating on September 11.

Treatments	Lbs a.i./A	Material/A	Timing	Mustard	Chickweed	Swine Cress	Total	Phyto
Untreated	----	----	---	1.0	0.8	1.0	3.3	0.0
Kerb 50W	1.0	2.0 lbs	Preplant	1.3	0.3	1.0	2.5	0.3
Kerb 50W	2.0	4.0 lbs	Preplant	1.0	0.0	0.3	1.5	0.3
Kerb 3.3SC	1.0	2.4 pints	Preplant	1.8	0.0	1.0	3.8	0.0
Kerb 3.3SC	2.0	4.8 pints	Preplant	1.5	0.0	0.8	2.8	0.5
Kerb 50W	1.0	2.0 lbs	Preplant + post <sup>1</sup>	2.3	0.8	0.8	4.3	0.0
Kerb 50W	2.0	4.0 lbs	Preplant + post <sup>1</sup>	1.8	0.0	1.0	3.3	0.3
Kerb 3.3SC	1.0	2.4 pints	Preplant + post <sup>1</sup>	1.3	0.5	1.5	3.8	0.3
Kerb 3.3SC	2.0	4.8 pints	Preplant + post <sup>1</sup>	1.5	0.0	0.5	3.0	0.0
Prefar 4EC	6.0	1.5 gallons	Preplant	1.8	0.5	0.8	3.0	0.0
LSD (0.05)				n.s.	n.s.	1.2	2.5	n.s.

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

Table 4. Trial No. 2: Yield evaluations October 30

Treatments	Lbs a.i./A	Material/A	Timing	Heads/ Acre	Yield Ton/A	Mean Head wt (lbs)
Untreated	----	----	---	29,076	18.61	1.28
Kerb 50W	1.0	2.0 lbs	Preplant	28,096	17.16	1.22
Kerb 50W	2.0	4.0 lbs	Preplant	29,403	17.42	1.18
Kerb 3.3SC	1.0	2.4 pints	Preplant	28,423	16.53	1.17
Kerb 3.3SC	2.0	4.8 pints	Preplant	29,076	19.51	1.34
Kerb 50W	1.0	2.0 lbs	Preplant + post <sup>1</sup>	29,403	18.39	1.23
Kerb 50W	2.0	4.0 lbs	Preplant + post <sup>1</sup>	28,913	19.51	1.34
Kerb 3.3SC	1.0	2.4 pints	Preplant + post <sup>1</sup>	28,096	17.65	1.23
Kerb 3.3SC	2.0	4.8 pints	Preplant + post <sup>1</sup>	28,423	17.52	1.23
Prefar 4EC	6.0	1.5 gallons	Preplant	27,769	16.58	1.19
LSD (0.05)				n.s.	2.56	n.s.