

Project Number: 13K 3419 6228

Title: Weed control in cucumbers.

Personnel: Tim Miller and Carl Libbey, WSU NWREC

Reporting Period: 2004-05

Accomplishments: Two cucumber studies were conducted in 2004: one study monitoring rotational crop sensitivity to Sandea (halosulfuron) and one testing Command (clomazone) with several other herbicides to determine the best combinations to use in late-season pickling cucumbers. Eight herbicides in various combinations were tested for crop safety in cucumbers; a total of fifteen treatments were applied.

Results: Results will be presented at the Western Washington Horticultural Association meeting in January, 2005.

Cucumber herbicide trial. Pickling cucumber (cv. 'Calypso') was planted July 8, 2004 at WSU NWREC. Herbicides were applied July 12 (preemergence, PRE) and July 30 (postemergence, POST). Crop injury and weed control were rated August 18, 2004. Cucumber plants from four 1-m rows were counted September 2, 2004 and marketable fruits were harvested from the vines. Fruit number and fruit weight were tallied. The experimental design was a randomized complete block with four replicates. Results are included in the Table.

Cucumber plant-back trial. Pickling cucumber (cv. 'Calypso') was planted July 7, 2003 at WSU NWREC. Command with and without several rates of Sandea was applied July 8 (PRE). Crop injury and weed control were rated July 23 and September 3, 2003. Cucumber plants from four 2-m rows were counted September 3, 2003 and marketable fruits were harvested from the vines. Fruit number and fruit weight were tallied. Fall rotational crops (cabbage seed, winter wheat, and tulip) were planted at right angles to the herbicide treatments in fall, 2003 and spring rotational crops (spinach seed, beet seed, Swiss chard seed, peas, broccoli, and potatoes) were planted in spring, 2004. The experimental design was a split-plot, randomized complete block with four replicates.

Table. Crop injury, weed control, and cucumber yield after treatment with several herbicide combinations (2004).

Treatment	Rate	Timing ^a	Crop injury ^b	Weed control ^b	Fruit/plant ^c	Fruit wt./plant ^c	Avg. fruit wt. ^c
	product/a		%	%	no./plant	g/plant	g/fruit
Command	5.3 fl.oz	PRE	1	92	1.2	108	92
Command + Curbit	5.3 fl.oz + 2 pts	PRE + PRE	3	100	1.3	106	85
Command + Outlook	5.3 fl.oz + 6.4 fl.oz	PRE + PRE	1	93	1.3	117	91
Command + Dual Magnum	5.3 fl.oz + 6.7 fl.oz	PRE + PRE	1	96	1.4	127	90
Command + Alanap	5.3 fl.oz + 4 qts	PRE + PRE	1	88	1.1	102	93
Command + Sandea	5.3 fl.oz + 0.51 oz	PRE + PRE	4	99	1.3	115	87
Command + Kerb	5.3 fl.oz + 8 oz	PRE + PRE	0	87	1.2	110	90
Command + Curbit + Dual Magnum	5.3 fl.oz + 1.3 pts + 3.3 fl.oz	PRE + PRE + PRE	0	96	1.3	108	81
Command + Alanap + Dual Magnum	5.3 fl.oz + 2 qts + 3.3 fl.oz	PRE + PRE + PRE	0	92	1.3	102	76
Command + Outlook	5.3 fl.oz + 4.3 fl.oz	PRE + POST	4	90	1.3	88	67
Command + Dual Magnum	5.3 fl.oz + 5 fl.oz	PRE + POST	4	80	1.0	81	82
Command + (Sandea + Dual Magnum + nis)	5.3 fl.oz + (0.21 oz + 4.2 fl.oz + 0.25%)	PRE + (POST + POST + POST)	10	95	1.4	84	62
Command + (Sandea + nis)	5.3 fl.oz + (0.34 oz + 0.25%)	PRE + POST	8	97	1.3	76	60
Command + Basagran	5.3 fl.oz + 0.5 pt	PRE + POST	7	95	1.0	80	76
Hand weeded	---	---	0	86	1.4	101	72
LSD _{0.05}	---	---	5	ns	0.2	29	18

^aPRE = preemergence, applied July 12, 2004; POST = postemergence, applied July 30, 2004.

^bCrop injury and weed control evaluated August 18, 2004.

^cCucumber fruit harvested September 2.