

Project Number: 13K 3419 6228

Title: Weed control in cucurbits

Personnel: Tim Miller and Carl Libbey, WSU NWREC

Reporting Period: 2010-11

Accomplishments: One study was conducted in 2011, a combination stale seedbed and herbicide trial. Seven herbicides and flaming were tested for crop safety in cucumbers at different treatment timings; a total of 96 treatments were applied this season.

Results:

Stale seedbed trial. Pickling cucumber was seeded at WSU Mount Vernon NWREC July 1, 2011 into strips of land that had been prepared for seeding at seven days or three days prior to the seeding date. A check strip was also seeded into a freshly-prepared seedbed (zero days prior to seeding). Four residual herbicides, Command (clomazone), Dual Magnum (s-metolachlor), Sandea (halosulfuron), and Curbit (ethalfluralin) were applied July 4 and two nonselective herbicides, Roundup (glyphosate) and Gramoxone (paraquat), or flame (propane flamer) were applied July 6, immediately prior to cucumber shoot emergence, but POST to many weed seedlings. Cucumber injury and weed control was estimated August 10. Cucumber vines and weeds from 1-m² sections in the center of each plot were separated at harvest maturity and fresh weight was determined September 7-8. Squash and pumpkins were harvested in the same manner on October 13 and from October 18-20, respectively. The experimental design was a split-split-block, randomized complete block with three replicates.

Table. Effect of stale seedbed on weed control from several herbicides applied immediately prior to cucumber emergence (2010).

Treatment	Rate	Crop injury		Weed rating		Average cucumber vine fresh weight ^a	Cucumber vine fresh	
		Aug 5	Aug 5	Sep 15	weight ^a		Weed fresh weight ^a	
<u>Stale seedbed</u>	product/a	%	%	%	g/plant	kg/plot	g/plot	
14 days	---	0 bc	98 a	94 a	215	6.41	48 bc	
7 days	---	1 ab	97 ab	92 ab	220	6.33	34 c	
3 days	---	1 a	96 b	90 b	211	6.19	125 b	
0 days	---	0 c	93 c	86 c	211	6.31	259 a	
<u>PRE herbicide</u>								
Roundup	2 pt	1	96 abc	91 a	222 a	6.29	154 abc	
Gramoxone	2.4 pt	0	97 a	92 a	222 a	6.41	51 d	
Rely	4 pt	1	96 abc	91 a	216 ab	6.45	68 bcd	
ET	2.5 fl.oz	1	97 a	91 a	212 ab	6.37	58 cd	
Flame	---	1	95 bc	87 b	207 b	6.13	160 ab	
None	---	0	94 c	90 a	208 b	6.20	207 a	
<u>Residual herbicide</u>								
Command	5.3 fl.oz	0 b	96 a	90 b	220 a	6.44	117 ab	
Curbit	2.7 pt	0 b	96 ab	90 b	215 ab	6.34	149 a	
Sandea	0.5 oz	2 a	97 a	93 a	209 b	6.28	62 b	
None	---	0 b	95 b	88 c	213 ab	6.48	138 ab	

Means within a column in each section that are followed by the same letter (or are without letters) are not significantly different ($P < 0.05$).

Cucumbers planted July 9, 2010; PRE herbicides applied July 13, 2010 (PRE to crop, POST to weeds); residual herbicides applied July 10, 2010.

^aCucumber vines and weeds harvested September 7-8, 2010.