

Herbicide performance in corn at Waseca, MN common cocklebur site in 2005. Hoverstad, Thomas R. and Jeffrey L. Gunsolus. The objective of this trial was to evaluate weed management systems available to corn producers in southern Minnesota on several annual weed species. This site had an especially high population of common cocklebur. The research site was a Clarion clay loam soil containing 5% organic matter, pH = 6.4 and soil test P and K levels of 40 and 173 ppm, respectively. The previous crop was soybean that had been chisel plowed in the fall. The area was fertilized in the spring with 150 lb N/A as anhydrous ammonia and field cultivated once to a depth of 3 inches prior to planting to prepare a seedbed. Pioneer '38H69' was planted on May 23, 2005 in 30-inch rows. All treatments were applied with a tractor-mounted sprayer delivering 20 gpa at 40 psi using 8002 flat-fan nozzle tips. Visual estimates of weed control were taken on September 1, 2005. Application dates, environmental conditions, crop and weed stages are listed below.

Date	May 24	June 9	June 13	June 16
Treatment	Pre	Post I	Post II	Post III
air temp °F	75	79	75	83
soil temp (4-inch) °F	70	66	68	66
Relative humidity (%)	35	40	45	21
Wind	N 12	E 1	E 5	NE 3
Soil moisture	Moist	Wet	Moist	Moist
Corn				
Stage	-	V2	V3	V4
height (inch)	-	4	5	6
Giant foxtail				
leaf no.	-	2	3	4
height (inch)	-	1	2	4
Common cocklebur				
leaf no.	-	3	3	4
height (inch)	-	3	4	5
Common lambsquarters				
leaf no.	-	4	5	6
height (inch)	-	2	2-3	3-4
Rainfall after application (inch)				
Week 1	0.74	0.55	0.32	1.00
Week 2	0.37	0.99	1.94	2.54
Week 3	1.76	2.55	1.95	0.35

Poor common cocklebur was observed with preemergence S-metolachlor&mesotrione&atrazine. Postemergence V2 applications of rimsulfuron&thifensulfuron or nicosulfuron&rimsulfuron tank mixed with S-metolachlor&mesotrione&atrazine resulted in slightly lower levels of common cocklebur control than other V2, V3 or V4 applications. KIH-485 applied preemergence followed by flumetsulam&clopyralid plus mesotrion plus atrazine resulted in poorer giant foxtail control than all other treatments. (University of Minnesota, Southern Research and Outreach Center, Waseca, MN and Dept of Agronomy and Plant Genetics, University of Minnesota, St Paul).

Table. Herbicide performance in corn at a common cocklebur site at Waseca, MN in 2005 (Hoverstad and Gunsolus).

Treatment <sup>a</sup>	Rate (lb/A or %)	SETFA	XANST	CHEAL	Yield Bu/A <sup>b</sup>
		-----(% control)-----			
<u>Preemergence</u>					
[Acet&dcmd&atra]+[Flms&clpy]	[2.2&0.8]+[0.046&0.125]	98	91	99	201
[S-meto&meso&atra]	[2&0.2&0.75]	97	49	99	173
<u>Preemergence/POST III (V4 corn)</u>					
Acet <sup>1</sup>	2.2/				
[Flms&clpy]+Meso+Atra+COC+AMS	[0.035&0.09]+0.023+0.25+1%+2.5	97	99	99	195
KIH-485/	[2.2&0.8]/				
[Flms&clpy]+Meso+Atra+COC+AMS	[0.035&0.09]+0.023+0.25+1%+2.5	90	99	99	172
Dime-P/	0.98/				
[Dica&difl]+Atra+NIS+AMS	[0.125&0.05]+0.5+0.25%+2.5	99	98	99	189
Fict/Gluf+Atra+AMS	0.38/0.42+0.5+3	97	95	99	192
Fict/	0.38/				
Fora+[Dica&difl]+MSO+28%	0.033+[0.06&0.025]+1.5pt+3pt	99	92	97	188
[S-meto&beno]/	0.95/				
[Nico&rims]+Meso+Atra+COC+AMS	[0.023&0.012]+0.06+0.5+1%+2	99	94	99	189
[S-meto&beno]/	1.91/				
Meso+Atra+COC+28%N	0.094+0.5+1%+2.5%	97	99	99	192
Dime-P/	0.98/				
Carf+Atra+Dica+NIS	0.008+0.5+0.94+0.25%	96	96	97	192
Acet <sup>2</sup> /Glyt <sup>1</sup> +AMS	1.1/0.77+2.5	99	92	99	200
[Acet&dcmd&atra]/Glyt <sup>2</sup> +AMS	[1.1&0.4]/.75+2.5	99	96	98	191
Dime-P/[Dica&difl]+Glyt <sup>1</sup> +NIS+AMS	0.56/[0.094&0.04]+0.39+0.25%+2.5	99	94	99	195
[Rims&thif]+atra/Glyt <sup>3</sup>	[0.012&0.006]+0.38/0.77				
<u>POST I (V2 Corn)</u>					
[Rims&thif]+	[0.01&0.005]+				
[S-meto&meso&atra]+NIS	[1.2&0.12&0.44]+0.25%	92	88	99	199
[S-meto&meso&atra]+Glyt <sup>4</sup> +AMS	[1&0.1&0.38]+0.78+1.7	99	95	99	195
[S-meto&meso&atra]+Gluf+AMS	[1&0.1&0.38]+0.26+1.7	99	91	99	205
[Nico&rims]+	[0.023&0.012]+				
[S-meto&meso&atra]+NIS	[0.67&0.067&0.25]+0.25%	98	82	96	193
<u>POST II (V3 corn)</u>					
Fora+Meso+MSO+AMS	0.035+0.047+1.5pt+3pt	98	92	93	195
<u>POST III (V4 corn)</u>					
[Nico&rims]+Meso+Atra+COC+AMS	[0.023&0.012]+0.06+0.5+1%+2.5	97	92	99	192
DPX-E9636+Glyt <sup>3</sup> +AMS	0.016+0.77+2	99	95	96	201
DPX-E9636+Atra+Glyt <sup>3</sup> +AMS	0.016+0.5+0.77+2	98	93	97	194
<u>Checks</u>					
Weedy	-	0	0	0	24
Hand-Weeded	-	100	100	100	199
	LSD (0.10)	5	5	4	14

<sup>a</sup>Acet<sup>1</sup> = acetochlor = Surpass 6.4E; Acet<sup>2</sup> = acetochlor = Harness 7E; [Acet&dcmd&atra] = [acetochlor & dichlormid & atrazine] = Keystone LA 5.5 SE; Atra = atrazine = Aatrex 90DF; Carf = carfentrazone = Aim EW; Dica = dicamba = Clarity 4S; [Dica&difl] = [dicamba & diflufenzopyr] = Distinct 70WG; Dime-P = Dimethenamid-P = Outlook 6L; Fict = flufenacet = DefineSC 4L; Fora = foramsulfuron = Option 35DF; [Flms&clpy] = [flumetsulam & clopyralid] = Hornet WDG; Glyt<sup>1</sup> = glyphosate = Roundup Weather MAX; Glyt<sup>2</sup> = glyphosate = Glyphomax XRT; Glyt<sup>3</sup> = glyphosate = Roundup OriginalMAX; Glyt<sup>4</sup> = glyphosate = Touchdown Total; Gluf = glufosinate = Liberty 1.67L; Meso = mesotrione = Callisto 4L; [Nico&rims] = [nicosulfuron & rimsulfuron] = Steadfast 75DF; [S-meto&beno] = [S-metolachlor & benoxacor] = Cinch 7.64EC; [S-meto&meso&atra] = [S-metolachlor & mesotrione & atrazine] = Lumax 3.95L; COC = crop oil concentrate, Prime Oil; NIS = nonionic surfactant, Class Preference; MSO = Methylated seed oil = Destiny; 28%N = an aqueous solution of urea and ammonium nitrate; AMS = N-Pa-K liquid ammonium sulfate.

<sup>b</sup> Yield adjusted to 15.5% moisture.