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 tractormounted 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)	4			4.00
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 Lumax. Postemergence V2 applications of Basis or Steadfast tank mixed with Lumax resulted in slightly lower levels of common cocklebur control than other V2, V3 or V4 applications. KIH-485 applied preemergence followed by Hornet plus Callisto 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).

Preemergence Reystone LA + Homet WDG	Treatment	Rate	Giant foxtail	Common cocklebur	Common lambsquarters	Yield
Keystone LA + Hornet WDG		(Product/A)		(% control)		
Keystone LA + Hornet WDG	<u>Preemergence</u>					
Preemergence/POST III (V4 com)		2.2 qt + 4oz	98	91	99	201
Preemergence/POST III (V4 com) Surpass / Hornet + 2.75 pt / 3 oz + 2.75 pt / 3 oz +	Lumax	6 pt	97	49	99	173
Surpass / Hornet + Callisto + atrazine + COC + AMS	Preemergence/POST III (V4 corn)					
KIH-485 / Hornet + Callisto + atrazine + COC + AMS	Surpass / Hornet +	•	97	99	99	195
Distinct + atrazine + NIS + AMS	KIH-485 / Hornet +	8 oz / 3 oz +	90	99	99	172
Define SC/ Option+Distrinct+MSO+28%			99	98	99	189
Define SC/			97	95	99	192
Option+Distinct+MSO+28%	•	•	00	00	07	400
Callisto+attrazine+COC+AMS	Option+Distinct+MSO+28%	1.5 oz + 2 oz + 1.5 pt + 3 pt	99	92	97	188
Callisto+atrazine+COC+28%N 3 oz + 16 oz + 1% + 2.5% 97 99 99 192 Outlook/ 21 oz / 21 oz / 30z + 16 oz + 3 oz + 0.25% 96 96 97 192 Aim+atrazine+Clarity+NIS 0.5 oz + 16 oz + 3 oz + 0.25% 99 92 99 200 Roundup WeatherMax+AMS 22 oz + 3 qt 99 92 99 92 99 200 Roundup WeatherMax+AMS 22 oz + 3 qt 99 96 98 191 Glyphomax XRT + AMS 24 oz + 3 qt 99 96 98 191 Outlook/ Distinct + 12 oz / 3 oz + 99 94 99 94 99 195 Basis + Atrazine/ 0.4 oz + 12 oz / 3 oz + 99 94 99 99 195 Basis + atrazine/ 0.4 oz + 12 oz / 2 oz POST I (V2 Corn) Basis + Lumax + NIS 0.33 oz + 3.5 pt + 0.25% 92 88 99 199 Lumax + Touchdown Total + AMS 3 pt + 24oz + 2 qt 99 95 99 195 Lumax + Liberty + AMS 3 pt + 20oz + 2 qt 99 91 99 90 90 90 90 90 90 90 90 90 90 90 90	Callisto+atrazine+COC+AMS	•	99	94	99	189
Aim+atrazine+Clarity+NIS	Callisto+atrazine+COC+28%N	3 oz + 16 oz + 1% + 2.5%	97	99	99	192
Roundup WeatherMax+AMS Keystone LA / 2.2 pt / 99 96 98 191 Glyphomax XRT + AMS 24 oz + 3 qt 0.0 100 99 96 98 191 Outlook/ Distinct + 12 oz / 3 oz + 12 oz / 8 at razine / 0.4 oz + 12 oz / 8 asis + atrazine / 8 asis + atrazine / 8 asis + atrazine / 8 asis + Lumax + NIS 10.33 oz + 3.5 pt + 0.25% 99 91 99 95 99 199 199 199 199 199 199	Aim+atrazine+Clarity+NIS		96	96	97	192
Gyphomax XRT + AMS Outlook/ Distinct + RoundupWeatherMax + NIS + AMS Basis + atrazine/ Roundup OriginalMax POST I (V2 Com) Basis + Lumax + NIS 10.33 oz + 3.5 pt + 0.25% + 3 qt Basis + Lumax + NIS 10.33 oz + 3.5 pt + 0.25% 10.4 oz + 12 oz/ 8 oz POST I (V2 Com) Basis + Lumax + NIS 10.33 oz + 3.5 pt + 0.25% 10.4 oz + 12 oz/ 8 oz POST I (V2 Com) Basis + Lumax + NIS 10.33 oz + 3.5 pt + 0.25% 10.33 oz + 3.5 pt + 0.25% 10.33 oz + 3.5 pt + 0.25% 10.34 oz + 3.5 pt + 0.25% 10.35 oz + 2 oz +	Roundup WeatherMax+AMS	22 oz + 3 qt	99	92	99	200
RoundupWeatherMax + NIS + AMS Basis + atrazine/ Roundup OriginalMax 22 oz POST I (V2 Corn) Basis + Lumax + NIS	Glyphomax XRT + AMS	24 oz + 3 qt	99	96	98	191
POST I (V2 Corn) Basis + Lumax + NIS 0.33 oz + 3.5 pt + 0.25% 92 88 99 199 Lumax + Touchdown Total + AMS 3 pt + 24oz + 2 qt 99 95 99 195 Lumax + Liberty + AMS 3 pt + 20oz + 2 qt 99 91 99 205 Steadfast + Lumax + NIS 0.75 oz + 2 pt + 0.25% 98 82 96 193 POST II (V3 corn) Option + Callisto + MSO + 28%N 1.5 oz + 1.5 oz + 1.5 pt + 3 pt 98 92 93 195 POST III (V4 corn) Steadfast + Callisto + MSO + 28%N 1.5 oz + 1.5 oz + 1.5 pt + 3 pt 98 92 93 195 POST III (V4 corn) Steadfast + Callisto + MSO + 28%N 1.5 oz + 1.5 oz + 1.5 pt + 3 pt 97 92 99 192 Atrazine + COC + AMS 16 oz + 1% + 4.7 pt 97 92 99 99 192 Resolve + atrazine + Roundup OriginalMax + AMS 22 oz + 4.7 pt 98 93 97 194 Checks Weedy - 0 0	RoundupWeatherMax + NIS + AMS Basis + atrazine/	11 oz + 0.25% + 3 qt 0.4 oz + 12 oz/	99	94	99	195
Lumax + Touchdown Total + AMS 3 pt + 24oz + 2 qt 99 95 99 195 Lumax + Liberty + AMS 3 pt + 20oz + 2 qt 99 91 99 205 Steadfast + Lumax + NIS 0.75 oz + 2 pt + 0.25% 98 82 96 193 POST II (V3 corn) Option + Callisto + MSO + 28%N 1.5 oz + 1.5 oz + 1.5 pt + 3 pt 98 92 93 195 POST III (V4 corn) Steadfast + Callisto + Alisto +		22 OZ				
Lumax + Liberty + AMS 3 pt + 20oz + 2 qt 99 91 99 205 Steadfast + Lumax + NIS 0.75 oz + 2 pt + 0.25% 98 82 96 193 POST II (V3 corn) Option + Callisto + MSO + 28%N 1.5 oz + 1.5 oz + 1.5 pt + 3 pt 98 92 93 195 POST III (V4 corn) Steadfast + Callisto + Atrazine + COC + AMS 16 oz + 1% + 4.7 pt 97 92 99 192 Resolve + Atrazine + COC + AMS 10z + 16 oz + 10 pt 99 95 96 201 Resolve + atrazine + Roundup OriginalMax + AMS 22 oz + 4.7 pt 98 93 97 194 Checks - 0 0 0 24 Hand-Weeded - 100 100 100 100	Basis + Lumax + NIS	0.33 oz + 3.5 pt + 0.25%	92	88	99	199
Steadfast + Lumax + NIS 0.75 oz + 2 pt + 0.25% 98 82 96 193 POST II (V3 corn) Option + Callisto + MSO + 28%N 1.5 oz + 1.5 oz + 1.5 pt + 3 pt 98 92 93 195 POST III (V4 corn) Steadfast + Callisto + Atrazine + COC + AMS 0.75 oz + 2 oz + 4.7 pt 97 92 99 192 Resolve + Atrazine + COC + AMS 16 oz + 1% + 4.7 pt 99 95 96 201 Resolve + atrazine + Roundup OriginalMax + AMS 22 oz + 4.7 pt 98 93 97 194 Checks Weedy - 0 0 0 24 Hand-Weeded - 100 100 100 100	Lumax + Touchdown Total + AMS	3 pt + 24oz + 2 qt	99	95	99	195
POST II (V3 corn) Option + Callisto + MSO + 28%N 1.5 oz + 1.5 oz + 1.5 pt + 3 pt 98 92 93 195 POST III (V4 corn) Steadfast + Callisto +	Lumax + Liberty + AMS	3 pt + 20oz + 2 qt	99	91	99	205
Option + Callisto + MSO + 28%N 1.5 oz + 1.5 oz + 1.5 pt + 3 pt 98 92 93 195 POST III (V4 corn) Steadfast + Callisto + O.75 oz + 2 oz + O.75	Steadfast + Lumax + NIS	0.75 oz + 2 pt + 0.25%	98	82	96	193
POST III (V4 corn) Steadfast + Callisto + Atrazine + COC + AMS 0.75 oz + 2 oz + 10	POST II (V3 corn)					
Steadfast + Callisto + 0.75 oz + 2 oz + 97 92 99 192 Resolve + 10 z + 99 95 96 201 Resolve + atrazine + 10z + 16 oz + 98 93 97 194 Resolve + atrazine + 10z + 16 oz + 98 93 97 194 Checks 22 oz + 4.7 pt 0 0 0 24 Hand-Weeded - 100 100 100 199	Option + Callisto + MSO + 28%N	1.5 oz + 1.5 oz + 1.5 pt + 3 pt	98	92	93	195
Atrazine + COC + AMS 16 oz +1% + 4.7 pt 97 92 99 192 Resolve + Roundup OriginalMax + AMS 1 oz + 1 99 95 96 201 Resolve + atrazine + Roundup OriginalMax + AMS 1 oz + 16 oz + 22 oz + 4.7 pt 98 93 97 194 Checks Veedy - 0 0 0 24 Hand-Weeded - 100 100 100 199	POST III (V4 corn)					
Roundup OriginalMax + AMS 22 oz + 4.7 pt 99 95 96 201 Resolve + atrazine + Roundup OriginalMax + AMS 1 oz + 16 oz + 22 oz + 4.7 pt 98 93 97 194 Checks - 0 0 0 24 Hand-Weeded - 100 100 100 199			97	92	99	192
Roundup OriginalMax + AMS 22 oz + 4.7 pt 98 93 97 194 Checks Usedy - 0 0 0 24 Hand-Weeded - 100 100 100 100 199			99	95	96	201
Weedy - 0 0 0 24 Hand-Weeded - 100 100 100 199			98	93	97	194
Hand-Weeded - 100 100 100 199	<u>Checks</u>					
	Weedy	-	0	0	0	24
LSD (0.10) 5 5 4 14	Hand-Weeded	-	100	100	100	199
		LSD (0.10)	5	5	4	14

^a Yield adjusted to 15.5% moisture.