Herbicide performance in corn at Waseca, MN common cocklebur site in 2003. 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 ragweed. The research site was a Webster clay loam soil containing 5% organic matter, pH = 6.6 and soil test P and K levels of 36 and 210 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 urea and field cultivated once to a depth of 3 inches to prior to planting to incorporate fertilizer and prepare a seedbed. Three corn hybrids were used to evaluate the products for weed control in this trial. Those treatments that included glyphosate (Roundup WeatherMax or Touchdown IQ) were evaluated using Garst '8590RR'. The treatment including Lightning was evaluated using Garst '8590IT'. The treatments using Liberty and those treatments that require no special herbicide resistance were evaluated using 'Garst 8517LL'. All corn was planted on May 2, 2003 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 18, 2003. Application dates, environmental conditions, crop and weed stages are listed below.

Date	May 2	May 30	June 10	June 24
Treatment	Pre	V3 corn	V4 corn	4-inch regrowth
air temp °F	64	74	68	85
soil temp (4-inch) °F	52	65	60	75
Relative humidity (%)	45	30	45	25
Wind	W6	W 12	N8	W 6
Soil moisture	Moist	Dry	Moist	Moist
Corn				
stage	--	V3	V4	V9
height (inch)	--	4	7	30
Giant foxtail				
leaf no.	--	1-2	3-4	2-4
height (inch)	--	1-2	4-5	3-5
Common cocklebur				
leaf no.	--	2	4	2
height (inch)	--	3-4	6	4
Common ragweed				
leaf no.	--	2-4	4-6	2-4
height (inch)	--	1-2	4	2-4
Rainfall after application (inch)				
Week 1	1.93	0.03	0.02	0.93
Week 2	1.24	2.09	0.79	1.67
Week 3	0.21	0.03	0.93	1.16

Good control of common cocklebur was observed with all treatments with the exception of Define followed by Liberty plus atrazine or Callisto postemergence at a low rate. Tank mixing Callisto with a growth regulator herbicide resulted in better common cocklebur control compared to Callisto alone. Common ragweed control was better where Steadfast ATZ was tank mixed with Callisto than where Steadfast was tank mixed with Callisto. (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 Waseca, MN common cocklebur site in 2003 (Hoverstad and Gunsolus).

Treatment[a]	Rate	Giant foxtail	Common cocklebur	Common ragweed	Yield
	(lb/A or %)	-------(% control)-------			Bu/A[b]
Preemergence Corn hybrid = Garst 8517LL					
Keystone LA + Hornet WDG	2.2 qt+ 4oz	99	85	44	112
Lumax	6 pt	95	88	84	123
Preemergence/POST II (V4 corn) Corn hybrid = Garst 8517LL					
Surpass/ Hornet+atrazine+COC+AMS	2.75 pt/ 4 oz+0.75 lb+1%+2.5 lb	98	99	99	129
Surpass/ Hornet+Callisto+atrazine+NIS+AMS	2.75 pt/ 3 oz+0.75 oz+0.28 lb+1%+2.5 lb	97	99	99	122
Keystone LA/ Hornet+Clarity+NIS+AMS	2.2 qt/3 oz+4 oz+0.25 lb+1%+2.5 lb	97	99	99	110
Outlook/ Distinct+atrazine+NIS+AMS	21 oz/ 4 oz+0.5 lb+0.25%+2.5 lb	87	93	94	118
Define/ Liberty+atrazine+AMS	12 oz/ 32 oz +0.5 lb+3 lb	98	78	88	127
Define/ Option+Distinct+MSO+28%	12 oz/1.5 oz+4 oz+1.5 pt+3 pt	98	86	97	137
Cinch/ AccentGold+Callisto+atrazine+COC+AMS	0.75 pt/ 3.5 oz+1 oz+0.5 lb+1%+2 lb	92	98	99	133
Cinch/ Streadfast+Callisto+atrazine+COC+AMS	0.75 pt/ 0.75 oz+2 oz+0.5 lb+1%+2 lb	98	80	96	130
Dual II Magnum/ Northstar+atrazine+COC+28%N	2 pt/5 oz+0.5 lb+1%+2.5%	95	88	97	122
Dual II Magnum/ Callisto+atrazine+COC+28%N	1 pt/ 3 oz+0.28 lb+1%+2.5%	82	90	98	126
Outlook/ Aim+atrazine+COC	21 oz/ 0.5 oz+1 lb+1%	96	86	68	105
Outlook/ Aim+atrazine+Clarity+COC	21 oz/ 0.5 oz+1 lb+4 oz+1%	99	86	98	110
Preemergence/POST II (V4 corn) Corn hybrid = Garst 8590 RR					
Harness/ Roundup WeatherMax+AMS	1.25 pt/22 oz+2.5 lb	99	86	91	122
Dual II Magnum/ Touchdown IQ+AMS	1 pt/ 32 oz+2.5 lb	99	82	93	109
Outlook/ RoundupWeatherMax+Clarity	12 oz/ 22 oz + 8 oz	99	95	99	120
POST I (V3 corn) / POST III (4-inch Regrowth) Corn hybrid = Garst 8590 RR					
Roundup WeatherMax+AMS/ Roundup WeatherMax+AMS	22 oz+2.5 lb/ 22 oz+2.5 lb	99	99	99	134
POST I (V3 corn) / POST III (4-inch Regrowth) Corn hybrid = Garst 8517LL					
Liberty+atrazine+AMS / Liberty+atrazine+AMS	32 oz+0.5 lb+2.5 lb/ 28 oz +0.5 lb+2.5 lb	96	91	97	122
POST 1(V3 corn) Corn hybrid = Garst 8590IT					
Lightning+Marksman+ NIS+AMS	1.28 oz+2 pt+0.25%+2.5 lb	92	94	96	122
POST II (V4 Corn) Corn hybrid = Garst 8517LL					
Steadfast+Callisto+COC+AMS	0.75 oz+2 oz+1%+2 lb	88	86	50	134
Steadfast ATZ+Callisto+COC+AMS	14 oz+2 oz+1%+2 lb	82	97	99	123
Accent Gold WDG+Clarity+atrazine+COC+AMS	3.5 oz+4 oz+0.5 oz+1%+2 lb	89	99	99	126
Steadfast+Lumax+NIS+AMS	0.75 oz+2 pt+0.25%+2 lb	93	86	93	123
Checks					
Weedy	-	0	0	0	2
Hand-Weeded	-	100	100	100	130
	LSD (0.10)	8	10	9	15

[b] Yield adjusted to 15.5% moisture.