Herbicide performance in corn at Waseca, MN tall waterhemp 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 tall waterhemp. The research site was a Webster clay loam soil containing 8.5% organic matter, pH = 7.5 and soil test P and K levels of 120 and 284 ppm, respectively. The previous crop was corn that had been moldboard 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 2, 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	81
soil temp (4-inch) °F	70	66	68	69
Relative humidity (%)	35	40	45	23
Wind	N 12	E 1	E 5	N 5
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
Tall waterhemp				
leaf no.	-	2	3	4
height (inch)	-	0.5	1.5	4
Velvetleaf				
leaf no.	-	1	2	3
height (inch)	-	1	2	3
Common lamsquarters				
leaf no.	-	4	5	6
height (inch)	-	2	2	3
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

Tall waterhemp control was very good to excellent with all treatments. Preemergence S-metolachlor&mesotrione&atrazine resulted in poorer control of giant foxtail and velvetleaf than 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 tall waterhemp site at Waseca, MN in 2005 (Hoverstad and Gunsolus).

Treatment[a]	Rate	SETFA	AMATU	ABUTH	CHEAL	Yield
	(lb/A or %)	-------(% control)-------				Bu/A[b]
Preemergence						
[Acet&dcmd&atra]+[Flms&clpy]	[2.2&0.8]+[0.046&0.125]	98	99	97	99	205
[S-meto&meso&atra]	[2&0.2&0.75]	79	91	81	99	205
Preemergence/POST III (V4 corn)						
Acet[1]/ [Flms&clpy]+Meso+Atra+COC+AMS	2.2/ [0.035&0.09]+0.023+0.25+1%+2.5	98	99	99	99	211
KIH-485/ [Flms&clpy]+Meso+Atra+COC+AMS	[2.2&0.8]/ [0.035&0.09]+0.023+0.25+1%+2.5	94	99	99	99	206
Dime-P/ [Dica&difl]+Atra+NIS+AMS	0.98/ [0.125&0.05]+0.5+0.25%+2.5	99	99	99	99	200
Flct/Gluf+Atra+AMS	0.38/0.42+0.5+3	99	99	96	99	194
Flct/ Fora+[Dica&difl]+MSO+28%	0.38/ 0.033+[0.06&0.025]+1.5pt+3pt	95	92	99	99	199
[S-meto&beno]/ [Nico&rims]+Meso+Atra+COC+AMS	0.95/ [0.023&0.012]+0.06+0.5+1%+2	96	99	99	99	205
[S-meto&beno]/ Meso+Atra+COC+28%N	1.91/ 0.094+0.5+1%+2.5%	97	99	99	99	215
Dime-P/ Carf+Atra+Dica+NIS	0.98/ 0.008+0.5+0.94+0.25%	89	99	92	97	202
Acet[2]/Glyt[1]+AMS	1.1/0.77+2.5	99	99	92	99	213
[Acet&dcmd&atra]/Glyt[2]+AMS	[1.1&0.4]/.75+2.5	99	99	97	99	189
Dime-P/[Dica&difl]+Glyt[1]+NIS+AMS	0.56/[0.094&0.04]+0.39+0.25%+2.5	99	99	98	99	203
[Rims&thif]+atra/Glyt[3]	[0.012&0.006]+0.38/0.77	98	97	95	99	204
POST I (V2 Corn)						
[Rims&thif]+ [S-meto&meso&atra]+NIS	[0.01&0.005]+ [1.2&0.12&0.44]+0.25%	95	99	99	99	211
[S-meto&meso&atra]+Glyt[4]+AMS	[1&0.1&0.38]+0.78+1.7	99	99	99	99	214
[S-meto&meso&atra]+Gluf+AMS	[1&0.1&0.38]+0.26+1.7	99	99	99	99	210
[Nico&rims]+ [S-meto&meso&atra]+NIS	[0.023&0.012]+ [0.67&0.067&0.25]+0.25%	98	99	99	99	217
POST II (V3 corn)						
Fora+Meso+MSO+AMS	0.035+0.047+1.5pt+3pt	91	98	99	99	192
POST III (V4 corn)						
[Nico&rims]+Meso+Atra+COC+AMS	[0.023&0.012]+0.06+0.5+1%+2.5	94	99	99	99	196
DPX-E9636+Glyt[3]+AMS	0.016+0.77+2	97	97	99	96	192
DPX-E9636+Atra+Glyt[3]+AMS	0.016+0.5+0.77+2	99	99	99	98	200
Checks						
Weedy	-	0	0	0	0	143
Hand-Weeded	-	100	100	100	100	201
	LSD (0.10)	5	5	6	1	13

[a]Acet[1] = acetochlor = Surpass 6.4E; Acet[2] = 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; Flct = flufenacet = DefineSC 4L; Fora = foramsulfuron= Option 35DF; [Flms&clpy] = [flumetsulam & clopyralid] = Hornet WDG; Glyt[1] = glyphosate = Roundup Weather MAX; Glyt[2]= glyphosate = Glyphomax XRT; Glyt[3]= glyphosate = Roundup OriginalMAX; Glyt[4]= 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-metoloachlor & 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.

[b] Yield adjusted to 15.5% moisture.