Herbicide performance in corn at Waseca, MN tall waterhemp site in 2004. 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 = 7.1 and soil test P and K levels of 135 and 248 ppm, respectively. The previous crop was soybean that had been chisel plowed in the fall. The area was fertilized in the spring with 167 lb N/A as urea and field cultivated once to a depth of 3 inches to prior to planting to prepare a seedbed. Two corn hybrids were used to evaluate the products for weed control in this trial. Those treatments that included glyphosate were evaluated using Pioneer '38H66'. The treatments using glufosinate and those treatments that require no special herbicide resistance were evaluated using Pioneer '38H68'. All corn was planted on May 5, 2004 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 29, 2004. Application dates, environmental conditions, crop and weed stages are listed below.

Date	May 7	June 3	June 16	June 30
Treatment	Pre	V3 corn	V4 corn	4-inch regrowth
air temp °F	51	70	68	82
soil temp (4-inch) °F	52	65	68	75
Relative humidity (%)	25	45	40	35
Wind	S 10	W 5	N 9	S 4
Soil moisture	Dry	Moist	Moist	Moist
Corn				
stage	--	V3	V4	V9
height (inch)	--	4	6	30
Giant foxtail				
leaf no.	--	1-2	2-3	2-4
height (inch)	--	1-2	2-3	3-5
Tall waterhemp				
leaf no.	--	2-4	4-6	2-4
height (inch)	--	1-2	3	2-4
Rainfall after application (inch)				
Week 1	1.66	4.29	0.15	2.09
Week 2	0.73	1.18	0.48	2.49
Week 3	2.47	0.37	2.09	1.85

All treatments evaluated in this trial resulted in excellent tall waterhemp control. Several treatments however, resulted in poor giant foxtail control including soil applied [S-metolachlor & mesotrione & atrazine] and all total postemergence treatments that did not include glyphosate.(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 2004 (Hoverstad and Gunsolus).

Treatment[a]	Rate	SETFA	AMATU	Yield
	(lb/A or %)	----(% control)----		Bu/A[b]
Preemergence Corn hybrid = Pioneer 38H68				
[Acet&atra]+[Flms&clpy]	[2.2&0.8]+[0.046&0.125]	93	99	202
[S-meto&meso&atra]	[2&0.2&0.75]	73	99	186
Preemergence/POST II (V4 corn) Corn hybrid = Pioneer 38H68				
Acet/ Flms&clpy]+Meso+Atra+NIS+AMS	2.2/ [0.035&0.09]+0.023+0.25+1%+2.5	98	99	199
[Acet&atra]/ Flms&clpy]+Dica+Atra+NIS+AMS	[2.2&0.8]/ [0.035&0.09]+0.125+0.25+1%+2.5	96	99	184
Dime-P/ [Dica&difl]+Atra+NIS+AMS	0.98/ [0.125&0.05]+0.45+0.25%+2.5	97	99	193
Flct/Gluf+Atra+AMS	0.45/0.42+0.45+3	99	99	190
Flct/ Fora+[Dica&difl]+MSO+28%	0.45/ 0.033+[0.125&0.05]+1.5pt+3pt	96	99	183
Flct[2]/ Fora+Meso+MSO+28%	0.38/ 0.033+0.047+1.5pt+3pt	97	98	187
[S-meto&CGA-154281]/ [Nico&rims&clpy&flms]+Meso+ Atra+COC+AMS	0.71/ [0.01&0.01&0.11&0.03]+0.031+ 0.45+1%+2	84	99	185
[S-meto&CGA-154281]/ [Nico&rims]+Meso Atra+COC+AMS	0.71/ [0.02&0.01]+0.063 0.45+1%+2	84	99	177
[S-meto&CGA-154281]/ Meso+Gluf+Atra+AMS	0.95/ 0.94+0.22+0.5+2	99	99	200
[S-meto&CGA-154281]/ Meso+Atra+COC+28%N	1.91/ 0.094+0.5+1%+2.5%	93	99	204
Dime-P/ Carf+Atra+Dica+NIS	0.98/ 0.008+0.5+0.94+0.25%	95	99	180
POST II (V4 Corn) Corn hybrid = Pioneer 38H68				
[Nico&rims]+ Meso+COC+AMS	[0.02&0.01]+ 0.06+1%+2	63	99	156
[Nico&rims&clpy&flms]+ Dica+Atra+COC+AMS	[0.01&0.01&0.11&0.03]+ 0.125+0.45+1%+2	56	99	180
[Nico&rims]+ [S-meto&meso&atra]+NIS+AMS	[0.02&0.01]+ [0.5&0.05&0.19]+0.25%+2	59	99	141
Checks Corn Hybrid = Pioneer 38H68				
Weedy	-	0	0	140
Hand-Weeded	-	100	100	206
Preemergence/POST II (V4 corn) Corn hybrid = Pioneer 38H66				
Acet[2]/Glyt+AMS	1.1/0.94+2.5	99	96	190
[S-meto&CGA-154281]/Glyt[2]+AMS	0.95/1.1+2.5	99	99	191
[Acet&atra]+GF1279+AMS	[1.1&0.4]/1.0+2.5	97	96	184
Dime-P/[Dica&difl]+Glyt+NIS+AMS	0.56/[0.094&0.04]+0.47+0.25%+2.5	99	99	212
[S-meto&CGA-154281/ Glyt+Rims+AMS	0.71/ 0.94+0.016+2.5	99	99	191
POST I (V3 corn) / POST III (4-inch Regrowth) Corn hybrid = Pioneer 38H66				
Glyt+AMS/ Glyt+AMS	0.94+2.5 / 0.94+2.5	99	99	202
Glyt+Carf+AMS/ Glyt+AMS	0.94+0.008+2.5 / 0.94+2.5	99	99	190
Checks Corn Hybrid = Pioneer 38H68				
Hand-Weeded	-	100	100	197
	LSD (0.10)	9	2	17

[a]Acet = acetochlor = Surpass 6.4E; Acet[2] = acetochlor = Harness 7E; [Acet&atra] = [acetochlor & 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 = Define 60DF; Flct[2] = flufenacet = DefineSC 4L; Fora = foramsulfuron= Option 35DF; [Flms&clpy] = [flumetsulam & clopyralid] = Hornet WDG; Glyt = glyphosate = Roundup Weather MAX; Glyt[2]= glyphosate = Touchdown Total; Gluf = glufosinate = Liberty 1.67L; Meso = mesotrione = Callisto 4L; [Nico&rims&clpy&flms] = [nicosulfuron & rimsulfuron & clopyralid & flumetsulam] = Accent Gold WDG; [Nico&rims] = [nicosulfuron & rimsulfuron] = Steadfast 75DF; Rims = rimsulfuron; [S-meto&CGA-154281] = [S-metolachlor & CGA-154281] = Cinch 7.64EC; [S-meto&meso&atra] = [S-metoloachlor & mesotrione & atrazine] = Lumax 3.95L; COC = crop oil concentrate, Class Additive 17%; NIS = nonionic surfactant, Class Preference; 28%N = an aqueous solution of urea and ammonium nitrate; AMS = spray grade ammonium sulfate.

[b] Yield adjusted to 15.5% moisture.