

Herbicide performance in corn at Waseca, MN giant ragweed 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 giant ragweed. The research site was a Webster clay loam soil containing 7% organic matter, pH = 6.7 and soil test P and K levels of 32 and 166 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
Giant ragweed				
leaf no.	-	3	3	4
height (inch)	-	3	4	6
Common cocklebur				
leaf no.	-	3	4	4
height (inch)	-	2	3	4
Velvetleaf				
leaf no.	-	2	3	3
height (inch)	-	1	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

Giant ragweed control was excellent with all treatments except preemergence S-metolachlor&mesotrione&atrazine. Preemergence acetochlor&atrazine plus flumetsulam&clopyralid resulted in poor velvetleaf control. Several treatments resulted in fair to poor giant foxtail control including 1.) preemergence S-metolachlor&mesotrione&atrazine, 2.) preemergence KIH-485 followed by flumetsulam&clopyralid plus mesotrione plus atrazine, 3.) preemergence S-metolachlor&benoxacor followed by mesotrione plus atrazine and 4.) preemergence Dimethenamid-P followed by carfentrazone plus atrazine plus dicamba. (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 giant ragweed site at Waseca, MN in 2005 (Hoverstad and Gunsolus).

Treatment ^a	Rate (lb/A or %)	SETFA	AMBTR	XANST	ABUTH	Yield Bu/A ^b
-----(% control)-----						
<u>Preemergence</u>						
[Acet&dcmd&atra]+[Flms&clpy]	[2.2&0.8]+[0.046&0.125]	96	97	97	79	180
[S-meto&meso&atra]	[2&0.2&0.75]	74	81	93	99	175
<u>Preemergence/POST III (V4 corn)</u>						
Acet ¹ /	2.2/					
[Flms&clpy]+Meso+Atra+COC+AMS	[0.035&0.09]+0.023+0.25+1%+2.5	97	99	99	99	209
KIH-485/	[2.2&0.8]/					
[Flms&clpy]+Meso+Atra+COC+AMS	[0.035&0.09]+0.023+0.25+1%+2.5	85	99	99	99	205
Dime-P/	0.98/					
[Dica&difl]+Atra+NIS+AMS	[0.125&0.05]+0.5+0.25%+2.5	98	99	99	98	196
Flct/Gluf+Atra+AMS	0.38/0.42+0.5+3	99	99	99	98	198
Flct/	0.38/					
Fora+[Dica&difl]+MSO+28%	0.033+[0.06&0.025]+1.5pt+3pt	99	99	99	97	196
[S-meto&beno]/	0.95/					
[Nico&rims]+Meso+Atra+COC+AMS	[0.023&0.012]+0.06+0.5+1%+2	98	99	99	99	187
[S-meto&beno]/	1.91/					
Meso+Atra+COC+28%N	0.094+0.5+1%+2.5%	86	99	99	99	200
Dime-P/	0.98/					
Carf+Atra+Dica+NIS	0.008+0.5+0.94+0.25%	83	97	99	99	198
Acet ² /Glyt ¹ +AMS	1.1/0.77+2.5	99	98	99	97	207
[Acet&dcmd&atra]/Glyt ² +AMS	[1.1&0.4]/.75+2.5	99	99	99	98	191
Dime-P/[Dica&difl]+Glyt ¹ +NIS+AMS	0.56/[0.094&0.04]+0.39+0.25%+2.5	99	99	99	99	207
[Rims&thif]+atra/Glyt ³	[0.012&0.006]+0.38/0.77	97	99	99	97	199
<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%	93	99	99	99	201
[S-meto&meso&atra]+Glyt ⁴ +AMS	[1&0.1&0.38]+0.78+1.7	98	99	99	99	210
[S-meto&meso&atra]+Gluf+AMS	[1&0.1&0.38]+0.26+1.7	98	99	99	98	204
[Nico&rims]+	[0.023&0.012]+					
[S-meto&meso&atra]+NIS	[0.67&0.067&0.25]+0.25%	96	99	99	99	207
<u>POST II (V3 corn)</u>						
Fora+Meso+MSO+AMS	0.035+0.047+1.5pt+3pt	93	99	99	98	199
<u>POST III (V4 corn)</u>						
[Nico&rims]+Meso+Atra+COC+AMS	[0.023&0.012]+0.06+0.5+1%+2.5	98	99	99	99	211
DPX-E9636+Glyt ³ +AMS	0.016+0.77+2	96	97	99	97	195
DPX-E9636+Atra+Glyt ³ +AMS	0.016+0.5+0.77+2	96	99	99	97	218
<u>Checks</u>						
Weedy	-	0	0	0	0	74
Hand-Weeded	-	0	0	0	0	196
	LSD (0.10)	4	9	3	5	18

^aAcet¹ = acetochlor = Surpass 6.4E; Acet² = 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; Glyt¹ = glyphosate = Roundup Weather MAX; Glyt² = glyphosate = Glyphomax XRT; Glyt³ = glyphosate = Roundup OriginalMAX; Glyt⁴ = 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.

^b Yield adjusted to 15.5% moisture.