

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 lamquarters				
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 Lumax 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	Rate (Product/A)	Giant foxtail	Tall waterhemp	Velvetleaf	Common lambsquarters	Yield Bu/A <sup>a</sup>
		-----(% control)-----				
<u>Preemergence</u>						
Keystone LA + Hornet WDG	2.2 qt + 4oz	98	99	97	99	205
Lumax	6 pt	79	91	81	99	205
<u>Preemergence/POST III (V4 corn)</u>						
Surpass / Hornet + Callisto + atrazine + COC + AMS	2.75 pt / 3 oz + 0.75 oz + 8 oz + 1% + 3 qt	98	99	99	99	211
KIH-485 / Hornet + Callisto + atrazine + COC + AMS	8 oz / 3 oz + 0.75 oz + 8 oz + 1% + 3 qt	94	99	99	99	206
Outlook / Distinct + atrazine + NIS + AMS	21 oz / 4 oz + 16 oz + 0.25% + 2.5 lb	99	99	99	99	200
Define SC/ Liberty+atrazine+AMS	12 oz / 32 oz + 16 oz + 3.5 qt	99	99	96	99	194
Define SC/ Option+Distinct+MSO+28%	12 oz / 1.5 oz + 2 oz + 1.5 pt + 3 pt	95	92	99	99	199
Cinch/ Steadfast+ Callisto+atrazine+COC+AMS	1 pt / 0.75 oz + 2 oz + 16 oz + 1% + 4.7 pt	96	99	99	99	205
Dual II Magnum/ Callisto+atrazine+COC+28%N	2 pt / 3 oz + 16 oz + 1% + 2.5%	97	99	99	99	215
Outlook/ Aim+atrazine+Clarity+NIS	21 oz / 0.5 oz + 16 oz + 3 oz + 0.25%	89	99	92	97	202
Harness/ Roundup WeatherMax+AMS	1.25 pt / 22 oz + 3 qt	99	99	92	99	213
Keystone LA / Glyphomax XRT + AMS	2.2 pt / 24 oz + 3 qt	99	99	97	99	189
Outlook/ Distinct + RoundupWeatherMax + NIS + AMS	12 oz / 3 oz + 11 oz + 0.25% + 3 qt	99	99	98	99	203
Basis + atrazine/ Roundup OriginalMax	0.4 oz + 12 oz / 22 oz	98	97	95	99	204
<u>POST I (V2 Corn)</u>						
Basis + Lumax + NIS	0.33 oz + 3.5 pt + 0.25%	95	99	99	99	211
Lumax + Touchdown Total + AMS	3 pt + 24oz + 2 qt	99	99	99	99	214
Lumax + Liberty + AMS	3 pt + 20oz + 2 qt	99	99	99	99	210
Steadfast + Lumax + NIS	0.75 oz + 2 pt + 0.25%	98	99	99	99	217
<u>POST II (V3 corn)</u>						
Option + Callisto + MSO + 28%N	1.5 oz + 1.5 oz + 1.5 pt + 3 pt	91	98	99	99	192
<u>POST III (V4 corn)</u>						
Steadfast + Callisto + Atrazine + COC + AMS	0.75 oz + 2 oz + 16 oz + 1% + 4.7 pt	94	99	99	99	196
Resolve + Roundup OriginalMax + AMS	1 oz + 22 oz + 4.7 pt	97	97	99	96	192
Resolve + atrazine + Roundup OriginalMax + AMS	1 oz + 16 oz + 22 oz + 4.7 pt	99	99	99	98	200
<u>Checks</u>						
Weedy	-	0	0	0	0	143
Hand-Weeded	-	100	100	100	100	201
	LSD (0.10)	5	5	6	1	13

<sup>a</sup> Yield adjusted to 15.5% moisture.