

Herbicide performance in corn at Lamberton, MN in 2004. Getting, Jodie K., Jeffrey L. Gunsolus, and Thomas R. Hoverstad. The objective of this study was to evaluate corn herbicide combinations for annual grass and annual broadleaf weed control in corn. This study was conducted on a Normania loam soil containing 4.2% organic matter, pH 6.5 and soil test P and K levels of 60 and 316 lb/A, respectively. A randomized complete block design with four replications and a plot size of 10 by 30 ft was used. The site was planted to oats in 2003 and was fall chiseled. The area was fertilized with 180 lb/A of nitrogen as urea. On May 10, 2004, Pioneer '38H68' glufosinate resistant field corn and Pioneer '38H66' glyphosate resistant field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. Cyfluthrin + tebupirimphos (Aztec 2.1G) was applied at 6.7 oz/1000 row feet in a T-band for the control of northern corn rootworm larvae. All treatments were applied with a tractor-mounted sprayer delivering 20 gpa at a pressure of 40 psi. The sprayer was equipped with 8002 flat-fan nozzles spaced 15 inches apart on the boom. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

Date	May 10	June 8	June 14	June 28
Treatment	PRE	POST I	POST II	Regrowth
Temperature (F)				
air	66	61	72	73
soil (4 inch)	72	72	82	68
Relative humidity (%)	30	72	44	33
Wind (mph)	NE 10	calm	W 10	W 2
Sky	clear	cloudy	clear	clear
Soil moisture	dry	dry	moist	dry
Corn				
leaf no.	-	V3	V4	V8
height (inch)	-	5	8	20
Yellow foxtail				
leaf no.	-	1 to 3	2 to 4	2 to 4
height (inch)	-	1 to 2	3 to 5	2 to 3
no./ft ²	-	117	116	7
Common lambsquarters				
leaf no.	-	2 to 4	3 to 5	1 to 2
height (inch)	-	1 to 2	2 to 4	0.25 to 1
no./ft ²	-	3	2	<1
Redroot pigweed				
leaf no.	-	1 to 2	2 to 4	1 to 2
height (inch)	-	0.25 to 1	2 to 3	0.25 to 1
no./ft ²	-	4	3	<1
Rainfall after application (inch)				
1 week	1.29	2.08	0.56	0.75
2 week	2.56	0.56	0.48	1.55
3 week	2.74	0.48	0.75	0.02

(Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Herbicide performance in corn at Lamberton, MN in 2004 (Getting, Gunsolus and Hoverstad).

Treatment ^a	Rate	Yellow foxtail			Common lambsquarters			Redroot pigweed			Yield (bu/A) ^b
		6/14	6/25	9/10	6/14	6/25	9/10	6/14	6/25	9/10	
<u>Preemergence</u>	(oz/A, pt/A, lb/A or %)	-----(% control)-----									
Keystone LA + Hornet	4.4 pt + 4 oz	94	93	75	98	100	99	98	100	100	189
Lumax	6 pt	93	89	73	98	100	100	98	100	100	196
<u>Preemergence/POST II (4-collar corn)</u>											
Surpass / Hornet + Callisto + Atrazine + COC + AMS	2.75 pt / 3 oz + 0.75 oz + 0.28 lb + 1% + 2.5 lb	94	97	86	97	100	100	98	100	100	193
Keystone LA / Hornet + Clarity + NIS + AMS	4.4 pt / 3 oz + 4 oz + 0.25% + 2.5 lb	91	95	79	97	100	100	97	100	100	183
Outlook / Distinct + Atrazine + NIS + AMS	21 oz / 4 oz + 0.5 lb + 0.25% + 2.5 lb	89	97	89	93	100	100	97	100	99	195
Define / Liberty + Atrazine + AMS	12 oz / 32 oz + 0.5 lb + 3 lb	88	100	93	88	100	100	85	100	100	198
Define / Option + Distinct + MSO + 28%N	12 oz / 1.5 oz + 4 oz + 1.5 pt + 3 pt	84	94	83	85	100	100	86	100	100	197
Define / Option + Callisto + MSO + 28%N	12 oz / 1.5 oz + 1.5 oz + 1.5 pt + 3 pt	83	96	80	83	100	100	84	100	98	192
Cinch / Accent Gold + Callisto + Atrazine + COC + AMS	0.75 pt / 3.5 oz + 1 oz + 0.5 lb + 1% + 2 lb	83	98	87	83	100	100	91	100	100	184
Cinch / Steadfast + Callisto + Atrazine + COC + AMS	0.75 pt / 0.75 oz + 2 oz + 0.5 lb + 1% + 2 lb	81	97	92	81	100	100	84	100	99	202
Dual II Magnum / Callisto + Liberty + Atrazine + AMS	1 pt / 3 oz + 16 oz + 0.55 lb + 2 lb	86	100	94	88	100	100	95	100	100	190
Dual II Magnum / Callisto + Atrazine + COC + 28%N	2 pt / 3 oz + 0.55 lb + 1% + 2.5%	90	99	90	88	100	100	96	100	100	189
Outlook / Aim + Atrazine + Clarity + NIS	21 oz / 0.5 oz + 0.55 lb + 3 oz + 0.25%	91	97	83	95	100	100	97	100	99	189
<u>POST II (4-collar corn)</u>											
Steadfast + Callisto + COC + AMS	0.75 oz + 2 oz + 1% + 2 lb	0	91	75	0	100	100	0	100	100	184
Accent Gold + Clarity + Atrazine + COC + AMS	3.5 oz + 4 oz + 0.5 lb + 1% + 2 lb	0	91	70	0	100	96	0	100	90	180
Steadfast + Lumax + NIS + AMS	0.75 oz + 1.5 pt + 0.25% + 2 lb	0	91	74	0	100	100	0	100	100	195
<u>Checks</u>											
Weedy check		0	0	0	0	0	0	0	0	0	89
Weed-free (Liberty Link)		100	100	100	100	100	100	100	100	100	197
<u>Preemergence/POST II (4-collar corn)</u>											
Harness / Roundup Weathermax + AMS	1.25 pt / 22 oz + 2.5 lb	88	100	89	93	100	96	97	100	96	197
Dual II Magnum / Touchdown Total + AMS	1 pt / 24 oz + 2.5 lb	83	100	94	85	100	100	94	100	99	207
Keystone LA / GF 1279 + AMS	2.2 pt / 24 oz + 2.5 lb	88	100	92	95	100	99	97	100	99	198
Outlook / Distinct + Roundup Weathermax + NIS + AMS	12 oz / 3 oz + 11 oz + 0.25% + 2.5 lb	88	100	92	90	100	98	96	100	100	192
Cinch / Roundup Weathermax + E9636 + AMS	0.75 pt / 22 oz + 1 oz + 2.5 lb	79	100	97	88	100	100	93	100	100	195
<u>POST I (3-collar corn)/Regrowth(4-inch weeds)</u>											
Roundup Weathermax + AMS / Roundup Weathermax + AMS	22 oz + 2.5 lb / 22 oz + 2.5 lb	100	100	97	100	100	100	100	100	99	205
Roundup Weathermax + Aim + AMS / Roundup Weathermax + AMS	22 oz + 0.5 oz + 2.5 lb / 22 oz + 2.5 lb	100	100	100	100	100	100	100	100	99	201
<u>Checks</u>											
Weed-free (Roundup Ready)		100	100	100	100	100	100	100	100	100	200
	LSD (0.10)	3.7	2.3	3.8	5.2	ns	1.3	3.8	ns	2.5	12.3

^a COC = crop oil concentrate; MSO = methylated seed oil; NIS = nonionic surfactant; 28%N = an aqueous solution of urea and ammonium nitrate; AMS = spray grade ammonium sulfate.

^b Yield adjusted to 15.5% moisture.