

Herbicide performance in corn at Lamberton, MN in 2007. 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 4.7% organic matter, pH 6.3 and soil test P and K levels of 34 and 380 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 2006 and was fall chiseled. The area was fertilized with 140-60-60 on April 20, 2007. On May 2, 2007, Pioneer '35F40' glufosinate resistant/glyphosate resistant field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. Tefluthrin (Force) was applied at 5.0 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 2	May 21	May 23	May 31	June 11
Treatment	PRE	POST I	POST II	POST III	POST IV
Temperature (F)					
air	61	66	73	68	78
soil (4 inch)	66	66	72	64	70
Relative humidity (%)	42	68	29	60	70
Wind (mph)	E 5	S 10	W 5	S 12	S 6
Sky	clear	clear	cloudy	clear	clear
Soil moisture	dry	dry	moist	dry	dry
Corn					
leaf no.	-	V2	V3	V5	V7
height (inch)	-	3	4.5	9	21
Yellow foxtail					
leaf no.	-	2 to 3	2 to 4	3 to 5	2 to 4
height (inch)	-	1 to 1.5	2 to 3	3 to 5	2 to 4
no./ft ²	-	49	41	29	8
Common lambsquarters					
leaf no.	-	2 to 3	2 to 4	5 to 7	2 to 4
height (inch)	-	0.5 to 1.0	1 to 2	3 to 4	1 to 3
no./ft ²	-	3	2	2	< 1
Tall waterhemp					
leaf no.	-	2 to 3	2 to 4	5 to 6	2 to 4
height (inch)	-	0.5 to 1.0	0.5 to 1.5	3 to 4	1 to 2
no./ft ²	-	2	3	2	< 1
Rainfall after application (inch)					
1 week	1.96	0.27	0.14	1.90	1.43
2 week	0.02	1.97	1.93	0.19	0.17
3 week	0.26	0.24	0.21	1.43	0.00

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

Table. Herbicide performance in corn at Lamberton, MN in 2007 (Getting, Gunsolus and Hoverstad).

Treatment ^a	Rate	Yellow foxtail				Common lambsquarters				Tall waterhemp				Yield ^b (bu/A)
		5/31	6/11	6/19	8/21	5/31	6/11	6/19	8/21	5/31	6/11	6/19	8/21	
<u>Preemergence</u>	(oz/A, pt/A, qt/A, lb/A or %)	-----(% control)-----												
Keystone LA + Hornet	4.4 pt + 4 oz	97	90	89	91	100	100	100	97	100	100	100	98	193
<u>Preemergence/POST III (5-collar corn)</u>														
Breakfree/ Stout + Impact + Atrazine + COC + AMS	1.0 pt/ 0.5 oz + 0.5 oz + 16 oz + 1% + 3 qt	85	98	94	93	91	100	100	98	97	100	100	98	186
Outlook / Status + NIS + AMS	21 oz / 5 oz + 0.25% + 3 qt	96	95	91	93	90	100	100	98	97	100	100	98	196
Define / Liberty + Atrazine + AMS	12 oz / 32 oz + 16 oz + 3.5 qt	61	97	93	93	51	100	98	95	71	100	100	97	191
Define / Option + Distinct + MSO + 28%N	12 oz / 1.5 oz + 2 oz + 1.5 pt + 1.5 qt	69	89	89	90	68	100	99	98	88	100	98	96	194
Define / Laudis + MSO + 28%N	12 oz / 3 oz + 1.5 pt + 1.5 qt	69	95	90	91	55	100	100	98	95	100	100	96	187
Breakfree/ New Resolve + Roundup Original Max + NIS + AMS	1 pt/ 1.25 oz + 22 oz + 0.25% + 3 qt	89	98	94	93	96	100	100	98	98	100	100	98	195
Dual II Magnum / Callisto + Atrazine + COC + 28%N	1 qt / 3 oz + 16 oz + 1% + 2.5%	90	98	98	97	88	100	100	98	98	100	100	98	189
Harness / Roundup Weathermax + AMS	1.25 pt / 22 oz + 3 qt	94	98	95	95	95	100	98	95	98	100	100	97	194
Lumax / Touchdown Total + AMS	3 pt / 24 oz + 3 qt	79	98	96	96	100	100	100	98	100	100	100	98	190
Lumax / Liberty + AMS	3 pt + 24 oz + 3 qt	89	91	91	92	99	100	100	98	99	100	100	98	195
Surestart / Durango + AMS	1.75 pt / 24 oz + 3 qt	88	97	94	94	98	100	100	98	99	100	100	98	188
Outlook / Roundup Weathermax + Status + AMS	12 oz / 22 oz + 2.5 oz + 3 qt	91	98	96	97	95	100	100	98	99	100	100	98	192
Resolve + Atrazine / Roundup Original Max + NIS + AMS	1 oz + 24 oz / 22 oz + 0.25% + 3 qt	53	96	89	89	97	100	99	97	98	100	99	95	197
Breakfree / Impact + Atrazine + MSO + 28%N	2 pt / 0.5 oz + 16 oz + 1% + 2.5%	93	97	94	94	98	100	100	98	100	100	100	98	188
Harness / Impact + Atrazine + Roundup Weathermax + AMS	1.25 pt / 0.5 oz + 16 oz + 22 oz + 3 qt	91	98	97	96	98	100	100	98	97	100	100	98	201
<u>POST I (2-collar corn)/POST IV (regrowth)</u>														
Roundup Weathermax + AMS / Roundup Weathermax + AMS	22 oz + 3 qt / 22 oz + 3 qt	100	86	98	95	100	98	100	98	100	93	100	98	187
<u>POST I (2-collar corn)</u>														
Surestart + Durango + AMS	1.75 pt + 24 oz + 3 qt	100	98	94	93	100	100	100	98	100	100	100	98	189
Halex GT + Atrazine + NIS + AMS	4 pt + 16 oz + 0.25% + 3 qt	100	97	93	92	100	100	100	98	100	100	100	98	191
<u>POST II (3-collar corn)</u>														
Steadfast + Impact + Atrazine + MSO + AMS	0.75 oz + 0.5 oz + 16 oz + 1% + 3 qt	100	96	87	87	100	100	99	97	100	100	99	95	200
Steadfast + Status + Atrazine + MSO + AMS	0.75 oz + 2.5 oz + 16 oz + 1% + 3 qt	94	94	86	85	100	100	100	97	100	100	96	93	191
New Resolve + Atrazine + Roundup Original Max + NIS + AMS	1.25 oz + 16 oz + 22 oz + 0.25% + 3 qt	100	97	86	86	100	100	100	95	100	100	95	93	197
<u>Checks</u>														
Weedy check		0	0	0	0	0	0	0	0	0	0	0	0	76
Weed-free		100	100	100	100	100	100	100	100	100	100	100	100	206
	LSD (0.10)	5.1	3.1	3.1	2.9	5.6	0.5	1.7	1.8	3.0	1.2	1.8	2.0	14.7

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

^b Yield adjusted to 15.5% moisture.