

Herbicide performance in corn at Lamberton, MN in 2009.

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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 6.1 and soil test P and K levels of 68 and 376 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 2008 and was fall chiseled. The area was fertilized with 170-60-60. On May 11, 2009, Pioneer '37Y14' glufosinate resistant/glyphosate resistant field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. 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 11	May 28	June 1	June 3	June 19
Treatment	PRE	POST I	POST II	POST III	POST IV
Temperature (F)					
air	64	48	55	45	70
soil (4 inch)	62	58	66	62	72
Relative humidity (%)	32	71	72	53	64
Wind (mph)	S 10	SW 5	N 5	calm	NW 7
Sky	clear	clear	clear	p. cloudy	p. cloudy
Soil moisture	dry	dry	dry	dry	moist
Corn					
leaf no.	-	V1	V3	V4	V6
height (inch)	-	3	5	6	15
Yellow foxtail					
leaf no.	-	1 to 2	3 to 4	3 to 4	2 to 4
height (inch)	-	0.5 to 2	2 to 5	3 to 5	2 to 4
no./ft ²	-	41	42	45	15
Common lambsquarters					
leaf no.	-	1	2 to 5	2 to 5	2 to 3
height (inch)	-	0.5 to 1.0	2 to 4	3 to 5	1 to 3
no./ft ²	-	3	2	2	<1
Tall waterhemp					
leaf no.	-	1	1 to 3	2 to 4	2 to 3
height (inch)	-	0.25 to 0.5	1 to 2	2 to 3	1 to 3
no./ft ²	-	3	4	3	1
Rainfall after application (inch)					
1 week	0.01	0.05	1.36	1.38	0.52
2 week	0.34	1.40	0.13	1.03	0.23
3 week	0.16	1.02	1.22	0.39	1.46

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

Table. Herbicide performance in corn at Lamberton, MN in 2009 (Getting, Gunsolus and Hoverstad).

Treatment ^a	Rate (oz/A, pt/A, qt/A, lb/A or %)	Yellow foxtail				Common lambsquarters				Tall waterhemp				Yield ^b (bu/A)
		Jun 2	Jun 16	Jun 25	Aug 24	Jun 2	Jun 16	Jun 25	Aug 24	Jun 2	Jun 16	Jun 25	Aug 24	
Preemergence/POST II (3-collar corn)		-----(% control)-----												
Dual II Magnum/ Halex GT+ NIS + AMS	1 pt / 3.6 pt + 0.25% + 3 qt	46 g	99 ab	97 bc	97 b	45 e-g	99 a	99 a	99 ab	63 c-e	99 a	99 b	99 ab	203 ab
Preemergence/POST III (4-collar corn)														
Harness / Laudis + atrazine + COC + 28%N	1.75 pt / 3 oz + 16 oz + 1% + 1.5 qt	56 d-f	98 ab	95 d-g	93 d-g	55 c-e	99 a	99 a	99 ab	68 b-d	99 a	99 b	99 ab	202 ab
Harness / Laudis + Buctril + COC + 28%N	1.75 pt / 3 oz + 6 oz + 1% + 1.5 qt	63 b-d	97 bc	93 f-i	90 g-j	68 b	99 a	99 a	99 ab	74 bc	99 a	99 b	97 b	207 ab
Harness / Ignite + AMS	1.75 pt / 22 oz + 2 qt	66 bc	88 e	93 g-i	88 jk	61 b-d	83 b	85 b	84 c	78 b	99 a	98 c	94 c	203 ab
Harness / Capreno + COC + 28%N	1.75 pt / 3 oz + 1% + 1.5 qt	60 b-e	95 cc	96 b-e	93 d-g	45 e-g	99 a	99 a	99 ab	69 c-d	99 a	99 b	99 ab	205 ab
Breakfree / Resolve + mesotrione + safener + atrazine + COC + AMS	1 pt / 1.2 oz + 2.5 oz + 0.3 oz + 16 oz + 1% + 3 qt	50 fg	93 d	91 i-k	86 k	40 f-h	99 a	99 a	99 ab	48 f	99 a	99 b	99 ab	205 ab
Breakfree /	1 pt /	50 fg	99 ab	95 c-f	89 ij	50 d-f	98 a	99 a	98 ab	63 c-e	99 a	99 b	98 ab	202 ab
Resolve Q + Roundup Original Max + AMS	1.25 oz + 22oz + 3 qt													
Harness / Roundup Weathermax + AMS	1.25 pt / 22 oz + 3 qt	50 fg	98 ab	94 e-h	91 f-i	50 d-f	99 a	99 a	99 ab	68 b-d	99 a	99 b	97 b	210 a
Lumax / Touchdown Total + AMS	3 pt / 24 oz + 3 qt	53 e-g	98 ab	94 e-h	91 e-i	35 gh	99 a	99 a	99 ab	44 f	99 a	99 b	99 ab	199 ab
Camix / Touchdown Total + AMS	2.5 pt / 24 oz + 3 qt	53 e-g	99 ab	95 d-g	90 h-j	35 gh	98 a	99 a	99 ab	60 de	99 a	99 b	97 b	199 ab
Surestart / Durango + AMS	1.75 pt / 24 oz + 3 qt	58 c-g	99 ab	92 h-j	91 e-i	30 h	99 a	99 a	97 b	60 de	99 a	99 b	98 ab	200 ab
Surestart / Durango + AMS	2.5 pt / 24 oz + 3 qt	63 b-d	99 ab	97 bc	95 b-d	69 b	99 a	99 a	98 ab	75 b	99 a	99 b	99 ab	198 ab
Surestart + Atrazine / Durango + AMS	1.75 pt + 1.5 pt / 24 oz + 3 qt	65 b-d	99 ab	97 bc	93 d-f	73 b	99 a	99 a	98 ab	53 ef	99 a	99 b	99 ab	211 a
Integrity /	17 oz /	53 e-g	99 ab	97 b-d	92 e-h	45 e-g	99 a	99 a	99 ab	66 b-d	99 a	99 b	98 ab	204 ab
Roundup Weathermax + Status + NIS + AMS	22 oz + 2.5 oz + 0.25% + 3 qt													
Harness / Impact + Atrazine + MSO + 28%N	1.75 pt / 0.75 oz + 16 oz + 1% + 2.5%	68 b	98 ab	96 b-e	93 d-g	69 b	99 a	99 a	99 ab	78 b	99 a	99 b	99 ab	211 a
Harness /	1.25 pt /	66 bc	99 ab	98 ab	94 c-e	66 b-c	99 a	99 a	99 ab	73 bc	99 a	99 b	99 ab	203 ab
Impact + Atrazine + Roundup Weathermax + AMS	0.5 oz + 16 oz + 22 oz + 3 qt													
POST I (1-collar corn)/POST IV (regrowth)														
Roundup Weathermax + AMS /	22 oz + 3 qt /	99 a	87 e	97 bc	92 e-h	99 a	98 a	99 a	98 ab	99 a	97 b	99 b	95 c	207 ab
Roundup Weathermax + AMS	22 oz + 3 qt													
POST II (3-collar corn)														
Surestart + Durango + AMS	1.75 pt + 24 oz + 3 qt	0 h	99 ab	98 ab	96 bc	0 i	99 a	99 a	99 ab	0 g	99 a	99 b	99 ab	204 ab
Halex GT + Atrazine + NIS + AMS	3.6 pt + 16 oz + 0.25% + 3 qt	0 h	99 ab	98 ab	95 b-d	0 i	99 a	99 a	99 ab	0 g	99 a	99 b	99 ab	201 ab
Rimsulfuron +mesotrione + safener + Roundup Original Max + AMS	1.2 oz + 2.5 oz + 0.3 oz + 22 oz + 3 qt	0 h	99 ab	90 k	80 l	0 i	99 a	99 a	99 ab	0 g	99 a	99 b	98 ab	204 ab
Steadfast Q + Callisto + atrazine + COC + AMS	1.5 oz + 2 oz + 16 oz + 1% + 3 qt	0 h	94 d	90 jk	80 l	0 i	99 a	99 a	99 ab	0 g	99 a	99 b	99 ab	207 ab
Resolve Q + Atrazine + Roundup Powermax + AMS	1.25 oz + 16 oz + 22 oz + 3 qt	0 h	98 ab	90 jk	80 l	0 i	99 a	99 a	98 ab	0 g	99 a	99 b	94 c	194 b
Checks														
Weedy check		0 h	0 f	0 l	0 m	0 i	0 c	0 c	0 d	0 g	0 c	0 d	0 d	74 c
Weed-free		100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	204 ab
	LSD (0.10)	9.2	2.6	2.3	2.5	11.4	2.2	3.0	2.6	11.4	1.1	0.7	2.1	13.5

^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.