

Herbicide performance in corn at Lamberton, MN in 2010.

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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 3.8% organic matter, pH 6.1 and soil test P and K levels of 64 and 296 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 soybeans in 2009 and was fall chiseled. The area was fertilized with 135 lbs nitrogen as anhydrous ammonia. On May 5, 2010, Dekalb 'DK 53-78' 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 6	May 26	June 1	June 7	June 18
Treatment	PRE	POST I	POST II	POST III	POST IV
Temperature (F)					
air	43	64	72	54	72
soil (4 inch)	46	62	68	64	68
Relative humidity (%)	61	56	50	77	50
Wind (mph)	N 7	calm	SW 5	calm	S 5
Sky	cloudy	p. cloudy	p. cloudy	clear	p. cloudy
Soil moisture	dry	dry	dry	dry	dry
Corn					
leaf no.	-	V1	V3	V5	V6
height (inch)	-	3	5	10	22
Yellow foxtail					
leaf no.	-	1 to 2	2 to 4	3 to 4	1 to 3
height (inch)	-	0.5 to 2	2 to 5	3 to 5	1 to 3
no./ft ²	-	7	16	14	5
Common lambsquarters					
leaf no.	-	1	2 to 5	6 to 8	2 to 3
height (inch)	-	0.5 to 1.0	2 to 4	3 to 5	1 to 3
no./ft ²	-	2	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	-	<1	5	3	<1
Rainfall after application (inch)					
1 week	1.63	0.09	0.79	2.61	1.45
2 week	0.16	0.75	2.58	0.23	2.22
3 week	0.20	2.55	0.13	3.61	0.70

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

Table. Herbicide performance in corn at Lamberton, MN in 2010 (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 7	Jun 17	Aug 17	Jun 7	Jun 17	Aug 17	Jun 7	Jun 17	Aug 17	
-----(% control)-----											
Preemergence/POST II (3-collar corn)											
Dual II Magnum/ Halex GT+ NIS + AMS	1 pt / 3.6 pt + 0.25% + 3 qt	95 bc	99 ab	97 bc	95 cc	99 a	98 b	98 b-d	99 b	98 b	235 a
Preemergence/POST III (5-collar corn)											
Harness / Laudis + atrazine + COC + 28%N	1.75 pt / 3 oz + 16 oz + 1% + 1.5 qt	90 d-f	99 ab	98 b	97 bc	99 a	98 b	98 a-c	99 b	98 b	227 a-d
Harness / Laudis + Buctril + COC + 28%N	1.75 pt / 3 oz + 6 oz + 1% + 1.5 qt	91 c-e	96 c	96 cc	95 cc	99 a	98 b	96 c-e	99 b	98 b	234 ab
Harness / Ignite + AMS	1.75 pt / 22 oz + 2 qt	89 d-f	98 b	97 b-d	91 e	99 a	98 b	96 d-f	99 b	98 b	229 a-d
Breakfree /	1.25 pt /	88 ef	99 ab	97 bc	91 e	99 a	98 b	95 ef	99 b	98 b	227 a-d
Resolve Q + Abundit Extra + AMS	1.25 oz + 32 oz + 3 qt										
Breakfree /	1.25 pt /	91 c-e	99 ab	96 cc	90 e	99 a	98 b	95 ef	99 b	98 b	231 a-c
Realm Q + Abundit Extra + AMS	4 oz + 32 oz + 3 qt										
Harness / Roundup Weathermax + AMS	1.25 pt / 22 oz + 3 qt	86 f	99 ab	97 bc	93 de	99 a	98 b	97 b-e	99 b	98 b	228 a-d
Lumax / Touchdown Total + AMS	3 pt / 24 oz + 3 qt	87 ef	99 ab	98 b	98 ab	99 a	98 b	98 a-c	99 b	98 b	235 a
Surestart / Durango DMA + AMS	1.75 pt / 24 oz + 3 qt	89 d-f	98 b	97 b-d	95 cc	99 a	98 b	97 b-e	99 b	98 b	228 a-d
Surestart / Durango DMA + AMS	2.5 pt / 24 oz + 3 qt	88 ef	98 b	98 b	97 a-c	99 a	98 b	97 b-e	99 b	98 b	230 a-d
Surestart + Atrazine / Durango DMA + AMS	1.75 pt + 1.5 pt / 24 oz + 3 qt	89 d-f	99 ab	97 bc	98 ab	99 a	98 b	97 b-e	99 b	98 b	232 ab
Integrity /	16 oz /	93 b-d	99 ab	98 b	98 ab	99 a	98 b	98 a-c	99 b	98 b	230 a-d
Roundup Weathermax + Status + NIS + AMS	22 oz + 2.5 oz + 0.25% + 3 qt										
Integrity /	16 oz /	90 d-f	99 ab	97 b-d	98 ab	99 a	98 b	98 a-c	99 b	98 b	227 a-d
Roundup Weathermax + NIS + AMS	22 oz + 0.25% + 3 qt										
Harness / Impact + Atrazine + MSO + AMS	1.75 pt / 0.75 oz + 16 oz + 1% + 3 qt	88 ef	99 ab	97 b-d	90 e	99 a	98 b	94 f	99 b	98 b	229 a-d
Harness /	1.25 pt /	88 ef	99 ab	97 b-d	93 de	99 a	98 b	96 c-e	99 b	98 b	228 a-d
Impact + Roundup Weathermax + AMS	0.5 oz + 22 oz + 3 qt										
POST I (1-collar corn)/POST IV (regrowth)											
Roundup Weathermax + AMS /	22 oz + 3 qt /	97 ab	90 d	95 de	99 ab	99 a	98 b	99 ab	97 d	97 b	229 a-d
Roundup Weathermax + AMS	22 oz + 3 qt										
POST II (3-collar corn)											
Surestart + Durango DMA + AMS	1.75 pt + 24 oz + 3 qt	0 g	99 b	97 b-d	0 f	99 a	98 b	0 g	98 c	97 b	227 a-d
Halex GT + Atrazine + NIS + AMS	3.6 pt + 16 oz + 0.25% + 3 qt	0 g	99 ab	97 bc	0 f	99 a	98 b	0 g	99 b	98 b	228 a-d
Capreno + Roundup Weathermax + Superb HC + AMS	3 oz + 18 oz + 0.5% + 3 qt	0 g	99 b	94 e	0 f	99 a	98 b	0 g	99 b	97 b	230 a-d
POST III (5-collar corn)											
Realm Q + Abundit Extra + AMS	4 oz + 32 oz + 3 qt	0 g	98 b	93 e	0 f	99 a	98 b	0 g	99 b	98 b	226 b-d
Resolve Q + Abundit Extra + AMS	1.25 oz + 32 oz + 3 qt	0 g	98 b	91 f	0 f	99 a	96 c	0 g	99 b	91 c	222 d
Accent Q + Impact + MSO + AMS	0.5 oz + 0.5 oz + 1% + 3 qt	0 g	81 e	80 g	0 f	90 b	90 d	0 g	93 e	88 d	223 cc
Checks											
Weedy check		0 g	0 f	0 h	0 f	0 c	0 e	0 g	0 f	0 e	149 e
Weed-free		100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	229 a-d
	LSD (0.10)	4.2	1.2	2.0	3.2	1.6	1.7	2.1	1.0	4.5	8.6

^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.