

## Corn Weed Management at Lamberton, MN in 2014.

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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 Ves Loam soil containing 4.4% organic matter, pH 5.5 and soil test P and K levels of 24 and 169 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 2013 and fall tillage was done using a mulch ripper. The area was fertilized with 150 lbs of nitrogen as Anhydrous Ammonia in the fall of 2013. On May 20, 2014, Dekalb 'DK 48-12' glufosinate resistant/glyphosate resistant field corn was planted in 30-inch rows at a seeding rate of 36,000 seeds/A. All treatments were applied with a tractor-mounted compressed air sprayer delivering 15 gpa at a pressure of 35 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 22	June 11	June 20	June 24	June 24
Treatment	PRE	POST I	Post II	Post III	Post IV
Temperature (F)					
air	59	82	84	72	76
soil (4 inch)	58	78	70	70	70
Relative humidity (%)	56	68	44	68	58
Wind (mph)	N 6	SW 12	S 8	WNW 4	NW 9
Sky	Clear	p. cloudy	Clear	Clear	p. cloudy
Soil moisture	Dry	Moist	Wet	Dry	Dry
Corn					
leaf no.	-	V4	V5	V6	V6
height (inch)	-	12"	22"	28"	28"
Yellow foxtail					
leaf no.	-	2 to 4	2 to 6	1 to 6	1 to 6
height (inch)	-	2 to 3	1 to 9	1 to 12	1 to 12
no./ft <sup>2</sup>	-	3	4	2	2
Common lambsquarters					
leaf no.	-	3 to 4	2 to 4	2 to 8	2 to 8
height (inch)	-	1 to 2	1 to 2	1 to 6	1 to 6
no./ft <sup>2</sup>	-	1	1	1	1
Tall waterhemp					
leaf no.	-	2 to 4	2 to 6	2 to 8	2 to 8
height (inch)	-	1 to 3	1 to 4	1 to 4	1 to 4
no./ft <sup>2</sup>	-	14	30	24	24
Rainfall after application (inch)					
1 week	0.07	3.67	0.13	0.41	0.41
2 week	2.16	0.37	0.41	0.11	0.11
3 week	0.78	0.41	0.11	0.32	0.32

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

Yield, herbicide rates and weed control are listed in Table 1.

Corvus @ 5.6 oz, Anthem @ 10 oz, and SureStart II @ 2 pts had lower yellow foxtail control than the best performing pre emergence treatments. Harness @ 1.5- 1.75 pts and Dual II Magnum @ 2 pts, provided less lambsquarters control than the best performing pre emerge treatments. All pre emerge treatments provided excellent initial waterhemp control.

With the exception of Verdict @ 18 oz pre-emerge followed by Armezon @ 0.5 oz + Outlook @ 12 oz + Roundup Powermax @ 22 oz post emerge on 3-4" weeds and Anthem @ 10 oz + Stanza @ 0.5 oz followed by Roundup Powermax 32 oz post emerge at 3-4" weeds, herbicide programs yielded better than the untreated weedy check. The SureStart II followed by Durango, Verdict followed by Roundup Powermax, and the total post treatments of Roundup Weathermax followed by Roundup Weathermax, Harness Extra + Impact + Roundup Powermax + Destiny HC to 2-3" weeds and Realm Q + Abundit Extra yielded less than the highest yielding treatment.

Table 1. Corn Weed Management at Lamberton, MN in 2014 (Vollmer, Hoverstad, Gunsolus and Potter).

Treatment	Rate (oz/A, pt/A, qt/A, or % v/v)	Yellow Foxtail				Common Lambsquarters				Tall Waterhemp				Yield bu/ac
		20-Jun	10-Jul	21-Jul	21-Oct	20-Jun	10-Jul	21-Jul	21-Oct	20-Jun	10-Jul	21-Jul	21-Oct	
----- (% control) -----														
<b>Preemergence</b>														
Keystone LA NXT + Hornet WDG	2 qt + 3 oz	99 a	96 b	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	203 a-d
<b>Preemergence / Post III (3-4" weeds)</b>														
Harness / Laudis + Clarity + Destiny HC + AMS	1.7 pt / 3 oz + 8 oz + 0.5% + 2 qt	99 a	99 a	97 b	99 a	82 c	99 a	98 b	99 a	99 a	99 a	98 b	99 a	199 a-d
Zemax / Halex GT + Atrazine + NIS + AMS	1.5 qt / 3.6 pt + 1 pt + 0.25% + 3 qt	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	200 a-d
Corvus / Laudis + Clarity + Roundup Powermax + Destiny HC + AMS	5.6 oz / 3 oz + 8 oz + 32 oz + 0.5% + 2 qt	68 d	99 a	99 a	99 a	99 a	99 a	99 a	99 a	97 a	99 a	99 a	99 a	199 a-d
Breakfree / rimsulfuron + mesotrione + isoxadifen-ethyl + Abundit Extra + NIS + AMS	1.5 pt / 1.2 oz + 2.5 oz + 0.3 oz + 32 oz + 0.25% + 3 qt	95 ab	99 a	99 a	99 a	85 bc	99 a	99 a	99 a	92 a	99 a	99 a	99 a	207 ab
Breakfree / rimsulfuron + mesotrione + isoxadifen-ethyl + Abundit Extra + NIS + AMS	2.5 pt / 1.2 oz + 2.5 oz + 0.3 oz + 32 oz + 0.25% + 3 qt	99 a	99 a	99 a	99 a	92 abc	99 a	99 a	99 a	99 a	99 a	99 a	99 a	206 abc
Breakfree ATZ Lite + rimsulfuron + mesotrione / Abundit Extra + AMS	2 qt + 1 pz + 5 oz / 32 oz + 3 qt	97 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	204 abc
Harness / Roundup Weathermax + AMS	1.25 pt / 32 oz + 3 qt	99 a	99 a	99 a	99 a	86 bc	99 a	99 a	99 a	97 a	99 a	98 b	99 a	204 abc
Zemax / Callisto GT + Atrazine + NIS + AMS	1.5 qt / 2 pt + 1 pt + 0.25% + 3 qt	96 a	99 a	99 a	99 a	92 abc	99 a	99 a	99 a	98 a	99 a	99 a	99 a	199 a-d
Dual II Magnum / Halex GT + NorthStar + NIS + AMS	2 pt / 3.6 pt + 2.5 oz + 0.25% + 3 qt	98 a	99 a	99 a	99 a	65 d	99 a	99 a	99 a	68 b	99 a	99 a	99 a	205 abc
Surestart II / Durango + AMS	2 pt / 32 oz + 3 qt	90 b	99 a	99 a	99 a	97 ab	99 a	99 a	99 a	97 a	99 a	99 a	99 a	198 bcd
Surestart II / Durango + AMS	2.5 pt / 32 oz + 3 qt	98 a	99 a	99 a	99 a	94 abc	99 a	99 a	99 a	99 a	99 a	99 a	99 a	199 a-d
Verdict / Armezon + Outlook + Roundup Powermax + NIS + AMS	18 oz / 0.5 oz + 12 oz + 22 oz + 0.25% + 3 qt	99 a	99 a	99 a	99 a	93 abc	99 a	99 a	99 a	99 a	99 a	99 a	99 a	194 de
Verdict / Roundup Powermax + Status + NIS + AMS	16 oz / 32 oz + 2.5 oz + 0.25% + 3 qt	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	197 cd
Anthem + Stanza / Roundup Powermax + AMS	10 oz + 5 oz / 32 oz + 3 qt	83 c	99 a	99 a	99 a	99 a	99 a	99 a	99 a	97 a	99 a	99 a	99 a	195 de
Harness / Impact + Roundup Powermax + Destiny HC + AMS	1.75 pt / 0.75 oz + 32 oz + 0.5% + 3 qt	97 a	99 a	99 a	99 a	85 bc	99 a	99 a	99 a	99 a	99 a	99 a	99 a	207 ab
<b>Post I (1" weeds) / Post IV (4" regrowth)</b>														
Roundup Weathermax + AMS / Roundup Weathermax + AMS	32 oz + 3 qt / 32 oz + 3 qt	0 e	99 a	99 a	99 a	0 e	99 a	99 a	99 a	0 c	99 a	99 a	99 a	198 bcd
<b>Post II (2-3" weeds)</b>														
Harness Extra + Impact + Roundup Powermax + Destiny HC + AMS	2.4 pt + 0.75 oz + 32 oz + 0.5% + 3 qt	0 e	99 a	99 a	99 a	0 e	99 a	99 a	99 a	0 c	99 a	99 a	99 a	198 bcd
Solstice + Roundup Powermax + COC + AMS	3 oz + 32 oz + 1% + 3 qt	0 e	99 a	99 a	99 a	0 e	99 a	99 a	99 a	0 c	99 a	99 a	99 a	207 ab
Surestart II + Durango + AMS	2 pt + 32 oz + 3 qt	0 e	99 a	99 a	99 a	0 e	99 a	99 a	99 a	0 c	99 a	99 a	99 a	203 a-d
Realm Q + Abundit Extra + NIS + AMS	1.2 oz + 2.5 oz + 0.3 oz + 32 oz + 0.25% + 3 qt	1 e	99 a	99 a	99 a	1 e	99 a	99 a	99 a	1 c	99 a	99 a	99 a	197 cd
<b>Post II (2-3" weeds) / Post IV (4" regrowth)</b>														
Capreno + Roundup Powermax + AMS / Laudis + Destiny HC + AMS	3 oz + 18 oz + 2 qt + 3 oz + 0.5% 2 qt	0 e	99 a	99 a	99 a	0 e	99 a	99 a	99 a	0 c	99 a	99 a	99 a	207 a
<b>Checks</b>														
Weedy check		0 e	0 c	0 c	0 b	0 e	0 b	0 c	0 b	0 c	0 b	0 c	0 b	186 e
Weed-free		99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	202 a-d
	LSD (0.10)	5.6	1.0	0.6	NS	12.7	NS	0.5	NS	11.5	NS	0.7	NS	9.0

COC = crop oil concentrate; NIS = nonionic surfactant; AMS = liquid spray grade ammonium sulfate.  
Yield Adjusted to 15.5% moisture.