

Corn Weed Management at Lamberton, MN in 2013.

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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 4.1% organic matter, pH 5.5 and soil test P and K levels of 52 and 348 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 2012 and was fall chisel plowed. The area was fertilized with 150 lbs of nitrogen as anhydrous ammonia. Due to untimely rains, the trial area was tilled with a field cultivator on May 7 and June 5. On June 6, 2013, Dekalb 'DK 42-42' 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 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. Applications Post I, II and III were all applied on the same date, June 28, due to rainy weather and wet soil conditions. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

Date	June 7	June 28	June 28	June 28
Treatment	PRE	POST I	Post II	Post III
Temperature (F)				
air	63	67	67	67
soil (4 inch)	65	78	78	78
Relative humidity (%)	58	68	68	68
Wind (mph)	NE 3	WNW 10	WNW 10	WNW 10
Sky	Cloudy	Clear	Clear	Clear
Soil moisture	Dry	Dry	Dry	Dry
Corn				
leaf no.	-	V4	V4	V4
height (inch)	-	8"	8"	8"
Green foxtail				
leaf no.	-	2 to 6	2 to 6	2 to 6
height (inch)	-	1 to 8	1 to 8	1 to 8
no./ft ²	-	6	6	6
Common lambsquarters				
leaf no.	-	1 to 6	1 to 6	1 to 6
height (inch)	-	1 to 10	1 to 10	1 to 10
no./ft ²	-	1	1	1
Tall waterhemp				
leaf no.	-	1 to 7	1 to 7	1 to 7
height (inch)	-	1 to 8	1 to 8	1 to 8
no./ft ²	-	5	5	5
Rainfall after application (inch)				
1 week	1.82	0.17	0.17	0.17
2 week	0.14	0.18	0.18	0.18
3 week	2.97	0.18	0.18	0.18

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

Table. Corn Weed Management at Lamberton, MN in 2013 (Vollmer, Potter, Gunsolus and Hoverstad).

Treatment ^a	Rate (pt/A, oz/A, qt/A, or % v/v)	Green foxtail			Common lambsquarters			Tall waterhemp			Yield ^b (bu/A)	
		June 27	July 15	Sept 11	June 27	July 15	Sept 11	June 27	July 15	Sept 11		
-----(% control)-----												
Preemergence / POST IV (4-collar corn)												
Zemax / Halex GT + NIS + AMS	1 qt / 3.6 pt + 0.25% + 3 qt	79 bcd	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	186 bc
Harness / Laudis + Destiny HC + AMS	1.75 pt / 3 oz + 0.5% + 2 qt	87 a-d	100 a	99 b	95 ab	100 a	100 a	100 a	100 a	100 a	100 a	190 bc
Corvis / Laudis + Roundup Powermax + Destiny HC + AMS	5.6 oz / 3 oz + 32 oz + 0.5% + 2 qt	93 ab	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	191 ab
Breakfree / Realm Q + Abundit Extra + NIS + AMS	1.5 pt / 4 oz + 32 oz + 0.25% + 3 qt	96 ab	100 a	99 b	75 ab	100 a	100 a	99 a	100 a	100 a	100 a	191 ab
Breakfree / Realm Q + Abundit Extra + NIS + AMS	2.5 pt / 4 oz + 32 oz + 0.25% + 3 qt	96 ab	100 a	100 a	73 b	100 a	100 a	100 a	100 a	100 a	100 a	185 bc
Breakfree / Instigate + Breakfree ATZ Lite + Abundit Extra + AMS	1.5 pt / 5.25 oz + 1.5 qt + 32 oz + 3 qt	71 d	100 a	100 a	75 ab	100 a	100 a	75 b	100 a	100 a	100 a	190 bc
Harness / Roundup Weathermax + AMS	1.25 pt / 32 oz + 3 qt	89 a-d	100 a	100 a	98 ab	100 a	100 a	100 a	100 a	100 a	100 a	185 bc
Zemax / Touchdown Total + AMS	1.6 qt / 28 oz + 3 qt	91 abc	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	189 bc
SureStart / Durango +AMS	2 pt / 24 oz + 3 qt	81 a-d	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	186 bc
SureStart / Durango +AMS	2.5 pt / 24 oz + 3 qt	80 bcd	100 a	100 ab	98 ab	100 a	100 a	99 a	100 a	100 a	100 a	188 bc
SureStart / SureStart + Durango + AMS	2 pt / 1.5 pt + 24 oz + 3 qt	91 abc	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	188 bc
Verdict / Roundup Powermax + NIS +AMS	18 oz / 22 oz + 0.25% + 3 qt	74 cd	100 a	100 a	75 ab	100 a	100 a	75 b	100 a	100 a	100 a	186 bc
Verdict / Roundup Powermax + Status + NIS +AMS	16 oz / 32 oz + 2.5 oz + 0.25% + 3 qt	99 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	182 c
Anthem / F9387 + Roundup Powermax + AMS	10 oz / 3 oz + 32 oz + 3 qt	93 ab	100 a	100 ab	100 a	100 a	100 a	100 a	100 a	100 a	100 a	183 bc
Harness / Impact + Roundup Powermax + Destiny HC + AMS	1.25 pt / 0.75 oz + 32 oz + 0.5% + 3 qt	93 ab	100 a	100 a	73 b	100 a	100 a	95 a	100 a	100 a	100 a	187 bc
POST I (1" Weeds) / POST V (4" regrowth)												
Roundup Weathermax + AMS / Roundup Weathermax + AMS	32 oz + 3 qt / 32 oz + 3 qt	-	100 a	100 ab	-	100 b	100 a	-	100 b	100 ab	100 a	199 a
POST II (2-4" Weeds) / POST IV (4-collar corn)												
Capreno + Roundup Powermax + AMS / Laudis + Destiny HC + AMS	3 oz + 18 oz + 2 qt / 3 oz + 0.5% + 2 qt	-	100 a	100 ab	-	100 b	100 a	-	100 a	100 a	100 a	184 bc
POST III (3-collar corn)												
Warrant + Impact + Roundup Powermax + Destiny HC + AMS	3 pt + 0.75 oz + 32 oz + 0.5% + 3 qt	-	100 a	100 ab	-	100 a	100 a	-	100 a	100 a	100 a	189 bc
F9387 + Roundup Powermax + NIS + AMS	3 oz + 32 oz + 0.25% + 3 qt	-	78 b	100 ab	-	100 a	100 a	-	100 a	100 a	100 a	190 bc
Halex GT + Atrazine + NIS + AMS	3.6 pt + 1 pt + 0.25% + 3 qt	-	100 a	100 ab	-	100 a	100 a	-	100 a	100 a	100 a	188 bc
SureStart + Durango + AMS	2 pt + 24 oz + 3 qt	-	100 a	100 a	-	100 a	100 a	-	100 a	99 c	100 a	184 bc
Realm Q + Abundit +NIS + AMS	4 oz + 32 oz + 0.25% + 3 qt	-	100 a	99 b	-	100 b	100 a	-	100 a	100 a	100 a	191 ab
Checks												
Weedy check		0 e	0 c	0 c	0 c	0 c	0	0 c	0 c	0 c	0 c	173 d
Weed-free		100 a	100 a	100 a	100 a	100 a	100	100 a	100 a	100 a	100 a	184 bc
	LSD (0.10)	18.1	10.9	0.6	26.9	0.2	ns	16.8	0.1	0.6	0.6	8.3

^a NIS = nonionic surfactant; AMS = liquid spray grade ammonium sulfate.

^b Yield adjusted to 15.5% moisture

