

Herbicide performance in corn at Lamberton, MN in 2012.

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 4.1% organic matter, pH 5.6 and soil test P and K levels of 72 and 364 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 2011 and was fall chiseled. The area was fertilized with 150 lbs of nitrogen as urea. On May 15, 2012, 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 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 16	June 6	June 8	June 12	June 21
Treatment	PRE	POST I	POST II	POST III	POST IV
Treatment number	1-16	17-18	19-22	1-16, 18	17
Temperature (F)					
air	48	70	73	60	70
soil (4 inch)	66	74	76	80	76
Relative humidity (%)	56	64	50	48	53
Wind (mph)	calm	S 10	SW 12	NW 5	NW 12
Sky	clear	p. cloudy	p. cloudy	clear	clear
Soil moisture	dry	dry	dry	dry	moist
Corn					
leaf no.	-	V3	V3	V5	V8
height (inch)	-	5	7	10	25
Yellow foxtail					
leaf no.	-	1 to 2	1 to 3	2 to 4	2 to 4
height (inch)	-	0.5 to 1	1 to 2	2 to 4	2 to 4
no./ft ²	-	7	7	8	2
Common lambsquarters					
leaf no.	-	1 to 2	1 to 2	3 to 4	3 to 4
height (inch)	-	0.5 to 1.0	0.5 to 1.5	1 to 3	1 to 3
no./ft ²	-	1	2	1	1
Tall waterhemp					
leaf no.	-	1 to 2	1 to 2	2 to 3	1 to 2
height (inch)	-	0.25 to 1.0	0.5 to 1.5	1 to 3	0.5 to 1.5
no./ft ²	-	< 1	< 1	3	< 1
Rainfall after application (inch)					
1 week	0.53	0.48	0.14	0.27	0.01
2 week	4.52	0.24	0.72	0.53	0.00
3 week	0.47	0.53	0.01	0.00	0.09

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

Table. Herbicide performance in corn at Lamberton, MN in 2012 (Getting, Gunsolus and Hoverstad).

Treatment ^a	Rate (oz/A, pt/A, qt/A, lb/A or %)	Yellow foxtail			Common lambsquarters			Tall waterhemp		
		Jun 12	Jul 3	Aug 21	Jun 12	Jul 3	Aug 21	Jun 12	Jul 3	Aug 21
-----(% control)-----										
<u>Preemergence/POST III (5-collar corn)</u>										
Keystone LA + Hornet / Durango + AMS	2 qt + 4 oz / 24 oz + 3 qt	98 ab	99 ab	99 ab	99 ab	99 b	99 b	99 b	99 b	99 b
Zemax / Halex GT + Atrazine + NIS + AMS	1 qt / 3.6 pt + 1 pt + 0.25% + 3 qt	98 a	99 ab	98 ab	99 ab	99 b	99 b	99 b	99 b	99 b
Harness / Laudis + Destiny HC +AMS	1.75 pt / 3 oz + 0.5% + 2 qt	98 ab	98 a-c	97 b	99 ab	99 b	99 b	99 b	99 b	99 b
Corvus / Laudis + Roundup Powermax + Destiny HC +AMS	5.6 oz / 3 oz + 22 oz + 0.5% + 2 qt	97 a-c	98 a-c	97 b	99 ab	99 b	99 b	99 b	99 b	99 b
Harness / Ignite + Atrazine + AMS	1.75 pt / 22 oz + 16 oz + 3 qt	97 a-c	98 a-c	97 b	99 ab	99 b	99 b	99 b	99 b	99 b
Breakfree / Realm Q + Abundit S + NIS + AMS	1.5 pt / 4 oz + 32 oz + 0.25% + 3 qt	97 a-c	99 ab	98 ab	98 bc	99 b	99 b	99 b	99 b	99 b
Breakfree / Realm Q + Abundit S + NIS + AMS	2.5 pt / 4 oz + 32 oz + 0.25% + 3 qt	97 a-c	99 ab	99 ab	98 bc	99 b	99 b	99 b	99 b	99 b
Breakfree + Instigate / Abundit S + AMS	1.5 pt + 6 oz / 32 oz + 3 qt	97 a-c	97 bc	98 ab	99 ab	99 b	99 b	99 b	99 b	99 b
Harness / Roundup Weathermax + AMS	1.25 pt / 22 oz + 3 qt	97 bc	97 bc	97 b	97 c	99 b	99 b	99 b	99 b	99 b
Zemax / Touchdown Total + AMS	1.8 qt / 24 oz + 3 qt	99 ab	98 a-c	99 ab	98 bc	99 b	99 b	99 b	99 b	99 b
Surestart / Durango DMA + AMS	2.0 pt / 24 oz + 3 qt	95 c	97 bc	99 ab	98 bc	99 b	99 b	99 b	99 b	99 b
Surestart / Durango DMA + AMS	2.5 pt / 24 oz + 3 qt	97 a-c	98 a-c	99 ab	99 ab	99 b	99 b	99 b	99 b	99 b
Verdict / Roundup Powermax + NIS + AMS	18 oz / 22 oz + 0.25% + 3 qt	97 a-c	99 ab	97 b	99 ab	99 b	99 b	99 b	99 b	99 b
Verdict / Roundup Powermax + Status + NIS + AMS	16 oz / 22 oz + 2.5 oz + 0.25% + 3 qt	96 bc	99 ab	98 ab	99 ab	99 b	99 b	99 b	99 b	99 b
Anthem + Sharpen / Roundup Powermax + AMS	10 oz + 1 oz / 22 oz + 3 qt	95 c	99 ab	99 ab	99 ab	99 b	99 b	99 b	99 b	99 b
Harness / Impact + Roundup Powermax + Destiny HC + AMS	1.25 pt / 0.75 oz + 22 oz + 0.5% + 3 qt	95 c	99 ab	98 ab	99 b	99 b	99 b	98 c	99 b	99 b
<u>POST I (3-collar corn)/POST IV (regrowth)</u>										
Roundup Weathermax + AMS / Roundup Weathermax + AMS	22 oz + 3 qt / 22 oz + 3 qt	99 ab	99 ab	99 ab	99 ab	99 b	99 b	99 b	99 b	99 b
<u>POST I (3-collar corn)/POST III (5-collar corn)</u>										
Capreno + Roundup Powermax + AMS / Laudis + Destiny HC + AMS	3 oz + 18 oz + 2 qt / 3 oz + 0.5% + 2 qt	-	98 a-c	97 b	-	99 b	99 b	-	99 b	99 b
<u>POST II (3-collar corn)</u>										
Anthem + Callisto + Roundup Powermax + NIS + AMS	8 oz + 2.5 oz + 22 oz + 0.25% + 3 qt	-	92 e	93 c	-	99 b	99 b	-	99 b	99 b
Halex GT + Atrazine + NIS + AMS	3.6 pt + 16 oz + 0.25% + 3 qt	-	97 bc	97 b	-	99 b	99 b	-	99 b	99 b
Surestart + Durango DMA + AMS	2 pt + 24 oz + 3 qt	-	95 de	95 c	-	99 b	99 b	-	99 b	99 b
Realm Q + Abundit S + NIS + AMS	4 oz + 32 oz + 0.25% + 3 qt	-	96 cd	93 c	-	99 b	99 b	-	99 b	99 b
<u>Checks</u>										
Weedy check		0 d	0 f	0 d	0 d	0 c	0 c	0 d	0 c	0 c
Weed-free		100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a	100 a
	LSD (0.10)	3.0	2.4	2.4	1.2	ns	ns	0.6	ns	ns

^a COC = crop oil concentrate; NIS = nonionic surfactant; AMS = liquid spray grade ammonium sulfate.

^b Yield adjusted to 15.5% moisture.

2012 Corn Herbicide Evaluation
Lamberton

Herbicide	Rate	Yeft	Colq	Tawh	Yield	Returns
<u>Preemergence/POST III (V4 corn)</u>		(product/A)				
1 Keystone LA + Hornet WDG / Durango + AMS	2 qt + 4 oz / 24 oz + 3 qt	99	99	99	158	1096
2 Zemax / Halex GT + atrazine + NIS + AMS	1 qt / 3.6 pt + 1 pt + 0.25% + 3 qt	98	99	99	145	1008
3 Harness / Laudis + Destiny HC + AMS	1.75 pt / 3 oz + 0.5% + 2 qt	97	99	99	147	1035
4 Corvus / Laudis + Roundup PowerMax + Destiny HC + AMS	5.6 oz / 3 oz + 22 oz + 0.5% + 2 qt	97	99	99	134	
5 Harness / Ignite + atrazine + AMS	1.75 pt / 22 oz + 16 oz + 3 qt	97	99	99	140	988
6 Breakfree / Realm Q + Abundit S + AMS	1.5 pt / 4 oz + 32 oz + 3qt	98	99	99	135	941
7 Breakfree / Realm Q + Abundit S + AMS	2.5 pt / 4 oz + 32 oz + 3qt	99	99	99	144	1004
8 Breakfree / Instigate + Abundit S + AMS	1.5 pt / 6 oz + 32 oz + 3qt	98	99	99	120	
9 Harness / Roundup WeatherMax + AMS	1.25 pt / 22 oz + 3 qt	97	99	99	134	951
10 Zemax / Touchdown Total + AMS	1.8 qt / 24 oz + 3 qt	99	99	99	151	1065
11 SureStart / Durango + AMS	2 pt / 24 oz + 3 qt	98	99	99	155	1101
12 SureStart / Durango + AMS	2.5 pt / 24 oz + 3 qt	99	99	99	134	940
13 Verdict / Roundup PowerMax + NIS + AMS	18 oz / 22 oz + 0.25% + 3 qt	97	99	99	131	911
14 Verdict / Roundup PowerMax + Status + NIS + AMS	16 oz / 22 oz + 2.5 oz + 0.25% + 3 qt	98	99	99	142	994
15 Anthem + Sharpen / Roundup PowerMax + AMS	10 oz + 1 oz / 22 oz + 3 qt	99	99	99	140	
16 Harness / Impact + Roundup PowerMax + Destiny HC + AMS	1.25 pt / 0.75 oz + 22 oz + 0.5% + 3 qt	98	99	99	152	1061
<u>POST I (1" Weeds) / POST IV (4" weeds)</u>						
17 Roundup WeatherMax + AMS / Roundup WeatherMax + AMS	22 oz + 3 qt / 22 oz + 3 qt	99	99	99	137	975
<u>POST II (2" - 4" weeds) / Post III (V4 corn)</u>						
18 Capreno + RoundupPowerMax + AMS / Laudis + Destiny HC + AMS	3 oz + 18 oz + 3 qt / 3 oz + 0.5% + 3 qt	97	99	99	136	942
<u>POST II (2" - 4" weeds)</u>						
19 Anthem + Callisto + Roundup PowerMax + NIS + AMS	8 oz + 2.5 oz + 22 oz + 0.25% + 3 qt	93	99	99	154	
20 Halex GT + atrazine + NIS + AMS	3.6 pt + 16 oz + 0.25% + 3 qt	97	99	99	135	962
21 SureStart + Durango + AMS	2 pt + 24 oz + 3 qt	95	99	99	137	974
22 Realm Q + Abundit S + NIS + AMS	4 oz + 32 oz + 0.25% + 3 qt	93	99	99	128	910
<u>Checks</u>						
23 Weedy Check	-	0	0	0	105	784
24 Weed-Free Check	-	100	100	100	138	1027
LSD (0.10)		2	1	1	19	131

Returns calculated on \$7.50 corn and retail prices for seed, herbicide and application