

## **Herbicide performance in corn at Lamberton, MN in 2008.**

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 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 oats in 2007 and was fall chiseled.

The area was fertilized with 150 lbs of nitrogen applied as anhydrous ammonia. On May 15, 2008, Pioneer '37N16' 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 15	June 2	June 10	June 23
Treatment	PRE	POST I	POST II	POST III
Temperature (F)				
air	68	63	70	73
soil (4 inch)	70	62	68	76
Relative humidity (%)	45	56	43	47
Wind (mph)	W 5	W 5	calm	calm
Sky	cloudy	cloudy	p. cloudy	clear
Soil moisture	dry	dry	dry	dry
Corn				
leaf no.	-	V2	V4	V6
height (inch)	-	3	6	22
Yellow foxtail				
leaf no.	-	1 to 2	2 to 4	2 to 3
height (inch)	-	1	2 to 4	2 to 4
no./ft <sup>2</sup>	-	70	86	26
Common lambsquarters				
leaf no.	-	1 to 2	2 to 5	-
height (inch)	-	0.75	1 to 3	-
no./ft <sup>2</sup>	-	2	2	-
Tall waterhemp				
leaf no.	-	1	2 to 4	2 to 4
height (inch)	-	0.25	1 to 3	1 to 3
no./ft <sup>2</sup>	-	1	4	6
Rainfall after application (inch)				
1 week	0.10	1.93	1.05	0.61
2 week	0.50	1.05	0.00	0.00
3 week	0.58	0.00	0.61	0.02

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

**Table. Herbicide performance in corn at Lamberton, MN in 2008 (Getting, Gunsolus and Hoverstad).**

Treatment <sup>a</sup>	Rate (oz/A, pt/A, qt/A, lb/A or %)	Yellow foxtail				Common lambsquarters				Tall waterhemp				Yield <sup>b</sup> (bu/A)
		Jun 11	Jun 20	Jul 11	Aug 20	Jun 11	Jun 20	Jul 11	Aug 20	Jun 11	Jun 20	Jul 11	Aug 20	
<b>Preemergence</b>		-----(% control)-----												
Corvus	5.6 oz	75 c-e	83 d	79 h	75 j	95 ab	96 b	98 b	98 b	98 ab	98 a	98 ab	97 a-c	187 a-c
<b>Preemergence/POST I (2-collar corn)</b>														
Dual II Magnum/ Halex GT + Atrazine + NIS + AMS	1 pt / 3.6 pt + 16 oz + 0.25% + 3 qt	100 a	98 a	91 cd	90 c-e	100 a	98 a	97 c	97 bc	100 a	98 a	96 a-c	92 b-e	191 ab
<b>Preemergence/POST II (4-collar corn)</b>														
Balance Flexx / Laudis + MSO + 28%N	3 oz / 3 oz + 1% + 1.5 qt	61 g	97 a	87 fg	86 f-h	95 ab	98 a	98 b	97 bc	96 bc	98 a	97 ab	95 a-d	188 a-c
Harness / Ignite + AMS	1.75 pt / 22 oz + 2 qt	80 bc	98 a	89 c-f	91 c-e	95 ab	98 a	98 b	98 b	97 b	98 a	95 b-d	92 b-e	193 a
Harness / Laudis + MSO + 28%N	1.75 pt / 3 oz + 1% + 1.5 qt	85 b	97 a	90 c-e	91 b-d	80 cd	98 a	98 b	98 b	97 bc	98 a	95 a-c	92 c-e	191 ab
Breakfree / Resolve Q + Atrazine + Roundup Powermax + AMS	1 pt / 1.25 oz + 16 oz + 22oz + 3 qt	78 cd	98 a	86 fg	88 d-h	80 cd	98 a	98 b	98 b	97 bc	98 a	92 c-e	88 e-i	185 a-c
Harness / Roundup Weathermax + AMS	1.25 pt / 22 oz + 3 qt	80 bc	98 a	89 c-f	91 b-d	81 c	98 a	98 b	97 c	94 d	98 a	92 c	90 d-g	174 c
Lumax / Touchdown Total + AMS	3 pt / 24 oz + 3 qt	73 d-f	98 a	90 c-f	90 c-e	91 b	98 a	98 b	98 b	98 ab	98 a	92 c	89 d-h	189 a-c
Surestart / Durango + AMS	1.75 pt / 24 oz + 3 qt	76 c-e	98 a	90 c-e	90 c-f	76 cd	98 a	98 b	98 b	95 cd	98 a	95 b-d	91 c-f	184 a-c
Surestart / Durango + AMS	2.0 pt / 24 oz + 3 qt	80 bc	98 a	90 c-e	91 c-e	73 d	98 a	98 b	97 bc	94 d	98 a	95 b-d	91 c-f	176 bc
Surestart + Atrazine / Durango + AMS	2.0 pt + 2.0 pt / 24 oz + 3 qt	81 bc	98 a	89 c-f	89 d-g	98 ab	98 a	98 b	97 bc	98 ab	98 a	95 b-d	92 b-e	176 bc
Outlook / Roundup Weathermax + AMS	12 oz / 22 oz + 3 qt	68 f	98 a	91 cd	90 c-f	75 cd	98 a	98 b	97 bc	93 d	98 a	89 e	85 g-i	179 a-c
Outlook / Roundup Weathermax + Status + AMS	12 oz / 22 oz + 2.5 oz + 3 qt	71 ef	98 a	89 c-f	90 c-e	79 cd	98 a	98 b	97 c	95 cd	98 a	90 de	84 hi	184 a-c
Harness / Impact + Atrazine + MSO + 28%N	1.75 pt / 0.5 oz + 24 oz + 1% + 2.5%	86 b	98 a	92 c	93 bc	91 b	98 a	98 b	98 b	97 b	98 a	98 ab	97 a-c	186 a-c
Harness / Impact + Atrazine + Roundup Weathermax + AMS	1.25 pt / 0.5 oz + 16 oz + 22 oz + 3 qt	79 c	98 a	89 c-f	91 c-e	79 cd	98 a	98 b	97 c	96 bc	98 a	95 a-c	93 b-e	191 ab
<b>POST I (2-collar corn)/POST III (regrowth)</b>														
Roundup Weathermax + AMS / Roundup Weathermax + AMS	22 oz + 3 qt / 22 oz + 3 qt	95 a	90 c	95 b	94 b	100 a	95 b	98 b	98 b	100 a	91 b	98 ab	98 ab	175 bc
<b>POST I (2-collar corn)</b>														
Surestart + Durango + AMS	1.75 pt + 24 oz + 3 qt	100 a	97 a	90 c-f	89 d-g	100 a	98 a	98 b	97 bc	100 a	98 a	92 c-e	91 c-g	179 a-c
Halex GT + Atrazine + NIS + AMS	3.6 pt + 16 oz + 0.25% + 3 qt	100 a	97 a	88 d-f	88 e-h	100 a	98 a	98 b	98 b	100 a	98 a	93 b-e	89 e-i	182 a-c
<b>POST II (4-collar corn)</b>														
Require Q + Atrazine + Roundup Powermax + AMS	4 oz + 16 oz + 22 oz + 3 qt	0 h	97 a	87 e-g	87 e-h	0 e	98 a	98 b	97 bc	0 e	98 a	92 c-e	83 i	188 a-c
Resolve Q + Callisto + Roundup Powermax + AMS	1.25 oz + 1 oz + 16 oz + 3 qt	0 h	97 a	86 fg	85 hi	0 e	98 a	98 b	97 c	0 e	98 a	95 b-d	88 e-i	188 a-c
Steadfast Q + Impact + Atrazine + MSO + AMS	1.5 oz + 0.5 oz + 16 oz + 1% + 3 qt	0 h	92 a	84 g	81 i	0 e	98 a	98 b	97 c	0 e	98 a	91 c-e	86 f-i	175 bc
Resolve Q + Atrazine + Roundup Powermax + AMS	1.25 oz + 16 oz + 22 oz + 3 qt	0 h	97 a	86 fg	86 gh	0 e	98 a	98 b	97 c	0 e	98 a	91 c-e	85 g-i	189 a-c
<b>Checks</b>														
Weedy check		0 h	0 e	0 i	0 k	0 e	0 c	0 d	0 d	0 e	0 c	0 f	0 j	100 d
Weed-free		100 a	98 a	100 a	100 a	100 a	99 a	100 a	100 a	100 a	99 a	100 a	100 a	188 a-c
	LSD (0.10)	6.0	1.8	3.3	3.6	8.6	1.3	0.4	1.2	2.0	1.9	5.0	6.0	15.5

<sup>a</sup> 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.

<sup>b</sup> Yield adjusted to 15.5% moisture.