

## **Annual weed control with pre-mixed soil applied herbicides in corn at Lamberton, MN in 2009.**

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The objective of this study was to evaluate pre-mixed soil applied products for annual grass and annual broadleaf weed control in corn. This study was conducted on a Ves loam soil containing 4.3% organic matter, pH 6.7 and soil test P and K levels of 38 and 390 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 2008 and was fall chiseled. The area was fertilized with 150 lbs of nitrogen. On May 6, 2009, Pioneer '35F44' 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 7	May 28	June 11	June 19
Treatment	PRE	POST I	POST II	POST III
Temperature (F)				
air	52	48	66	70
soil (4 inch)	52	58	64	72
Relative humidity (%)	50	71	40	64
Wind (mph)	W 8	SW 5	N 9	NW 7
Sky	cloudy	clear	p. cloudy	p. cloudy
Soil moisture	moist	dry	moist	dry
Corn				
leaf no.	-	V2	V5	V7
height (inch)	-	4	10	18
Green foxtail				
leaf no.	-	2 to 3	3 to 4	3 to 4
height (inch)	-	0.5 to 1.5	4 to 6	3 to 4
no./ft <sup>2</sup>	-	23	26	3
Common lambsquarters				
leaf no.	-	2 to 4	4 to 6	2 to 3
height (inch)	-	0.5 to 1.5	4 to 6	1 to 2
no./ft <sup>2</sup>	-	9	10	<1
Tall waterhemp				
leaf no.	-	1 to 2	2 to 4	2 to 4
height (inch)	-	0.25 to 1.0	3 to 4	1 to 3
no./ft <sup>2</sup>	-	6	6	<1
Rainfall after application (inch)				
1 week	0.72	0.05	1.02	0.52
2 week	0.00	1.40	0.52	0.23
3 week	0.45	1.02	0.23	1.46

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

**Table. Annual weed control with pre-mixed soil applied herbicides in corn at Lamberton, MN in 2009 (Getting).**

Treatment <sup>a</sup>	Rate (oz/A, pt/A, qt/A, or %)	Green foxtail				Common lambsquarters				Tall waterhemp				Yield <sup>b</sup> (bu/A)
		Jun 2	Jun 12	Jun 24	Aug 18	Jun 2	Jun 12	Jun 24	Aug 18	Jun 2	Jun 12	Jun 24	Aug 18	
<b>Preemergence/POST II (4 to 6-inch weeds)</b>														
Surestart / Durango + AMS	1.75 pt / 24 oz + 3 qt	89 b-d	86 b-d	99 a	98 bc	84 ef	84 e-g	99 a	99 a	97 a-c	95 b-d	99 a	99 a	205 a
Surestart / Durango + AMS	2 pt / 24 oz + 3 qt	83 c-e	83 b-e	99 a	98 bc	84 ef	84 e-g	99 a	99 a	98 ab	95 b-e	99 a	99 a	205 a
Surestart + Aatrex / Durango + AMS	2 pt + 2 pt / 24 oz + 3 qt	91 a-c	88 b-d	99 a	99 ab	90 b-e	88 b-g	99 a	99 a	97 a-c	97 a-c	99 a	99 a	208 a
Surestart / Durango + AMS	2.5 pt / 24 oz + 3 qt	91 a-c	85 b-d	99 a	99 ab	86 c-f	84 e-g	99 a	99 a	97 bc	96 b-d	99 a	99 a	205 a
Surestart / Durango + AMS	3 pt / 24 oz + 3 qt	94 ab	92 ab	99 a	99 a	93 a-c	90 b-e	99 a	99 a	98 ab	97 a-c	99 a	99 a	207 a
Harness / Durango + AMS	1.2 pt / 24 oz + 3 qt	93 ab	88 bc	99 a	99 ab	48 g	53 h	99 a	98 b	96 c	93 de	99 a	99 b	198 a
Harness Xtra / Durango + AMS	2.6 pt / 24 oz + 3 qt	91 a-c	88 b-d	99 a	99 a	88 b-f	85 d-g	99 a	99 a	98 ab	97 a-c	99 a	99 a	208 a
Bicep II Magnum / Durango + AMS	2.1 pt / 24 oz + 3 qt	81 de	78 d-f	99 a	99 a	85 d-f	81 fg	99 a	99 a	98 ab	94 c-e	99 a	99 a	196 a
Guardsman Max / Durango + AMS	1.9 pt / 24 oz + 3 qt	78 ef	81 c-e	99 a	99 a	83 f	80 g	99 a	99 a	96 bc	90 f	99 a	99 a	199 a
Lumax / Durango + AMS	2.5 pt / 24 oz + 3 qt	66 g	68 fg	99 a	99 a	91 b-d	86 c-g	99 a	99 a	97 bc	92 ef	99 a	99 a	198 a
Lexar / Durango + AMS	3 pt / 24 oz + 3 qt	63 g	65 g	99 a	99 ab	93 a-c	93 a-c	99 a	99 a	98 ab	93 de	99 a	99 a	199 a
Lumax / Durango + AMS	4 pt / 24 oz + 3 qt	69 fg	64 g	99 a	99 a	93 a-c	92 a-d	99 a	99 a	97 a-c	96 b-d	99 a	99 a	199 a
Lexar / Durango + AMS	4.5 pt / 24 oz + 3 qt	79 e	74 e-g	99 a	99 ab	94 ab	94 ab	99 a	99 a	98 ab	97 ab	99 a	99 a	201 a
Camix / Durango + AMS	2.5 pt / 24 oz + 3 qt	65 g	68 fg	99 a	99 ab	89 b-f	89 b-f	99 a	99 a	96 bc	96 b-d	99 a	99 a	201 a
<b>POST I (1-collar corn)/POST III (regrowth)</b>														
Durango + AMS / Durango + AMS	24 oz + 3 qt / 24 oz + 3 qt	99 a	99 a	99 a	97 c	99 a	99 a	99 a	99 a	99 a	99 a	99 a	99 a	205 a
<b>Checks</b>														
Weedy check	-	0 h	0 h	0 b	0 d	0 h	0 i	0 b	0 c	0 d	0 g	0 b	0 c	39 b
	LSD (0.10)	9.1	10.3	ns	1.1	6.7	7.8	ns	0.6	2.1	3.0	ns	0.1	13.8

<sup>a</sup> AMS = liquid spray grade ammonium sulfate.

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