

## **Annual weed control with soil applied herbicides in soybeans at Lamberton, MN in 2008.**

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The objective of this study was to evaluate soil applied herbicides for annual grass and annual broadleaf weed control in glyphosate-resistant soybeans. 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. On May 20, 2008 the preplant incorporated treatment was applied and tilled twice with a field cultivator set to till 3 to 4 inches deep and operated at 5 to 6 mph. The same day, Asgrow 'AG 2002' glyphosate-resistant tolerant soybeans were planted in 30-inch rows at a seeding rate of 160,000 seeds/A. On July 29, all plots were treated with Warrior for soybean aphid control. 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 20	May 21	June 18	June 23	July 15
Treatment	PPI	PRE	POST I	POST II	POST III
Temperature (F)					
air	57	39	77	75	84
soil (4 inch)	62	52	82	78	86
Relative humidity (%)	33	65	32	39	55
Wind (mph)	NW 10	calm	calm	calm	N 6
Sky	clear	clear	p. cloudy	p. cloudy	clear
Soil moisture	dry	dry	dry	dry	dry
Soybean					
leaf no.	-	-	V2	V3	R2
height (inch)	-	-	5	6	22
Yellow foxtail					
leaf no.	-	-	3 to 4	3 to 5	2 to 4
height (inch)	-	-	3 to 4	5 to 6	3 to 5
no./ft <sup>2</sup>	-	-	70	49	<1
Common lambsquarters					
leaf no.	-	-	3 to 5	6 to 8	-
height (inch)	-	-	2 to 4	3 to 6	-
no./ft <sup>2</sup>	-	-	3	4	-
Tall waterhemp					
leaf no.	-	-	2 to 4	4 to 6	3 to 5
height (inch)	-	-	2 to 4	3 to 5	3 to 5
no./ft <sup>2</sup>	-	-	11	12	<1
Rainfall after application (inch)					
1 week	0.12	0.18	0.00	0.61	1.14
2 week	0.93	0.87	0.61	0.00	1.97
3 week	1.54	1.57	0.00	0.02	0.22

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

**Table. Annual weed control with soil applied herbicides in soybeans at Lamberton, MN in 2008 (Getting).**

Treatment <sup>a</sup>	Rate (oz/A, pt/A, qt/A or %)	Yellow foxtail				Common lambsquarters				Tall waterhemp				Yield (bu/A) <sup>b</sup>
		Jun 20	Jul 2	Jul 16	Sep 25	Jun 20	Jul 2	Jul 16	Sep 25	Jun 20	Jul 2	Jul 16	Sep 25	
<b>Preplant Incorporate/POST II (4 to 6-inch weeds)</b>														
Prowl H2O / Touchdown Total + AMS	2.5 pt / 24 oz + 2%	84 a	100 a	96 a	93 ab	89 b	100 a	100 a	100 a	80 b	100 a	100 a	100 a	50.0 ab
<b>Preemergence/POST II (4 to 6-inch weeds)</b>														
Prefix / Touchdown Total + AMS	1.5 pt / 24 oz + 2%	84 a	100 a	94 a	92 a-c	87 b	100 a	100 a	100 a	95 a	100 a	100 a	100 a	47.3 b
Prefix / Touchdown Total + AMS	2 pt / 24 oz + 2%	89 a	100 a	95 a	94 a	84 b	100 a	100 a	100 a	96 a	100 a	100 a	100 a	47.5 b
Boundary / Touchdown Total + AMS	1.5 pt / 24 oz + 2%	87 a	100 ab	95 a	90 a-d	85 b	100 a	100 a	100 a	97 a	100 a	100 a	100 a	48.8 ab
Valor / Touchdown Total + AMS	2 oz / 24 oz + 2%	84 a	100 a	91 bc	89 c-e	98 a	100 a	100 a	100 a	98 a	100 a	100 a	96 b	50.7 ab
Enlite / Touchdown Total + AMS	2.8 oz / 24 oz + 2%	86 a	100 a	90 c	88 de	98 a	100 a	100 a	100 a	98 a	100 a	100 a	100 a	46.5 b
Authority First / Touchdown Total + AMS	3.2 oz / 24 oz + 2%	56 b	98 b	94 a	90 b-e	96 a	100 a	100 a	100 a	96 a	100 a	100 a	100 a	52.7 a
Authority MTZ / Touchdown Total + AMS	10 oz / 24 oz + 2%	45 c	100 ab	95 a	91 a-d	88 b	100 a	100 a	100 a	97 a	100 a	100 a	100 a	49.8 ab
Authority Assist / Touchdown Total + AMS	5 oz / 24 oz + 2%	53 bc	99 ab	95 a	93 a-c	97 a	100 a	100 a	100 a	96 a	100 a	100 a	100 a	49.8 ab
<b>POST I (3 to 4-inch weeds)</b>														
Touchdown Total + AMS	24 oz + 3 qt	0 d	100 ab	94 a	86 e	0 c	100 a	100 a	100 a	0 c	100 b	100 a	89 c	47.7 ab
<b>POST I (4-inch weeds)/POST III (soybean canopy)</b>														
Touchdown Total + AMS / Touchdown Total + AMS	24 oz + 3 qt / 24 oz + 3 qt	0 d	99 ab	95 a	91 a-d	0 c	100 b	100 a	100 a	0 c	100 b	97 b	95 b	50.3 ab
<b>Check</b>														
Weedy Check	-	0 d	0 c	0 d	0 f	0 c	0 c	0 b	0 b	0 c	0 c	0 c	0 d	10.9 c
	LSD (0.10)	8.3	1.4	2.3	4.0	7.2	0.3	ns	ns	3.8	0.5	0.8	3.1	4.98

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

<sup>b</sup> Yield adjusted to 13% moisture.