

## Annual weed control with Optill in soybeans at Lamberton, MN in 2009.

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The objective of this study was to evaluate Optill applied PRE and Optill + Prowl applied PPI for annual grass and annual broadleaf weed control in glyphosate-resistant soybeans. This study was conducted on a Normania loam soil containing 4.2% organic matter, pH 6.1 and soil test P and K levels of 68 and 376 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 2008 and was fall chiseled. On May 18, 2009 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, Pioneer '91M80' glyphosate-resistant soybeans were planted in 30-inch rows at a seeding rate of 160,000 seeds/A. On July 29, all plots were treated with bifenthrin for soybean aphid and spider mite 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 18	May 18	June 15
Treatment	PPI	PRE	POST
Temperature (F)			
air	81	84	64
soil (4 inch)	72	72	64
Relative humidity (%)	28	22	70
Wind (mph)	calm	SW 5	SE 9
Sky	clear	clear	cloudy
Soil moisture	dry	dry	dry
Soybean			
leaf no.	-	-	V2
height (inch)	-	-	5
Yellow foxtail			
leaf no.	-	-	2 to 4
height (inch)	-	-	3 to 5
no./ft <sup>2</sup>	-	-	58
Common lambsquarters			
leaf no.	-	-	4 to 6
height (inch)	-	-	3 to 4
no./ft <sup>2</sup>	-	-	4
Tall waterhemp			
leaf no.	-	-	2 to 4
height (inch)	-	-	2 to 4
no./ft <sup>2</sup>	-	-	2
Rainfall after application (inch)			
1 week	0.34	0.34	1.22
2 week	0.16	0.16	0.46
3 week	1.36	1.36	0.09

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

**Table. Annual weed control with Optill in soybeans at Lamberton, MN in 2009 (Getting).**

Treatment <sup>a</sup>	Rate (oz/A, pt/A, lb/A or %)	Yellow foxtail				Common lambsquarters				Tall waterhemp				Yield (bu/A) <sup>c</sup>
		Jun 15	Jun 25	Jul 13	Sep 15	Jun 15	Jun 25	Jul 13	Sep 15	Jun 15	Jun 25	Jul 13	Sep 15	
<b>Preplant Incorporate/POST (3 to 5-inch weeds)</b>														
Optill + Prowl H2O/ Roundup Powermax + AMS	2 oz + 32 oz / 22 oz + 2.5 lb	68 a	98 a	95 a	86 a	89 a	99 a	99 a	98 a	96 a	99 a	99 a	98 a	51.4 a
<b>Preemergence/POST II (6-inch weeds)</b>														
Optill / Roundup Powermax + AMS	2 oz / 22 oz + 2.5 lb	20 c	98 a	91 b	81 b	53 b	99 a	99 a	99 a	94 b	99 a	99 a	98 a	49.4 a
Valor SX / Roundup Powermax + AMS	2.5 oz / 22 oz + 2.5 lb	30 b	98 a	90 b	78 c	89 a	99 a	99 a	99 a	95 ab	99 a	99 a	99 a	50.3 a
<b>Checks</b>														
Weedy Check	-	0 d	0 b	0 c	0 d	0 c	0 b	0 b	0 b	0 c	0 b	0 b	0 b	7.4 b
	LSD (0.10)	6.9	ns	1.5	3.4	12.7	ns	ns	1.3	1.8	ns	ns	1.9	3.99

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

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