

Weed control with soil applied Prefix and Boundary in soybeans at Lamberton, MN in 2006. Getting, Jodie K.

The objective of this study was to evaluate Prefix, [fomesafen & s-metolachlor] and Boundary [metribuzin & s-metolachlor] applied preemergence for annual grass and annual broadleaf weed control in soybean. This study was conducted on a Normania loam soil containing 4.2% organic matter, pH 6.5 and soil test P and K levels of 34 and 370 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 2005 and was fall chiseled. The area was fertilized with 39-100-100 on April 14, 2006. On May 17, 2006, Asgrow 'AG2107' glyphosate resistant soybeans were planted in 30-inch rows at a seeding rate of 160,000 seeds/A. On July 28, all plots were treated with Warrior (lambda-cyhalothrin) 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 18	June 8	June 27
Treatment	PRE	POST I	POST II
Temperature (F)			
air	57	61	70
soil (4 inch)	56	70	70
Relative humidity (%)	40	59	46
Wind (mph)	NW 8	N7	NW 8
Sky	cloudy	cloudy	p. cloudy
Soil moisture	dry	moist	dry
Soybean			
leaf no.	-	V1	V5
height (inch)	-	5	13
Yellow foxtail			
leaf no.	-	3 to 5	2 to 4
height (inch)	-	4 to 6	2 to 4
no./ft ²	-	21	13
Common lambsquarters			
leaf no.	-	4 to 6	3 to 4
height (inch)	-	3 to 4	1 to 2
no./ft ²	-	1	<1
Tall waterhemp			
leaf no.	-	3 to 4	2 to 4
height (inch)	-	3 to 4	1 to 3
no./ft ²	-	4	3
Rainfall after application (inch)			
1 week	0.31	1.63	0.00
2 week	0.09	2.30	0.27
3 week	4.26	1.11	0.88

May precipitation totaled 2.44 inches compared to the long-term average of 3.34 inches. Above normal precipitation in June resulted in 9.39 inches compared to the long-term average of 3.77 inches. As a result, there was a heavy flush of new emerging weeds. The subsoil moisture helped carry the crop through a drier than normal July. The growing degree days were slightly below average for May and June but above average for July. The predominate weed species were yellow foxtail, common lambsquarters, and tall waterhemp. None of the herbicide treatments caused visible crop injury. The PRE treatments received only 0.40 inches of rain within the first two weeks of application, resulting in decreased weed control prior to POST application. On June 5, prior to POST herbicide application, Prefix at 1.5, 2.0, 2.5, and Boundary gave 53, 65, 73 and 59% yellow foxtail control, respectively. Those same four treatments provided 58, 79, 86, and 73% control of common lambsquarters, respectively, and 65, 86, 88, and 80% tall waterhemp control, respectively. On June 19, all herbicide treatments had 95% or greater yellow foxtail control and 100% common lambsquarters and tall waterhemp control. In August, Touchdown Total + AMS applied POST I gave 79, 95, and 69% control of yellow foxtail, common lambsquarters, and tall waterhemp, respectively. All other treatments resulted in 93% or greater control of these weeds. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Weed control with soil applied Prefix and Boundary in soybeans at Lamberton, MN in 2006. (Getting).

Treatment ^a	Rate (oz/A, pt/A, or lb/A)	Yellow foxtail				Common lambsquarters				Tall waterhemp				Yield (bu/A) ^b
		6/5	6/19	7/3	8/30	6/5	6/19	7/3	8/30	6/5	6/19	7/3	8/30	
		-----(% control)-----												
<u>Preemergence/POST I (4 to 6-inch weeds)</u>														
Prefix / Touchdown Total + AMS	1.5 pt / 24 oz + 2.5 lb	53	100	92	94	58	100	91	98	65	100	97	96	65.1
Prefix / Touchdown Total + AMS	2 pt / 24 oz + 2.5 lb	65	100	96	97	79	100	98	97	86	100	98	97	66.0
Prefix / Touchdown Total + AMS	2.5 pt / 24 oz + 2.5 lb	73	100	96	97	86	100	100	98	88	100	98	98	64.0
Boundary / Touchdown Total + AMS	1.5 pt / 24 oz + 2.5 lb	59	100	94	94	73	100	99	98	80	100	91	93	64.7
<u>POST I (4 to 6-inch weeds)</u>														
Touchdown Total + AMS	24 oz + 2.5 lb	-	95	85	79	-	100	96	95	-	100	73	69	57.6
<u>POST I (4 to 6-inch weeds)/POST II (regrowth)</u>														
Touchdown Total + AMS /	24 oz + 2.5 lb /	-	98	100	98	-	100	100	98	-	100	100	98	65.9
Touchdown Total + AMS	24 oz + 2.5 lb													
Weedy Check	-	0	0	0	0	0	0	0	0	0	0	0	0	30.4
	LSD (0.10)	10.0	1.1	2.3	4.3	10.7	ns	3.2	1.9	9.5	ns	3.2	3.5	3.72

^a AMS = spray grade ammonium sulfate.

^b Yield adjusted to 13% moisture.