

Herbicide performance in soybeans at Lamberton, MN in 2001. Getting, Jodie K., Jeffrey L. Gunsolus, and Thomas R. Hoverstad. The objective of this study was to evaluate soybean herbicide combinations for annual grass and annual broadleaf weed control in glyphosate-resistant soybeans. This study was conducted on a Normania loam soil containing 4.4% organic matter, pH 6.2 and soil test P and K levels of 60 and 422 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 2000 and was fall chiseled. On May 28, 2001 preplant incorporated treatments were 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 2101' glyphosate-resistant soybeans were planted in 30-inch rows at a seeding rate of 160,000 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 28	May 29	June 21	June 28	July 27
Treatment	PPI	PRE	POST I	POST II	POST III
Temperature (F)					
air	64	59	55	72	63
soil (4 inch)	60	58	66	80	70
Relative humidity (%)	45	67	88	69	95
Wind (mph)	calm	calm	W 0-5	S 5-8	S 8-10
Sky	p. cloudy	cloudy	clear	p. cloudy	cloudy
Soil moisture	moist	moist	dry	moist	moist
Soybean					
leaf no.	-	-	unifoliolate	V2	R1
height (inch)	-	-	4	6	24
Yellow foxtail					
leaf no.	-	-	2 to 4	3 to 5	4 to 6
height (inch)	-	-	2 to 4	6 to 8	6 to 8
no./ft <sup>2</sup>	-	-	48	37	< 1
Common lambsquarters					
leaf no.	-	-	2 to 4	6 to 8	-
height (inch)	-	-	2 to 4	3 to 5	-
no./ft <sup>2</sup>	-	-	7	6	-
Redroot pigweed					
leaf no.	-	-	2 to 4	3 to 5	-
height (inch)	-	-	1 to 3	3 to 5	-
no./ft <sup>2</sup>	-	-	1	<1	-
Rainfall after application (inch)					
1 week	0.17	0.17	0.00	0.50	0.17
2 week	0.91	0.91	0.50	0.00	0.00
3 week	0.81	0.81	0.00	0.00	0.73

None of the herbicide treatments caused visible crop injury 14 days after treatment. On June 21, prior to the POST treatments, flumetsulam gave 49 to 56% yellow foxtail control and 61 to 70% common lambsquarters control. [S-metolachlor & metribuzin] gave 94 to 95% yellow foxtail control. In September ratings, POST applied imazamox + acifluorfen resulted in 84% yellow foxtail control. Flumetsulam followed by chloransulam + clethodim + lactofen gave 79% common lambsquarters control. Imazamox + acifluorfen and fomesafen + [fluazifop-P butyl & fenoxaprop] + thifensulfuron gave 89% control. All other treatments gave 97% or greater control. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Herbicide performance in soybeans at Lamberton, MN in 2001 (Getting, Gunsolus and Hoverstad).

Treatment <sup>a</sup>	Rate (lb/A or %)	SETLU				CHEAL				Yield (bu/A) <sup>b</sup>
		6/21	7/6	7/26	9/11	6/21	7/6	7/26	9/11	
<u>Preplant incorporate 2X/POST I (2 to 4-inch weeds)</u>										
Pend/Immx+Acif+NIS+AMS	1.0/0.031+0.1875+0.25%+3.4	91	90	91	94	98	100	97	99	43.4
Pend/[Imep&glyphosate]+NIS+AMS	1.0/[0.063&0.75]+0.25%+3.4	84	99	98	99	97	100	100	100	40.7
Sulfentrazone+Trif/Fome+COC+AMS	0.21+0.75/0.18+1.0%+2.5	85	89	86	90	97	99	99	98	41.7
<u>Preemergence/POST II (4 to 6-inch weeds)</u>										
Flumetsulam/glyphosate <sup>1</sup> +AMS	0.053/0.75+2.5	49	99	97	99	61	91	98	99	43.3
Flumetsulam/Clsm+Clet+Lact +COC+AMS	0.053/0.016+0.094+0.094 +0.625%+2.5	56	96	95	97	70	81	75	79	42.1
Sulfentrazone+Clms/[Flfp-P&Fenx] +COC+AMS	0.25+0.031/[0.156&0.044] +0.625%+2.5	83	95	95	98	98	100	99	100	41.4
Sulfentrazone+Clms/glyphosate <sup>1</sup> +AMS	0.25+0.031/0.56+2.5	83	99	99	100	98	100	100	100	42.0
Sulfentrazone+Clom/glyphosate <sup>2</sup> +AMS	0.19+0.375/0.38+2.5	84	99	98	99	93	94	95	99	42.5
Flumioxazin/Clms+Clet+COC+AMS	0.078/0.016+0.094+1.0%+2.5	88	96	97	99	98	99	94	97	42.5
Flumioxazin/glyphosate <sup>2</sup> +AMS	0.0625/0.75+2.5	85	100	98	99	96	100	99	100	44.4
[S-meto&Metr]/Fome +[Flfp-P&Fenx]+COC+AMS	[0.98&0.23]/0.24 +[0.156&0.044]+1.0%+2.5	95	98	97	98	96	100	98	100	41.0
[S-meto&Metr]/glyphosate <sup>3</sup> +AMS	[0.98&0.23]/0.75+2.5	94	99	99	99	90	99	100	100	42.8
Alac/glyphosate <sup>2</sup> +AMS	2.0/0.75+2.5	94	98	98	99	86	95	99	100	41.8
[FOE 5043&Metr]/glyphosate <sup>2</sup> +AMS	[0.15&0.23]/0.56++2.5	86	100	98	99	88	95	98	100	42.7
Sulfentrazone/glyphosate <sup>2</sup> +AMS	0.19/0.75+2.5	84	99	98	100	97	100	100	100	41.1
Sulfentrazone/Fome+Qufp-P +COC+AMS	0.21/0.24+0.06 +1.0%+2.5	86	93	95	98	98	100	100	100	40.8
<u>POST II (4 to 6-inch weeds)/POST III (soybean canopy)</u>										
Glyphosate <sup>2</sup> +AMS/glyphosate <sup>2</sup> +AMS	0.75+2.5/0.75+2.5	-	97	96	98	-	98	99	100	41.9
<u>POST I (2 to 4-inch weeds)</u>										
Fome+[Flfp-P&Fenx] +Thif+COC+AMS	0.24+[0.156&0.044] +0.002+1.0%+2.5	-	90	91	93	-	93	84	89	41.5
Imazamox+Acif+NIS+AMS	0.031+0.1875+0.25%+3.4	-	78	75	84	-	92	90	89	39.4
Glyphosate <sup>1</sup> +Clsm+AMS	0.75+0.016+2.5	-	99	97	99	-	89	93	97	43.7
Glyphosate <sup>3</sup> +AMS	0.75+2.5	-	99	99	99	-	98	100	100	42.7
Glyphosate <sup>2</sup> +AMS	0.75+2.5	-	99	98	98	-	95	98	100	40.4
Weedy Check	-	0	0	0	0	0	0	0	0	18.5
Weed-free check	-	100	100	100	100	100	100	100	100	41.8
	LSD (0.10)	6.8	3.0	2.7	1.7	9.0	2.9	2.9	2.5	3.56

<sup>a</sup> Acif or acifluorfen = Ultra Blazer 2L; Alac or alachlor = Lasso 4L; Clet or clethodim = Select 2L; Clom or clomazone = Command 3ME; Clsm or chloransulam = FirstRate 84WG; [Flfp-P&Fenx] or [fluazifop-P & fenoxaprop] = Fusion 2.56F; Flms or flumetsulam = Python 85DF; Flumioxazin = Valor 50DF; [FOE 5043&Metr] or [FOE 5043 & metribuzin] = Domain 60DF; Fome or fomesafen = Flexstar 1.88L; glyphosate<sup>1</sup> = Glyphomax Plus 3L; glyphosate<sup>2</sup> = Roundup Ultra Max 3.75L; glyphosate<sup>3</sup> = Touchdown IQ 3L; [Imep&glyphosate] or [imazethapyr & glyphosate] = Extreme 2.17L; imazamox = Raptor 1L; Lact or lactofen = Cobra 2L; Pend or pendamethalin = Prowl 3.3L; Qufp-P or quizalofop-P = Assure II 0.88E; [s-meto&metr] or [s-metolachlor & metribuzin] = Boundary 7.8EC; sulfentrazone = Authority 75DF; Thif or thifensulfuron = Harmony GT 75DF; Trif or trifluralin = Treflan 4E; COC = crop oil concentrate, Class Additive 17%; NIS = nonionic surfactant, Class Preference; 28%N = an aqueous solution of urea and ammonium nitrate; AMS = spray grade ammonium sulfate.

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