

Herbicide performance in soybeans at Lamberton, MN in 2004. 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 4.2% organic matter, pH 6.5 and soil test P and K levels of 60 and 316 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 2003 and was fall chiseled. On May 14, 2004 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 2105' 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 14	May 14	June 15	June 22	July 20
Treatment	PPI	PRE	POST I	POST II	POST III
Temperature (F)					
air	46	50	64	67	79
soil (4 inch)	52	54	64	70	78
Relative humidity (%)	60	45	68	48	79
Wind (mph)	W 2-5	W 2-5	calm	W 2-5	calm
Sky	p. cloudy	p. cloudy	p. cloudy	clear	cloudy
Soil moisture	dry	dry	moist	dry	dry
Soybean					
leaf no.	-	-	V1	V2	V7
height (inch)	-	-	4	6	20
Yellow foxtail					
leaf no.	-	-	2 to 4	4 to 5	3 to 5
height (inch)	-	-	2 to 4	5 to 7	4 to 6
no./ft <sup>2</sup>	-	-	87	97	2
Common lambsquarters					
leaf no.	-	-	2 to 5	6 to 8	6 to 8
height (inch)	-	-	2 to 3	4 to 5	4 to 6
no./ft <sup>2</sup>	-	-	1	2	<1
Redroot pigweed					
leaf no.	-	-	2 to 5	4 to 6	4 to 6
height (inch)	-	-	2 to 3	3 to 5	4 to 6
no./ft <sup>2</sup>	-	-	2	3	<1
Rainfall after application (inch)					
1 week	1.90	1.90	0.56	0.48	1.43
2 week	2.37	2.37	0.48	0.87	0.37
3 week	2.59	2.59	0.87	1.43	1.33

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

Table. Herbicide performance in soybeans at Lamberton, MN in 2004 (Getting, Gunsolus and Hoverstad).

Treatment <sup>a</sup>	Rate	Injury <sup>b</sup> 6/25	Yellow foxtail				Common lambsquarters				Redroot pigweed				Yield (bu/A) <sup>c</sup>
			6/14	6/25	7/22	9/23	6/14	6/25	7/22	9/23	6/14	6/25	7/22	9/23	
<u>Preemergence</u>	(oz/A, pt/A, lb/A or %)	(%)	-----(% control)-----												
Pendimax + Gangster V + Gangster FR	3 pt + 3 oz + 0.6 oz	1	96	90	76	78	98	100	94	100	98	100	98	98	48.9
<u>Preplant incorporate 2X/POST I (4-inch weeds)</u>															
Prowl H2O /	43 oz /	13	88	97	90	93	95	100	97	100	97	100	96	98	55.8
Raptor + Ultra Blazer + NIS + AMS	4 oz + 8 oz + 0.25% + 2.5 lb	14	91	100	95	97	98	100	99	98	97	100	95	94	53.9
Pursuit Plus /	2.5 pt /	14	91	100	95	97	98	100	99	98	97	100	95	94	53.9
Rezult B + Rezult G + NIS + AMS	1.6 pt + 1.6 pt + 0.25% + 2.5 lb	14	91	100	95	97	98	100	99	98	97	100	95	94	53.9
Prowl H2O / Extreme + NIS + AMS	43 oz / 3 pt + 0.125% + 2.5 lb	2	85	100	97	97	90	100	99	100	90	100	99	98	54.5
<u>Preemergence/POST I (4-inch weeds)</u>															
Valor SX + FirstRate /	3 oz + 0.6 oz /	23	90	100	90	93	98	100	100	100	98	100	100	100	54.6
Phoenix + V-10137 + AMS	10 oz + 16 oz + 2.0 lb	23	90	100	90	93	98	100	100	100	98	100	100	100	54.6
Pendimax / FirstRate + Select + Cobra + COC + AMS	3 pt / 0.3 oz + 8 oz + 6 oz + 1% + 2.5 lb	20	81	100	93	94	95	100	90	94	88	100	97	99	52.6
Boundary /	1.5 pt /	15	93	100	96	96	97	100	100	100	97	100	100	100	54.7
Flexstar + Fusion + COC + AMS	16 oz + 8 oz + 1.0% + 2.5 lb	15	93	100	96	96	97	100	100	100	97	100	100	100	54.7
Authority /	5.3 oz /	14	64	100	95	96	98	100	99	100	97	100	100	100	55.3
Flexstar + Assure II + COC + AMS	16 oz + 9 oz + 1.0% + 2.5 lb	14	64	100	95	96	98	100	99	100	97	100	100	100	55.3
<u>Preemergence/POST II (6-inch weeds)</u>															
Intrro / Roundup Weathermax + AMS	4 pt / 22 oz + 2.5 lb	0	91	90	93	97	97	95	100	100	97	98	96	99	56.0
Prowl H2O + Outlook /	1 pt + 12.6 oz /	0	95	92	95	97	96	96	100	100	97	99	99	99	54.3
Roundup Weathermax + AMS	22 oz + 2.5 lb	0	95	92	95	97	96	96	100	100	97	99	99	99	54.3
Gangster V+Gangster FR /	1.5 oz + 0.3 oz /	0	86	79	94	95	98	100	100	100	98	100	100	100	56.1
Roundup Weathermax + AMS	22 oz + 2.5 lb	0	86	79	94	95	98	100	100	100	98	100	100	100	56.1
Boundary / Touchdown Total + AMS	1.25 pt / 24 oz + 2.5 lb	0	90	91	95	97	98	98	99	100	98	100	99	100	55.8
Valor SX /	2 oz /	0	83	74	96	97	98	100	100	100	98	100	99	100	56.4
Roundup Weathermax + AMS	22 oz + 2.5 lb	0	83	74	96	97	98	100	100	100	98	100	99	100	56.4
Valor SX + Python /	1.5 oz + 0.5 oz /	0	80	71	96	98	98	100	100	100	98	100	100	100	56.3
Roundup Weathermax + AMS	22 oz + 2.5 lb	0	80	71	96	98	98	100	100	100	98	100	100	100	56.3
Authority /	4 oz /	0	65	54	97	98	97	99	100	100	97	100	100	100	55.2
Roundup Weathermax + AMS	22 oz + 2.5 lb	0	65	54	97	98	97	99	100	100	97	100	100	100	55.2
<u>POST I (4-inch weeds)</u>															
Flexstar + Fusion + Harmony GT + COC + AMS	16 oz + 10 oz + 0.04 oz + 1.0% + 2.5 lb	15	0	100	93	95	0	100	85	91	0	100	92	96	54.2
Flexstar + Fusion + FirstRate + COC + AMS	16 oz + 10 oz + 0.3 oz + 1.0% + 2.5 lb	10	0	100	91	94	0	100	86	89	0	100	90	90	55.0
<u>POST II (6-inch weeds)/POST III (soybean canopy)</u>															
Roundup Weathermax + AMS /	22 oz + 2.5 lb /	0	0	100	91	97	0	100	100	100	0	0	91	98	54.1
Roundup Weathermax + AMS	22 oz + 2.5 lb	0	0	100	91	97	0	100	100	100	0	0	91	98	54.1
<u>POST II (6-inch weeds)</u>															
GF-1279 + FirstRate + AMS	24 oz + 0.3 oz + 2.5 lb	0	0	0	97	98	0	0	98	100	0	0	97	100	54.7
Clearout 41 Plus + AMS	32 oz + 2.5 lb	0	0	0	97	97	0	0	100	99	0	0	96	100	54.9
GF-1279 + AMS	24 oz + 2.5 lb	0	0	0	97	97	0	0	95	98	0	0	94	98	55.1
Roundup Weathermax + AMS	22 oz + 2.5 lb	0	0	0	97	97	0	0	100	100	0	0	97	100	55.1
<u>Checks</u>															
Weedy Check	-	0	0	0	0	0	0	0	0	0	0	0	0	0	2.9
Weed-free check		0	100	100	100	100	100	100	100	100	100	100	100	100	55.6
	LSD (0.10)	2.8	5.4	4.2	2.5	3.1	2.7	1.6	3.9	2.4	3.4	0.7	3.4	2.8	1.86

<sup>a</sup> COC = crop oil concentrate; NIS = nonionic surfactant; AMS = spray grade ammonium sulfate.<sup>b</sup> Leaf burn.<sup>c</sup> Yield adjusted to 13% moisture.