

Herbicide performance in soybeans at Lamberton, MN in 2007. 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/sulfonylurea tolerant soybeans. This study was conducted on a Normania loam soil containing 4.7% organic matter, pH 6.3 and soil test P and K levels of 34 and 380 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 2006 and was fall chiseled. The area was fertilized with 140-60-60 on April 20, 2007. On May 15, 2007 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 Pioneer '91M92 RR/STS' glyphosate-resistant/sulfonylurea tolerant soybeans were planted in 30-inch rows at a seeding rate of 160,000 seeds/A. On August 7, all plots were treated with chlorpyrifos 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 15	May 16	June 11	June 15	July 2	July 2
Treatment	PPI	PRE	POST I	POST II	POST III	POST IV
Temperature (F)						
air	54	48	81	75	70	70
soil (4 inch)	55	56	76	84	74	74
Relative humidity (%)	54	50	62	69	80	80
Wind (mph)	NW 12	NW 8	S 5	SW 10	SW 8	SW 8
Sky	p. cloudy	clear	clear	cloudy	cloudy	cloudy
Soil moisture	dry	dry	dry	dry	dry	dry
Soybean						
leaf no.	-	-	V2	V2	R1	R1
height (inch)	-	-	6	8	20	20
Yellow foxtail						
leaf no.	-	-	3 to 5	3 to 5	2 to 4	4 to 6
height (inch)	-	-	3 to 5	5 to 7	2 to 4	8 to 10
no./ft <sup>2</sup>	-	-	7	10	2	7
Common lambsquarters						
leaf no.	-	-	4 to 6	6 to 8	2 to 3	6 to 8
height (inch)	-	-	2 to 4	4 to 5	1 to 2	4 to 6
no./ft <sup>2</sup>	-	-	2	1	<1	<1
Tall waterhemp						
leaf no.	-	-	3 to 5	3 to 6	-	-
height (inch)	-	-	2 to 4	3 to 5	-	-
no./ft <sup>2</sup>	-	-	1	2	-	-
Rainfall after application (inch)						
1 week	0.06	0.26	1.43	1.60	0.00	0.00
2 week	0.27	0.14	0.17	0.00	0.00	0.00
3 week	1.97	1.93	0.00	0.00	0.78	0.78

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

Table. Herbicide performance in soybeans at Lamberton, MN in 2007 (Getting, Gunsolus and Hoverstad).

Treatment <sup>a</sup>	Rate (oz/A, pt/A, lb/A or %)	Yellow foxtail				Common lambsquarters				Tall waterhemp				Yield (bu/A) <sup>b</sup>
		6/11	6/20	7/2	9/13	6/11	6/20	7/2	9/13	6/11	6/20	7/2	9/13	
-----(% control)-----														
<u>Preplant incorporate 2X/POST I (4-inch weeds)</u>														
Prowl H <sub>2</sub> O / Extreme + NIS + AMS	43oz / 3pt + 0.25% + 3qt	92	100	97	98	97	100	100	100	97	100	100	100	51.7
<u>Preemergence/POST I (4-inch weeds)</u>														
Boundary / Flexstar + Fusion + Harmony GT + MSO + 28%N	1.5pt / 16oz + 8oz + 0.125oz + 1.0% + 2.5%	90	100	97	97	88	100	100	100	97	100	100	100	54.0
<u>Preemergence/POST II (6-inch weeds)</u>														
Authority First / Roundup Original Max + AMS	3.2oz / 2 oz + 3qt	29	100	92	95	98	100	100	100	98	100	100	100	57.6
Authority First / Roundup Original Max + AMS	4oz / 22oz + 3qt	46	100	93	91	99	100	100	100	99	100	100	100	54.3
Intrro / Roundup Weathermax + AMS	2qt / 22oz + 3qt	89	100	97	97	96	100	100	100	97	100	100	100	51.5
Gangster V + Gangster FR / Roundup Original Max + AMS	1.5oz + 0.3oz / 22oz + 3qt	78	100	95	95	95	100	100	99	99	100	100	100	53.6
Prefix / Touchdown Total + AMS	1qt / 24oz + 3qt	86	100	98	98	93	100	100	100	97	100	100	100	52.6
Valor SX / Roundup Original Max + AMS	2oz / 22oz + 3qt	48	100	93	94	98	100	100	100	99	100	100	100	52.3
Valor SX + Python / Roundup Original Max + AMS	1.5oz + 0.5oz / 22oz + 3qt	33	100	89	96	98	100	100	100	98	100	100	100	57.2
Valor SX + Sencor / Roundup Original Max + AMS	1.75oz + 4oz / 22oz + 3qt	40	100	94	96	99	100	100	100	99	100	100	100	54.9
Sonic / Durango + AMS	3oz / 24oz + 3qt	25	100	91	91	98	100	100	100	98	100	100	100	53.0
FirstRate / Durango + AMS	0.3oz / 24oz + 3qt	0	100	93	93	51	100	100	100	90	100	100	100	54.0
Enlite / Roundup Original Max + AMS	2.83oz / 22oz + 3qt	38	100	94	97	98	100	100	100	98	100	100	100	55.3
<u>POST I (4-inch weeds)/POST III (soybean canopy)</u>														
Roundup Weathermax + AMS / Roundup Weathermax + AMS	22oz + 3qt / 22oz + 3qt	0	100	91	98	0	100	100	100	0	100	100	100	54.4
Durango + AMS / Durango + AMS	24oz + 3qt / 24oz + 3qt	0	100	91	97	0	100	100	100	0	100	100	100	52.6
Touchdown Total + AMS / Touchdown Total + AMS	24oz + 3qt / 24oz + 3qt	0	100	88	98	0	100	98	100	0	100	100	100	57.5
<u>POST I (4-inch weeds)/POST IV (soybean canopy)</u>														
Flexstar + COC / Touchdown Total + AMS	16oz + 1% / 24oz + 3qt	0	33	53	98	0	100	91	100	0	100	99	100	57.0
<u>POST II (6-inch weeds)</u>														
FirstRate + Durango + AMS	0.3oz + 24oz + 3qt	0	100	95	93	0	100	100	100	0	100	99	100	54.3
Harmony GT + Roundup Original Max + NIS + AMS	0.5oz + 22oz + 0.25% + 3qt	0	100	93	92	0	100	100	100	0	100	100	100	55.4
Harmony GT + Classic + Roundup Original Max + NIS + AMS	0.5oz + 0.33oz + 22oz + 0.25% + 3qt	0	100	93	95	0	100	100	100	0	100	100	100	56.7
Roundup Original Max + Resource + NIS + AMS	22oz + 2oz + 0.25% + 3qt	0	100	94	93	0	100	100	100	0	100	100	100	55.8
Roundup Weathermax + AMS	22oz + 3qt	0	100	90	93	0	100	100	100	0	100	100	100	55.3
<u>Checks</u>														
Weedy Check	-	0	0	0	0	0	0	0	0	0	0	0	0	37.6
Weed-free check	-	100	100	100	100	100	100	100	100	100	100	100	100	56.3
	LSD (0.10)	8.3	1.2	4.7	3.2	6.4	ns	0.9	ns	2.1	ns	0.7	ns	4.91

<sup>a</sup> COC = crop oil concentrate; MSO = methylated seed oil; NIS = nonionic surfactant; AMS = liquid spray grade ammonium sulfate; 28%N = an aqueous solution of urea and ammonium nitrate.

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