

Herbicide performance in soybeans at Lamberton, MN in 2005. 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 4.7% organic matter, pH 6.3 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 2004 and was fall chiseled. On May 24, 2005 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 Garst '1827' glyphosate-resistant/sulfonylurea tolerant soybeans were planted in 30-inch rows at a seeding rate of 160,000 seeds/A. On July 29, all plots were treated with lambda-cyhalothrin (Warrior) 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 24	May 24	June 17	June 21	July 18
Treatment	PPI	PRE	POST I	POST II	POST III
Temperature (F)					
air	68	75	75	70	72
soil (4 inch)	65	70	70	70	74
Relative humidity (%)	65	41	44	87	53
Wind (mph)	W 2-5	S 8-10	SE 5	NNE 5	W 10
Sky	p. cloudy	p. cloudy	clear	p. cloudy	clear
Soil moisture	dry	moist	dry	dry	dry
Soybean					
leaf no.	-	-	V2	V3	V9
height (inch)	-	-	5	6	24
Yellow foxtail					
leaf no.	-	-	2 to 4	2 to 4	3 to 5
height (inch)	-	-	2 to 4	5 to 6	4 to 6
no./ft <sup>2</sup>	-	-	50	51	<1
Common lambsquarters					
leaf no.	-	-	2 to 5	4 to 6	6 to 8
height (inch)	-	-	1 to 3	3 to 5	4 to 6
no./ft <sup>2</sup>	-	-	2	3	<1
Redroot pigweed					
leaf no.	-	-	2 to 5	3 to 6	4 to 6
height (inch)	-	-	1 to 3	2 to 4	4 to 6
no./ft <sup>2</sup>	-	-	3	2	<1
Rainfall after application (inch)					
1 week	0.27	0.27	0.26	0.22	0.36
2 week	1.02	1.02	0.62	0.81	1.34
3 week	1.93	1.93	0.23	1.13	0.39

None of the herbicide treatments caused visible crop injury. The trial area received 3.22 inches of precipitation within the first three weeks after preemergence (PRE) herbicide application. On June 18, prior to POST herbicide treatments, preplant incorporate (PPI) applied Pursuit Plus and Prowl H2O gave 85 to 90% yellow foxtail control. PRE applied Python, Gangster V + Gangster FR, Valor SX + Python, Valor SX + Sencor, and Valor SX at 2 oz/A gave 75, 80, 81, 83, and 87% control. All other PRE treatments gave 93% or greater control. All soil applied treatments gave 94% or greater common lambsquarters control and 98% or greater redroot pigweed control. On September 16, Python applied PRE followed by FirstRate + Select + Cobra gave 81% yellow foxtail control. Pursuit Plus applied PPI followed by FirstRate resulted in 89% control. All herbicide treatments gave 96% or greater common lambsquarters control and 93% or greater redroot pigweed control. The soybean yield for all herbicide treatments ranged from 54.9 bu/A to 59.1 bu/A. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Herbicide performance in soybeans at Lamberton, MN in 2005 (Getting, Gunsolus and Hoverstad).

Treatment <sup>a</sup>	Rate (oz/A, pt/A, lb/A or %)	Yellow foxtail		Common lambsquarters				Redroot pigweed				Yield (bu/A) <sup>b</sup>		
		6/18	6/29	7/5	9/16	6/18	6/29	7/5	9/16	6/18	6/29		7/5	9/16
-----(% control)-----														
<u>Preplant incorporate 2X/POST I (4-inch weeds)</u>														
Prowl H <sub>2</sub> O /	43 oz /	89	95	97	95	98	98	98	98	98	99	98	96	56.9
Raptor + FirstRate + NIS + AMS	4 oz + 0.3 oz + 0.25% + 3 qt													
Pursuit Plus /	2.5 pt /	85	88	91	89	98	99	98	98	98	96	97	93	57.5
FirstRate + NIS + AMS	0.3 oz + 0.25% + 3 qt													
Prowl H <sub>2</sub> O / Extreme + NIS + AMS	43 oz / 3 pt + 0.125% + 3 qt	90	99	97	95	98	99	98	98	98	99	98	98	55.4
<u>Preemergence/POST I (4-inch weeds)</u>														
Gangster V + Gangster FR / FirstRate	2.5 oz + 0.5 oz / 0.3 oz	95	97	96	91	98	99	98	98	98	99	98	98	56.5
+ Phoenix + V10137 + NIS + AMS	+ 8 oz + 12 oz + 0.25% + 3 qt													
Gangster V + Gangster FR / FirstRate	2.5 oz + 0.5 oz / 0.3 oz	93	98	96	90	98	99	98	98	98	99	98	98	55.3
+ Phoenix + V10139 + NIS + AMS	+ 8 oz + 8 oz + 0.25% + 3 qt													
Python / FirstRate + Select + Cobra	1 oz / 0.3 oz + 6 oz + 6 oz	75	94	95	81	97	98	97	96	98	99	97	97	57.5
+ COC + AMS	+ 1% + 3 qt													
Boundary / Flexstar + Fusion + FirstRate	1.5 pt / 16 oz + 8 oz + 0.3 oz	97	98	97	96	97	99	98	98	98	99	98	97	57.8
+ MSO + 28%N	+ 1.0% + 2.5%													
<u>Preemergence/POST II (6-inch weeds)</u>														
Intro / Roundup Weathermax + AMS	4 pt / 22 oz + 3 qt	98	99	97	92	96	99	98	98	98	99	98	98	57.5
Prowl H <sub>2</sub> O + Outlook /	1 pt + 12.6 oz /	96	99	97	94	98	99	98	98	98	99	98	98	55.7
Roundup Weathermax + AMS	22 oz + 3 qt													
Gangster V + Gangster FR /	1.5 oz + 0.3 oz /	80	99	95	90	94	99	98	98	98	99	98	98	56.8
Roundup Weathermax + AMS	22 oz + 4 qt													
Boundary / Touchdown Total + AMS	1.25 pt / 24 oz + 2 qt	95	99	97	96	98	99	98	98	98	99	98	98	59.1
Valor SX /	2 oz /	87	98	95	93	98	99	98	98	98	99	98	98	58.0
Roundup Original Max + AMS	22 oz + 4 qt													
Valor SX + Python /	1.5 oz + 0.5 oz /	81	99	96	92	98	99	98	98	98	99	98	98	56.8
Roundup Original Max + AMS	22 oz + 4 qt													
Valor SX + Sencor /	1.5 oz + 3 oz /	83	98	95	91	98	99	98	98	98	99	98	98	58.2
Roundup Original Max + AMS	22 oz + 4 qt													
<u>POST I (4-inch weeds)</u>														
Sequence + AMS	2.5 pt + 2 qt	-	99	98	94	-	99	98	98	-	99	98	97	57.4
<u>POST II (4-inch weeds)/POST III (soybean canopy)</u>														
Roundup Weathermax + AMS /	22 oz + 3 qt /	-	98	97	97	-	99	98	98	-	99	98	98	57.4
Roundup Weathermax + AMS	22 oz + 3 qt													
<u>POST II (6-inch weeds)</u>														
Glyphomax XRT + FirstRate + AMS	24 oz + 0.3 oz + 3 qt	-	99	98	96	-	99	98	98	-	99	98	98	56.9
Harmony GT	0.33 oz	-	99	98	97	-	99	98	98	-	99	98	98	55.5
+ Roundup Original Max + AMS	+ 22 oz + 2.35 qt													
Harmony GT + Classic	0.33 oz + 0.33 oz	-	99	98	95	-	99	98	98	-	99	98	98	57.8
+ Roundup Original Max + AMS	+ 22 oz + 2.35 qt													
Clearout 41 Plus + AMS	32 oz + 3 qt	-	99	98	95	-	99	98	98	-	99	98	98	56.4
Glyphomax XRT + AMS	24 oz + 3 qt	-	99	98	93	-	99	98	98	-	99	98	97	57.0
Roundup Weathermax + AMS	22 oz + 3 qt	-	99	98	94	-	99	98	98	-	99	98	97	54.9
<u>Checks</u>														
Weedy Check	-	0	0	0	0	0	0	0	0	0	0	0	0	21.5
Weed-free check	-	100	100	100	100	100	100	100	100	100	100	100	100	56.1
	LSD (0.10)	4.0	2.0	2.2	3.9	1.6	0.7	0.4	1.0	ns	0.5	0.4	1.6	3.32

<sup>a</sup> COC = crop oil concentrate; NIS = nonionic surfactant; AMS = liquid spray grade ammonium sulfate.

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