Weed management in glyphosate-resistant soybeans. Waltz, Aaron L., Alex R. Martin, and Jess J. Spotanski. A field study was conducted to evaluate preplant incorporated, pre, and postemergent applications in conventionally-tilled, glyphosate-resistant soybeans. A randomized complete block design with three replications per treatment was utilized. The study was conducted on a Sharpsburg silty clay loam with 3.2% organic matter and a pH of 6.6. Seedbed preparation consisted of disking one week prior to planting and field cultivation the day of planting. Individual plots consisted of six 30-inch rows, each 30 feet long. 'Asgrow AG3003RR' soybeans were planted May 24 at a population of 150,000 seeds/acre. Treatments were applied with a tractor-mounted sprayer traveling 3.0 mph. Application, crop, weed, and environmental data are presented below:

Date	May 24	May 24	June 17	July 8
Treatment	PPI	PRE	EPOST	LPOST
Sprayer				
gpa	15	15	15	15
psi	30	30	30	30
Temperature (°F)				
Air	47	48	78	86
Soil (4 inch)	56	57	77	80
Soil Moisture	Adequate	Adequate	Dry	Dry
Wind (mph)	10	6	10	5
Sky (% cloudy)	100	100	10	10
Relative Humidity (%)	68	75	51	55
Precip. after appl.				
Week 1 (inch)	2.09	2.09	0.0	0.04
Week 2 (inch)	0.0	0.0	0.0	0.0
Soybean				
Leaf no.	--	--	V3	R1
Height (inch)	--	--	6	12
Common sunflower				
Leaf no.	--	--	5	many
Height (inch)	--	--	4-6	17-28
Infestation (m^2)	--	--	2	10
Velvetleaf				
Leaf no.	--	--	8	many
Height (inch)	--	--	2-5	18
Infestation (m^2)	--	--	20	10
Annual grasses				
Leaf no.	--	--	5	many
Height (inch)	--	--	3-4	2-8
Infestation (m^2)	--	--	15	10
Pigweed species				
Leaf no.	--	--	6-10	many
Height (inch)	--	--	2-5	12-24
Infestation (m^2)	--	--	25	20

Summary comments: Precipitation was good until early June, then conditions were very dry. Grass species include yellow and green foxtail and some large crabgrass. Pigweed species include mostly Palmer amaranth, with some redroot pigweed and common waterhemp. Most of the treatments gave good season-long weed control for common sunflower, annual grasses, and pigweed species. However, late-season velvetleaf control was a problem for many treatments. Results of the study are summarized in the following table (Dept. of Agronomy and Horticulture, University of Nebraska-Lincoln).

Table. Weed management in glyphosate-resistant soybeans (Waltz, Martin, and Spotanksi).

Treatment	Application Rate	Timing	-----HELAN----- 6/21	7/8	8/19	-----ABUTH----- 6/21	7/8	8/19	-----GGGAN[a]----- 6/21	7/8	8/19	-----AMASS[b]----- 6/21	7/8	8/19
	(lb/A)		% weed control											
Imazethapyr& pendimethalin/ glyphosate[c]+ AMS[d]	0.063 0.84 1.02 2.5	PPI/ EPOST	93	100	100	92	99	97	98	100	100	100	100	100
Pendimethalin[e]/ imazethapyr& glyphosate+ NIS[f]+ AMS	1.24 0.064 0.75 0.125% 2.5	PPI/ EPOST	20	98	97	30	92	78	100	100	100	100	100	100
Pendimethalin[g]/ imazethapyr& glyphosate+ NIS+ AMS	1.07 0.064 0.75 0.125% 2.5	PPI/ EPOST	13	100	92	20	88	77	97	100	100	98	100	98
Pendimethalin[e]/ imazethapyr& glyphosate+ NIS+ AMS	1.24 0.064 0.75 0.125% 2.5	PRE/ EPOST	23	97	90	27	87	77	77	99	99	77	97	97
Pendimethalin[g]/ imazethapyr& glyphosate+ NIS+ AMS	1.07 0.064 0.75 0.125% 2.5	PRE/ EPOST	47	98	85	30	88	77	73	99	99	80	98	97
Flumiclorac+ glyphosate[h]+ NIS+ AMS	0.013 1.0 0.125% 2.0	EPOST	100	98	90	93	70	53	83	99	99	95	95	92
Glyphosate[h]+ carfentrazone+ NIS+ AMS	1.0 0.002 0.125 2.0	EPOST	100	97	95	100	82	37	83	99	99	93	90	88
Flumioxazin/ glyphosate[c]+ AMS	0.048 1.02 2.5	PRE/ EPOST	43	100	100	33	90	83	23	98	99	53	100	97
Flumioxazin/ glyphosate[c]+ AMS	0.064 1.02 2.5	PRE/ EPOST	63	100	97	60	93	87	70	100	100	75	100	98
Carfentrazone+ glyphosate[i]+ AMS	0.004 0.75 2.5	EPOST	100	97	93	97	78	57	88	99	99	92	87	82
Glyphosate[i]+ AMS	0.75 2.5	EPOST	100	100	93	88	80	80	97	99	98	100	93	88
Glyphosate[c]+ AMS/ glyphosate[c]+ AMS	1.02 2.5 1.02 2.5	EPOST/ LPOST	.	100	95	.	92	94	.	99	99	.	100	98
Imazethapyr& glyphosate+ NIS+ AMS	0.064 0.75 0.125% 2.5	EPOST	.	97	93	.	83	78	.	99	99	.	93	92
Glyphosate[c]+ AMS/	1.02 2.5	EPOST	.	97	88	.	90	83	.	100	100	.	93	93
Check			0	0	0	0	0	0	0	0	0	0	0	0
LSD (P=.05)			0	5	10	4	10	21	12	2	3	4	5	7

[a]GGGAN = green and giant foxtail, with some fall panicum and large crabgrass

[b]AMASS = mostly Palmer amaranth, with little common waterhemp and redroot pigweed

[c]glyphosate = 'Roundup UltraMax' by Monsanto

[d]AMS = 'N-Pa-K' by Agriliance

[e]penidmethalin = 'Prowl' by BASF

[f]NIS = 'Preference' by Agriliance

[g]pendimethalin = 'Prowl - H_2O' by BASF

[h]glyphosate = 'Roundup Original' by Monsanto

[i]glyphosate = 'Glyphomax Plus' by Dow AgroSciences