

Weed control in glyphosate-resistant soybean. Waltz, Aaron L., Alex R. Martin, and Kevin T. Horky. A field study was conducted to evaluate early preplant, pre, and postemergent applications in conventionally-tilled, glyphosate-resistant soybean. A randomized complete block design with three replications per treatment was utilized. The study was conducted on a Sharpsburg/Crete silty clay loam with 2.9% organic matter and a pH of 6.7. Seedbed preparation consisted of disking the whole site one week prior to EPPA application and one field cultivation per plot prior to EPP applications or planting. Individual plots consisted of six 30-inch rows, each 30 feet long. 'Asgrow AG2703RR' soybeans were planted June 5 at a population of 131,600 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 13	May 27	June 5	June 25	July 14
Treatment	EPPA	EPPB	PRE	EPOST	LPOST
Sprayer					
gpa	15	15	15	15	15
psi	30	30	30	30	30
Temperature (°F)					
Air	82	85	70	72	76
Soil (4 inch)	66	72	68	75	72
Soil Moisture	Adequate	Adequate	Adequate	Adequate	Dry
Wind (mph)	10	8	10	8	7
Sky (% cloudy)	40	70	100	100	10
Relative Humidity (%)	41	20	60	79	75
Precip. after appl.					
Week 1 (inch)	1.06	0.52	3.27	0.36	0.63
Week 2 (inch)	0.08	1.26	0.12	0.12	0.0
Soybean					
Leaf no.	--	--	--	2	7
Height (inch)	--	--	--	5	14
Common sunflower					
Leaf no.	--	--	--	3	--
Height (inch)	--	--	--	2-3	--
Infestation (m ²)	--	--	--	2	--
Velvetleaf					
Leaf no.	--	--	--	2-3	6
Height (inch)	--	--	--	1-3	8
Infestation (m ²)	--	--	--	30	1
Pigweed species					
Leaf no.	--	--	--	5-7	many
Height (inch)	--	--	--	1-4	10
Infestation (m ²)	--	--	--	30	1
Annual grasses					
Leaf no.	--	--	--	4	--
Height (inch)	--	--	--	2-3	--
Infestation (m ²)	--	--	--	5	--

Summary comments: Precipitation was good until mid July, then conditions were dry. Pigweed species include mostly Palmer amaranth, with little common waterhemp. Grass species include green and giant foxtail with little fall panicum and large crabgrass. PRE only treatments resulted in poor velvetleaf control. The EPOST only treatments resulted in poor pigweed and grass control. The sequential treatments generally gave good season-long weed control for common sunflower, annual grasses, and pigweed species. Later-season velvetleaf control declined for many of the treatments. Results of the study are summarized in the following table (Dept. of Agronomy and Horticulture, University of Nebraska-Lincoln).

Table. Weed control in glyphosate-resistant soybean. (Waltz, Martin, and Horky)

Treatment	Application		Injury 7/7 (%)	----HELAN----			----ABUTH----			----AMASS ^a ----			----GGGAN ^b ----		
	Rate (lb/A)	Timing		7/7	7/21	8/7	7/7	7/21	8/7	7/7	7/21	8/7	7/7	7/21	8/7
-----(% control)-----															
Flufenacet& metribuzin/ glyphosate ^c + AMS ^d	0.24 0.36 0.95 2.6	EPPA/ EPOST	0	100	100	.	96	88	.	99	98	.	100	100	.
Flufenacet& metribuzin/ glyphosate ^c + AMS	0.2 0.29 0.95 2.6	EPPB/ EPOST	0	100	97	.	95	88	.	99	93	.	100	100	.
Flufenacet& metribuzin/ glyphosate ^c + AMS	0.15 0.23 0.95 2.6	PRE/ EPOST	0	100	100	.	95	87	.	99	93	.	99	98	.
S-metolachlor&CGA-154281/ glyphosate ^c + AMS	1.6 0.95 2.6	PRE/ EPOST	0	90	80	.	93	85	.	100	98	.	100	100	.
S-metolachlor& metribuzin	1.18 0.28	PRE	0	33	13	.	53	53	.	97	98	.	93	98	.
S-metolachlor& metribuzin+ fomesafen+ cloransulam	1.18 0.28 0.18 0.032	PRE	0	90	90	.	73	67	.	100	100	.	93	93	.
S-metolachlor& metribuzin/ glyphosate ^e + AMS	0.98 0.23 0.94 1.3	PRE/ EPOST	0	100	97	.	92	83	.	99	100	.	99	98	.
S-metolachlor& metribuzin/ glyphosate ^e + AMS	1.18 0.28 0.94 1.3	PRE/ EPOST	0	100	100	.	92	87	.	99	97	.	98	97	.
Glyphosate ^e + AMS/ glyphosate ^e + AMS	0.94 1.3 0.94 1.3	EPOST/ LPOST	0	97	100	100	92	96	95	100	100	100	99	100	100
Flufenacet& metribuzin/ glyphosate ^f + AMS	0.15 0.23 0.75 1% w/w	PRE/ EPOST	0	100	100	.	92	83	.	97	98	.	100	100	.
Glyphosate ^f + AMS/ glyphosate ^f + AMS	0.75 1% w/w 0.75 1% w/w	EPOST/ LPOST	0	97	100	100	92	95	93	96	100	100	99	98	99
Fluazifop-P& fenoxaprop+ fomesafen+ cloransulam+ COC ^g	0.16 0.05 0.18 0.016 1% v/v	EPOST	5	100	100	.	93	83	.	77	77	.	85	77	.
Quizalofop-P+ fomesafen+ cloransulam+ COC	0.06 0.18 0.016 1% v/v	EPOST	5	100	100	.	95	83	.	77	73	.	85	73	.
Clethodim+ fomesafen+ cloransulam+ COC	0.13 0.18 0.016 1% v/v	EPOST	5	100	97	.	95	83	.	70	73	.	93	78	.
Weedy Check			0	0	0	.	0	0	.	0	0	.	0	0	.
LSD (p=0.05)			0	11	10	0	4	15	7	7	7	0	5	10	3

^aAMASS = mostly Palmer amaranth with little common waterhemp^bGGGAN = green and giant foxtail with little fall panicum and large crabgrass^cglyphosate = 'Roundup WeatherMax' by Monsanto^dAMS = 'N-Pa-K' by Agrilience^eglyphosate = 'Touchdown Total' by Syngenta^fglyphosate = 'Roundup Original' by Monsanto^gCOC = 'Prime Oil' by Agrilience