

Weed Control in Soybean

Evaluation of weed control programs in soybeans. Horky, Kevin T. and Alex R. Martin. A field study was conducted to evaluate the efficacy of weed control programs in soybeans. A randomized complete block design with three replications per treatment was utilized. The study was conducted on a Sharpsburg silty clay loam with 3.1% organic matter and a pH of 6.6. Individual plots consisted of six 30-inch rows 30 feet long. 'Asgrow 2703' soybeans were planted May 10 at a population of 135,000 seeds per acre. Treatments were applied with a tractor-mounted sprayer traveling 3.0 mph. EPOST treatments were applied 35 days after planting, MPOST treatments were applied 38 days after planting, and LPOST treatments were applied 51 days after planting. Application, crop, weed, and environmental data are presented below.

Date	May 10	June 14	June 17	June 30
Treatment	PRE	EPOST	MPOST	LPOST
Sprayer				
gpa	15	15	15	15
psi	30	30	30	30
Temperature (°C)				
air	24	18	27	28
soil (4 inch)	14	21	21	23
Soil Moisture	adequate	adequate	adequate	adequate
Wind (mph)	10	7	5	1
Sky (% cloudy)	25	40	25	0
Relative				
humidity (%)	52	73	41	40
Precip. After appl. (inches)				
week 1	1.99	0.06	0.06	0.06
week 2	0	1.55	1.55	0
Soybean				
No. trifoliolate leaves	--	3	4	5
height (cm)	--	15	18	34
Velvetleaf				
height (cm)	--	7	13	20
infestation (m ²)	--	5	5	5
Common Sunflower				
height (cm)	--	13	18	25
infestation (m ²)	--	5	5	5
Palmer Amaranth				
height (cm)	--	10	13	20
infestation (m ²)	--	5	5	5
Green foxtail				
height (cm)	--	8	10	10
infestation (m ²)	--	2	3	3

Summary comments: PRE + POST treatments provided greater weed control than PRE only treatments. Both fomesafen and lactofen caused initial crop injury which decreased with time. Results of the study are summarized in the following table. (Dept. of Agronomy and Horticulture, University of Nebraska-Lincoln)

Evaluation of weed control programs in soybeans (Horky and Martin).

Evaluation of weed control programs in soybeans (morky and mariny).																
Application			-----ABUTH-----			-----HELAN-----			-----AMAPA-----			-----SETVI-----			---GLXMA---	
Treatment	Rate	Timing	6/17	7/7	7/21	6/17	7/7	7/21	6/17	7/7	7/21	6/17	7/7	7/21	6/23	7/7
-----% Weed Control-----															--% Necrosis--	
Glyphosate ¹ +	0.77	EPOST/	0	99	99	0	99	99	0	99	99	0	99	99	2	2
AMS ² /	2% v/v															
glyphosate ¹ +	0.77	LPOST														
AMS	2% v/v															
Flumioxazin+	0.048	PRE/	92	98	98	93	99	99	96	99	99	63	99	99	0	1
cloransulam/	0.016															
glyphosate ¹ +	0.77	MPOST														
AMS	2% v/v															
Flumioxazin/	0.064	PRE/	37	95	93	40	99	99	87	99	99	63	99	99	0	2
glyphosate ¹ +	0.77	MPOST														
AMS	2% v/v															
Flumioxazin+	0.08	PRE/	92	94	93	90	99	99	95	98	98	86	99	99	30	0
cloransulam/	0.026															
lactofen+	0.125	MPOST														
clethodim+	0.07															
cloransulam+	0.016															
COC ³ +	1pt/a															
AMS	2% v/v															
Flumioxazin+	0.08	PRE/	95	98	96	95	99	99	98	98	98	90	94	93	33	1
cloransulam/	0.026															
lactofen+	0.125	MPOST														
clethodim+	0.075															
cloransulam+	0.016															
COC+	1pt/a															
AMS	2% v/v															
Flumioxazin+	0.08	PRE	95	85	80	90	78	78	96	96	96	93	90	85	0	0
cloransulam+	0.032															
pendimethalin ⁴	1.24															
Flumioxazin+	0.048	PRE/	93	98	96	90	99	99	90	99	99	93	99	99	1	2
cloransulam/	0.016															
glyphosate ⁵ +	0.75	MPOST														
AMS	2% v/v															
Cloransulam/	0.016	PRE/	75	96	96	83	99	99	47	99	99	93	99	99	2	0
glyphosate ⁵ +	0.75	MPOST														
AMS	2% v/v															
Pendimethalin ⁴ /	1.24	PRE/	30	92	92	42	99	99	63	99	99	73	99	99	3	2
cloransulam+	0.016	MPOST														
glyphosate ⁵ +	0.75															
AMS	2% v/v															
Pendimethalin ⁴ +	1.24	PRE/	75	99	99	48	98	98	92	88	88	90	96	96	2	2
flumetsulam/	0.04															
glyphosate ⁵ +	0.75	MPOST														
AMS	2% v/v															

(continued)

Evaluation of weed control programs in soybeans (Horky and Martin),continued.

Evaluation of weed control programs in soybeans (Horny and Martin), continued.																
Application			-----ABUTH-----			-----HELAN-----			-----AMAPA-----			-----SETVI-----			---GLXMA---	
Treatment	Rate	Timing	6/17	7/7	7/21	6/17	7/7	7/21	6/17	7/7	7/21	6/17	7/7	7/21	6/23	7/7
-----% Weed Control-----															--% Necrosis--	
S-metolachlor& metribuzin/ fomesafen& adjuvant+ cloransulam+ COC	1.15 0.27 0.18 0.017 1% v/v	PRE/ MPOST	50	68	65	58	91	91	82	91	89	78	91	88	20	0
S-metolachlor& metribuzin/ glyphosate ⁶ + AMS	0.98 0.23 0.78 2% v/v	PRE/ MPOST	53	88	87	35	99	99	92	99	99	80	99	99	0	0
Fomesafen& adjuvant+ glyphosate ⁶ + AMS/ glyphosate ⁶ + AMS	0.18 0.65 2% v/v 0.65 2% v/v	EPOST/ LPOST	0	95	99	0	99	99	0	99	99	0	99	99	22	0
Fomesafen& adjuvant+ glyphosate ⁶ + AMS/ glyphosate ⁶ + AMS	0.09 0.65 2% v/v 0.65 2% v/v	EPOST/ LPOST	0	99	99	0	99	99	0	99	99	0	99	99	20	0
Fomesafen& adjuvant+ fluazifop-P& fenoxaprop+ COC/ glyphosate ⁶ + AMS	0.18 0.125 0.035 1% v/v 0.65 2% v/v	EPOST/ LPOST	0	82	99	0	95	99	0	98	98	0	99	99	28	0
Pendimethalin ⁷ / glyphosate ⁵ + AMS	1.14 0.75 2%v/v	PRE/ MPOST	40	91	91	33	98	98	85	99	99	77	99	99	0	0
Imazethapyr& pendimethalin/ glyphosate ⁵ + AMS	0.063 0.84 0.75 2% v/v	PRE/ MPOST	93	99	99	90	99	99	83	99	99	95	99	99	2	2
LSD (P=.05)			14	6	7	22	4	3	18	8	9	25	6	7	6	2

¹glyphosate = 'Roundup Original Max' by Monsanto²AMS = 'N-PAK' by Agrilience³COC = 'Prime Oil' by Agrilience⁴pendimethalin = 'Pendimax' by Dow⁵glyphosate = 'Glyphomax XRT' by Dow⁶glyphosate = 'Touchdown Total' by Syngenta⁷pendimethalin = 'Prowl H2O' by BASF