

Evaluation of glyphosate programs in corn. Horky, Kevin T. and Alex R. Martin. A field study was conducted to evaluate the efficacy of weed control programs using glyphosate in corn. A randomized complete block design with three replications per treatment was utilized. The study was conducted on a Sharpsburg silt loam with 2.7% organic matter and a pH of 6.8. Individual plots consisted of six 30-inch rows, each 30 feet long. 'Dekalb 6019RR' corn was planted May 5 at a population of 20,600 seeds per acre. Treatments were applied with a tractor-mounted sprayer traveling 3.0 mph. MPOST treatments were applied 29 days after planting, and LPOST treatments were applied 35 days after planting. Application, crop, weed, and environmental data are presented below:

Date	May 6	June 3	June 9
Treatment	PRE	MPOST	LPOST
Sprayer			
gpa	15	15	15
psi	30	30	30
Temperature (°C)			
air	29	29	22
soil (4 inch)	18	19	20
Soil Moisture	dry	adequate	adequate
Wind (mph)	5	2	3
Sky (% cloudy)	5	60	100
Relative humidity (%)	34	50	80
Precip. After appl. (inches)			
week 1	1.57	0.18	1.01
week 2	1.08	1.01	1.53
Corn			
stage	--	V4	V5
height (cm)	--	18	28
Common sunflower			
height (cm)	--	12	25
infestation (m ²)	--	4	4
Green foxtail			
height (cm)	--	8	15
infestation (m ²)	--	5	8
Velvetleaf			
height (cm)	--	10	15
infestation (m ²)	--	10	10
Palmer amaranth			
height (cm)	--	10	20
infestation (m ²)	--	6	6

Summary comments: The post treatments generally improved control of common sunflower and velvetleaf. Post treatments containing rimsulfuron caused some crop injury. Results of the study are summarized in the following table. (Dept. of Agronomy and Horticulture, University of Nebraska-Lincoln)

Table. Evaluation of glyphosate programs in corn (Horky and Martin).

Treatment	Application		-----HELAN-----		-----SETVI-----			-----ABUTH-----			-----AMAPA-----		ZEAMX
	Rate	Timing	6/2	7/28	6/2	6/23	7/28	6/2	6/23	7/28	6/2	7/28	INJURY 6/23
	(lb/a)		% Weed Control-----										(%)
S-metolachlor& atrazine& mesotrione& benoxacor	1.305 1.305 0.168	PRE	99	85	96	88	83	99	99	92	99	93	0
S-metolachlor& atrazine& benoxacor/ mesotrione+ atrazine+ COC ¹ + UAN ²	1.26 1.628 0.094 0.5 1%v/v 2.5% v/v	PRE/ MPOST	99	83	95	87	82	90	96	92	99	95	0
Dimethenamid-P& atrazine/ dicamba& diflufenzopyr+ UAN+ NIS ³	0.723 1.4 0.125 0.05 2.5% v/v 0.125%v/v	PRE/ MPOST	95	88	93	73	72	92	80	73	96	83	0
Acetochlor& atrazine& dichlormid/ flumetsulam& clopyralid+ NIS+ UAN	1.95 1.46 0.034 0.113 0.25%v/v 2.5%v/v	PRE/ MPOST	96	95	93	78	75	98	87	80	98	88	0
Atrazine& S-metolachlor& benoxacor/ atrazine& nicosulfuron& rimsulfuron+ mesotrione+ COC+ UAN	0.58 0.45 0.093 0.003 0.001 0.094 1%v/v 2.5%v/v	PRE/ MPOST	85	95	92	85	78	78	98	92	92	92	0
Isoxaflutole+ atrazine/ foramsulfuron& iodosulfuron+ MSO ⁴ + UAN	0.07 1 0.028 0.002 1%v/v 2.5%v/v	PRE/ MPOST	98	95	93	88	83	98	96	92	98	95	0
Acetochlor& atrazine& MON 4660/ glyphosate ⁵ + AMS ⁶	1.075 0.425 0.75 2.55	PRE/ MPOST	78	95	88	88	82	75	95	88	92	82	0

(continued)

Table. Evaluation of glyphosate programs in corn (Horky and Martin), continued.

Treatment	Application		-----HELAN-----		-----SETVI-----			-----ABUTH-----			-----AMAPA-----		ZEAMX
	Rate	Timing	6/2	7/28	6/2	6/23	7/28	6/2	6/23	7/28	6/2	7/28	INJURY
	(lb/a)		% Weed Control										(%)
Glyphosate+	0.75	MPOST/	0	95	0	96	88	0	99	93	0	92	0
AMS/	2.55												
glyphosate+	0.56	LPOST											
AMS	2.55												
Atrazine&	1.24	PRE	95	65	95	65	63	90	40	37	98	62	0
metolachlor	0.96												
Atrazine&	1.24	PRE	98	88	95	80	73	96	88	83	98	80	0
metolachlor+	0.96												
isoxaflutole	0.03												
Atrazine&	0.62	PRE/	85	95	88	87	82	78	96	92	92	93	0
metolachlor/	0.48												
glyphosate+	0.77	MPOST											
AMS	2.55												
Atrazine&	0.775	PRE/	78	88	91	88	82	77	90	83	90	87	0
S-metolachlor&	0.6												
benoxacor/													
glyphosate+	0.77	MPOST											
AMS	2.55												
Atrazine&	0.775	PRE/	92	95	88	95	90	82	95	90	95	93	20
S-metolachlor&	0.6												
benoxacor/													
glyphosate+	0.77	MPOST											
rimsulfuron+	0.012												
atrazine+	0.75												
AMS	2.55												
Atrazine&	0.775	PRE/	88	95	93	96	92	82	98	93	93	95	20
S-metolachlor&	0.6												
benoxacor/													
glyphosate+	0.77	MPOST											
rimsulfuron+	0.012												
AMS	2.55												
Atrazine&	0.775	PRE/	82	95	90	99	95	84	98	93	90	95	20
S-metolachlor&	0.6												
benoxacor/													
glyphosate+	0.77	MPOST											
rimsulfuron+	0.024												
AMS	2.55												

(continued)

Table. Evaluation of glyphosate programs in corn (Horky and Martin), continued.

Treatment	Application		-----HELAN-----		-----SETVI-----			-----ABUTH-----			-----AMAPA-----		ZEAMX
	Rate	Timing	6/2	7/28	6/2	6/23	7/28	6/2	6/23	7/28	6/2	7/28	INJURY
	(lb/a)		----- % Weed Control-----										(%)
Atrazine& S-metolachlor& benoxacor/ nicosulfuron& rimsulfuron+ mesotrione+ atrazine+ AMS+ COC	0.775 0.6 0.023 0.012 0.063 0.75 2.55 1%v/v	PRE/ MPOST	85	85	92	78	73	75	99	95	93	95	0
Rimsulfuron& thifensulfuron+ atrazine/ glyphosate+ AMS	0.016 0.008 1.5 0.77 2.55	PRE/ MPOST	99	95	97	83	78	95	96	93	99	92	0
LSD (P=.05)			8	4	7	9	9	10	8	10	5	8	10

¹COC = 'Prime Oil' by Agrilience²UAN = '28%N' by Agrilience³NIS = 'Preference' by Agrilience⁴MSO = 'Destiny' by Agrilience⁵Glyphosate = 'Roundup Weathermax' by Monsanto⁶AMS = 'N-PAK' by Agrilience