

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 in glyphosate resistant 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 April 27 at a population of 22000 seeds per acre. Treatments were applied with a tractor-mounted sprayer at a speed of 3.0 mph. 5" CORN treatments were applied 28 days after planting, and 10" CORN treatments were applied 41 days after planting. Application, weed, and environmental data are presented below:

Date	April 27	May 25	June 7
Treatment	PRE	5" CORN	10" CORN
Sprayer			
gpa	15	15	15
psi	30	30	30
Temperature (°C)			
air	14	21	28
soil (4 inch)	8	20	21
Soil Moisture	adequate	adequate	adequate
Wind (mph)	10	4	2
Sky (% cloudy)	100	90	60
Relative			
humidity (%)	28	63	66
Precip. After appl. (inches)			
week 1	0.09	1.32	1.25
week 2	0.23	1.42	0.06
Corn			
stage	--	V4	V6
height (cm)	--	13	25
Velvetleaf			
height (cm)	--	5	15
infestation (m <sup>2</sup> )	--	5	5
Common sunflower			
height (cm)	--	5	18
infestation (m <sup>2</sup> )	--	4	5
Green foxtail			
height (cm)	--	2	10
infestation (m <sup>2</sup> )	--	3	3

Summary comments: Limited rainfall reduced performance of PRE treatments. When followed by glyphosate post reduced rates of PRE herbicides maintained crop yield and weed control. 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		-----ABUTH-----			-----HELAN-----			-----SETVI-----			-----ZEAMX-----		YIELD
	Rate	Timing	5/24	6/7	6/23	5/24	6/7	6/23	5/24	6/7	6/23	5/31	6/7	9/30
	(lb/a)		-----% Weed Control-----									% Leaning	%Necrosis	(bu/ac)
Acetochlor& atrazine& dichlormid/ glyphosate <sup>1</sup> + AMS <sup>2</sup>	1.5 1.13 0.75 2.5	PRE/  5" CORN	48	85	85	63	99	90	73	99	90	0	0	125
Dimethenamid-P& atrazine/ glyphosate <sup>3</sup> + AMS	0.53 1.03 0.77 2 % v/v	PRE/  5" CORN	47	85	85	62	99	96	68	99	98	0	0	124
Dimethenamid-P& atrazine/ glyphosate <sup>3</sup> + dicamba& diflufenzopyr+ AMS	0.53 1.03 0.77 0.094 0.038 2 % v/v	PRE/  5" CORN	37	85	85	52	99	96	58	99	95	8	0	130
Dimethenamid-P& atrazine/ glyphosate <sup>3</sup> + dicamba& diflufenzopyr+ AMS	0.53 1.03 0.77 0.094 0.038 2 % v/v	PRE/  10" CORN	57	48	96	60	57	99	78	75	99	0	0	122
Glyphosate <sup>3</sup> + AMS	0.77 2 % v/v	5" CORN	0	85	80	0	99	87	0	99	85	0	0	117
Glyphosate <sup>3</sup> + dicamba+ AMS	0.77 0.25 2 % v/v	5" CORN	0	85	83	0	99	87	0	99	83	2	0	108
Glyphosate <sup>3</sup> + dicamba& diflufenzopyr+ AMS	0.77 0.094 0.038 2 % v/v	5" CORN	0	85	80	0	99	88	0	99	83	2	2	120
Glyphosate <sup>3</sup> + dicamba+ pendimethalin+ AMS	0.77 0.25 1.19 2 % v/v	5" CORN	0	83	82	0	99	90	0	99	93	0	0	107
Dimethenamid-P& atrazine+ isoxaflutole	0.85 1.65 0.047	PRE	82	78	63	85	80	77	83	78	83	0	0	91
Dimethenamid-P& atrazine/ dicamba& diflufenzopyr+ AMS+ NIS <sup>4</sup>	0.85 1.65 0.125 0.05 2 % v/v 0.25 %v/v	PRE/  10" CORN	47	42	80	60	55	87	77	75	93	0	0	109
Atrazine& metolachlor	1.63 1.26	PRE	52	43	50	77	73	58	82	80	78	0	0	70

(continued)

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

Treatment	Application		-----ABUTH-----			-----HELAN-----			-----SETVI-----			-----ZEAMX-----		YIELD
	Rate	Timing	5/24	6/7	6/23	5/24	6/7	6/23	5/24	6/7	6/23	5/31	6/7	9/30
	(lb/a)		-----% Weed Control-----									% Leaning	%Necrosis	(bu/ac)
Atrazine& metolachlor	0.81 0.63	PRE	58	57	37	73	70	60	75	73	58	0	0	63
Atrazine& metolachlor/ glyphosate <sup>5</sup> +	1.63 1.26 0.77	PRE/ 5" CORN	58	83	82	67	99	95	80	99	96	0	0	120
NIS+	0.25 % v/v													
AMS	2 % v/v													
Atrazine& metolachlor/ glyphosate <sup>5</sup> +	0.81 0.63 0.77	PRE/ 5" CORN	42	82	83	67	99	93	80	99	88	0	0	117
NIS+	0.25 % v/v													
AMS	2 % v/v													
LSD (P=.05)			16	14	17	16	12	12	13	8	10	3	1	18

<sup>1</sup>glyphosate = 'Glyphomax XRT' by Dow<sup>2</sup>AMS = 'N-PAK' by Agrilience<sup>3</sup>glyphosate = 'Roundup Weathermax' by Monsanto<sup>4</sup>NIS = 'Preference' by Agrilience<sup>5</sup>glyphosate = 'Roundup Original Max' by Monsanto