

Weed Control in Reduced Tillage Corn

Weed control in no-till corn. Horky, Kevin T. and Alex R. Martin. A field study was conducted to evaluate the efficacy of no-till weed control programs in corn. 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. Individual plots consisted of six 30-inch rows, each 30 feet long. 'Dekalb 6019RR' corn was planted April 26 at a population of 20,600 seeds per acre. Treatments were applied with a tractor-mounted sprayer at a speed of 3.0 mph. EPP treatments were applied 12 days before planting, PP treatments were applied 5 days before planting, EPOST treatments were applied 25 days after planting, and MPOST treatments were applied 37 days after planting. Application, crop, weed, and environmental data are presented below:

Date	April 14	April 21	May 21	June 3
Treatment	EPP	PP	EPOST	MPOST
Sprayer				
gpa	15	15	15	15
psi	30	30	30	30
Temperature (°C)				
air	13	24	24	29
soil (4 inch)	14	15	18	19
Soil Moisture	adequate	adequate	adequate	adequate
Wind (mph)	6	2	6	3
Sky (% cloudy)	0	40	45	10
Relative				
humidity (%)	40	25	72	45
Precip. After appl. (inches)				
week 1	0	0.82	1.48	.18
week 2	0.82	0.07	.51	1.01
Corn				
stage	--	--	V2	V5
height (cm)	--	--	7	25
Henbit				
height (cm)	7	10	13	14
infestation (m ²)	50	50	50	50
Field pennycress				
height (cm)	15	22	30	35
infestation (m ²)	3	4	4	4
Prickly lettuce				
height (cm)	5	14	16	25
infestation (m ²)	2	2	2	2
Common lambsquarters				
height (cm)	--	--	3	10
infestation (m ²)	--	--	2	2
Velvetleaf				
height (cm)	--	--	2	6
infestation (m ²)	--	--	10	10
Common sunflower				
height (cm)	--	--	2	8
infestation (m ²)	--	--	3	4

Summary comments: POST treatments generally improved control of velvetleaf and common sunflower. Crop injury was not observed with any 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 no-till corn (Horky and Martin).

Treatment	Rate (lb/a)	Timing	LAMAM	THLAR	LACSE	-----CHEAL-----		-----ABUTH-----		-----HELAN-----	
			5/5	5/5	6/17	6/17	6/28	6/17	6/28	6/17	6/28
-----% Weed Control-----											
2,4-D ¹ +	0.25	EPP/	72	77	90	98	96	95	95	99	99
COC ² /	1% v/v										
glyphosate ³ +	0.77	MPOST									
AMS ⁴	2.55										
Carfentrazone+	0.01	EPP/	80	96	96	96	94	92	90	99	99
2,4-D+	0.25										
COC/	1% v/v										
glyphosate+	0.77	MPOST									
AMS	2.55										
Carfentrazone+	0.01	EPP/	98	99	98	93	91	88	87	98	96
glyphosate+	0.56										
2,4-D+	0.13										
COC+	1 %v/v										
AMS/	2.55										
glyphosate+	0.77	MPOST									
AMS	2.55										
Glyphosate+	0.77	EPP/	88	98	96	98	98	93	90	99	99
AMS/	2.55										
glyphosate+	0.77	MPOST									
AMS	2.55										
Atrazine&	2.00	PP	82	89	86	95	88	77	73	87	83
S-metolachlor&	1.63										
glyphosate+	0.94										
AMS	2.55										
Atrazine&	1.61	EPOST	0	0	86	99	98	99	90	99	94
S-metolachlor&	1.31										
glyphosate+	0.75										
Acetochlor&	2.10	EPOST	0	0	93	99	98	99	95	98	98
atrazine&	1.50										
glyphosate	0.56										
Glyphosate+	0.77	EPOST	0	0	99	99	93	98	95	99	94
AMS	2.55										
Carfentrazone+	0.006	PP/	96	99	96	98	88	98	88	93	88
glyphosate+	0.77										
AMS/	2.55										
glyphosate+	0.56	EPOST									
AMS	2.55										
2,4-D+	0.25	PP	96	96	98	96	94	90	86	96	96
S-metolachlor&	1.26										
atrazine&	1.63										
benoxacor+											
COC	1% v/v										
S-metolachlor&	1.50	PP	99	99	87	98	96	93	91	93	93
atrazine&	1.94										
benoxacor+											
isoxaflutole+	0.047										
COC	1% v/v										

(continued)

Table. Weed control in no-till corn (Horky and Martin), continued.

Treatment	Rate (lb/a)	Timing	LAMAM	THLAR	LACSE	-----CHEAL-----		-----ABUTH-----		-----HELAN-----	
			5/5	5/5	6/17	6/17	6/28	6/17	6/28	6/17	6/28
-----% Weed Control-----											
Atrazine+	1.1	PP	96	95	96	95	93	93	93	91	90
isoxaflutole+	0.094										
COC	1% v/v										
Acetochlor&	2.1	PP/	80	90	83	99	99	98	96	99	99
atrazine&	1.5										
glyphosate+	0.56										
AMS/	2.55										
glyphosate+	0.77	MPOST									
AMS	2.55										
S-metolachlor&	1.5	PP/	96	98	93	98	98	96	96	98	98
atrazine&	1.94										
benoxacor+											
2,4-D+	0.25										
COC/	1% v/v										
mesotrione+	0.094	MPOST									
atrazine+	0.25										
COC	1% v/v										
Isoxaflutole+	0.047	PP/	99	99	99	98	98	96	94	98	98
atrazine+	1.1										
2,4-D+	0.25										
COC/	1% v/v										
glyphosate+	0.77	MPOST									
AMS	2.55										
Atrazine+	1.1	PP/	87	95	96	99	98	98	98	99	99
2,4-D+	0.25										
COC/	1% v/v										
glyphosate+	0.77	MPOST									
AMS	2.55										
LSD (P=.05)			9	10	13	6	9	8	12	8	11

¹2,4-D = 2,4-D Ester²COC = 'Prime Oil' by Agrilience³Glyphosate = 'Roundup Weathermax' by Monsanto⁴AMS = 'N-PAK' by Agrilience