

## Weed Control in Reduced Tillage Corn

Winter annual weed control with fall and spring applied herbicides. Horky, Kevin T. and Alex R. Martin. A field study was conducted to evaluate the efficacy of herbicide programs in no-tillage systems. A randomized complete block design with three replications per treatment was utilized. The study was conducted on a Sharpsburg silty clay loam with a 2.4% organic matter and a pH of 6.9. Individual plots consisted of six 30-inch rows, each 30 feet long. Treatments were applied with a tractor-mounted sprayer traveling 3.0 mph. Application, weed, and weather data are presented below:

Date	November 7	April 15
Treatment	Fall	Spring
Sprayer		
gpa	15	15
psi	30	30
Temperature (°F)		
Air	74	70
Soil (4 inch)	55	63
Soil Moisture	Adequate	Adequate
Wind (mph)	8	6
Sky (% cloudy)	0	0
Relative Humidity (%)	17	60
Precip. after appl.		
Week 1	0	0.12
Week 2	0	1.03
Henbit		
Stage	4 leaf	10 leaf
Height (cm)	4	10
Infestation (m <sup>2</sup> )	1000	1000
Tansy Mustard		
Height (cm)	--	10
Infestation (m <sup>2</sup> )	--	5
Shepherdspurse		
Height (cm)	--	20
Infestation (m <sup>2</sup> )	--	3

Summary comments: Fall applied treatments provided significantly better winter annual weed control than spring treatments. Control of henbit and tansy mustard with fall treatments was excellent overall, except with the treatment of flumioxazin and glyphosate. Control of shepherdspurse with fall treatments was excellent. Results of the study are summarized in the following table. (Dept of Agronomy and Horticulture, University of Nebraska-Lincoln)

**Table. Winter annual weed control with fall and spring applied herbicides (Horky and Martin).**

Treatment	Application		---LAMAM---	---DESPI---	---CAPBP---
	Rate	Timing	4/24	4/24	4/24
	(lb/a)		-----% weed control-----		
Chlorimuron+	0.015	FALL	99	99	98
sulfentrazone+	0.19				
2,4-D <sup>1</sup> +	0.5				
COC <sup>2</sup>	1%				
Chlorimuron+	0.018	FALL	99	99	99
sulfentrazone+	0.089				
2,4-D+	0.5				
COC	1%				
Chlorimuron+	0.023	FALL	99	99	99
sulfentrazone+	0.12				
2,4-D+	0.5				
COC	1%				
Chlorimuron+	0.03	FALL	99	99	96
sulfentrazone+	0.15				
2,4-D+	0.5				
COC	1%				
Imazaquin+	0.094	FALL	99	99	99
glyphosate <sup>3</sup> +	0.78				
2,4-D+	0.5				
AMS <sup>4</sup> +	1.5				
NIS <sup>5</sup>	0.25%				
Glyphosate <sup>6</sup> +	0.78	FALL	99	93	99
2,4-D+	0.5				
AMS	2.55				
Flumetsulam+	0.04	FALL	98	99	99
glyphosate <sup>3</sup> +	0.39				
2,4-D+	0.5				
NIS+	0.25%				
AMS	2.55				
Chlorimuron+	0.005	FALL	95	99	98
thifensulfuron+	0.002				
sulfentrazone+	0.16				
2,4-D+	0.5				
COC	1%				
Chlorimuron+	0.018	SPRING	83	85	83
sulfentrazone+	0.088				
2,4-D+	0.5				
COC	1%				
Glyphosate <sup>6</sup> +	0.78	SPRING	83	88	85
AMS	2.55				
2,4-D+	1	SPRING	75	80	80
COC	1%				
2,4-D+	1	SPRING	76	83	83
dicamba	0.25				
2,4-D+	1	FALL	95	98	96
COC	1%				

(continued)

**Table. Winter annual weed control with fall and spring applied herbicides (Horky and Martin), continued.**

Treatment	Application		---LAMAM---	---DESPI---	---CAPBP---
	Rate	Timing	4/24	4/24	4/24
	(lb/a)		-----% weed control-----		
Flumioxazin+	0.096	FALL	93	96	96
2,4-D+	0.5				
COC	1%				
Flumioxazin+	0.064	FALL	96	99	99
2,4-D+	0.5				
tribenuron+	0.006				
COC	1%				
Flumioxazin+	0.064	FALL	83	86	93
glyphosate <sup>6</sup> +	0.39				
AMS	2.5				
Flumioxazin+	0.064	FALL	96	96	97
2,4-D+	0.5				
glyphosate <sup>6</sup> +	0.39				
AMS	2.5				
Flumioxazin+	0.064	FALL	92	95	99
2,4-D+	0.5				
atrazine+	1				
COC	1%				
Glyphosate <sup>6</sup> +	0.78	FALL	95	88	97
AMS	2.55				
2,4-D+	1	FALL	99	99	99
dicamba	0.25				
2,4-D+	1	FALL	99	99	97
atrazine+	1				
COC	1%				
Atrazine+	1	FALL	92	96	92
COC	1%				
Rimsulfuron&	0.01	FALL	99	99	99
thifensulfuron+	0.005				
2,4-D+	0.5				
COC	1%				
Rimsulfuron&	0.016	FALL	99	99	99
thifensulfuron+	0.008				
2,4-D+	0.5				
COC	1%				
Flumetsulam+	0.05	FALL	93	98	99
2,4-D+	0.5				
COC	1%				
Flumetsulam+	0.05	FALL	98	99	99
metribuzin+	0.188				
2,4-D+	0.5				
COC	1%				
LSD (P= 0.05)			5	4	5

<sup>1</sup>2,4-D = 2,4-D Ester<sup>2</sup>COC = 'Prime Oil' by Agrilience<sup>3</sup>glyphosate = 'Roundup Original'<sup>4</sup>AMS = 'N PA-K' by Agrilience<sup>5</sup>NIS = 'Preference' by Agrilience<sup>6</sup>glyphosate = 'Roundup UltraMax'