Weed Control in Reduced Tillage Soybean

Weed control in no-till soybeans. Horky, Kevin T. and Alex R. Martin. A field study was conducted to evaluate the efficacy of weed control programs in no-till 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 19 at a population of 135,000 seeds per acre. Treatments were applied with a tractor-mounted sprayer traveling 3.0 mph. PP treatments were applied 9 days before planting, MPOST treatments were applied 27 days after planting. Application, crop, weed, and environmental data are presented below.

Date	May 10	June 15
Treatment	PP	MPOST
Sprayer		
gpa	15	15
psi	30	30
Temperature (°C)		
air	23	29
soil (4 inch)	15	19
Soil Moisture	adequate	adequate
Wind (mph)	5	5
Sky (% cloudy)	25	5
Relative		
humidity (%)	50	25
Precip. After appl. (inches)		
week 1	1.99	0.06
week 2	0	1.55
Soybean		
No. trifoliate leaves	--	3
height (cm)	--	23
Common lambsquarters		
height (cm)	5	--
infestation (m^2)	2	--
Henbit		
height (cm)	16	--
infestation (m^2)	20	--
Velvetleaf		
height (cm)	2	20
infestation (m^2)	4	5
Common sunflower		
height (cm)	2	25
infestation (m^2)	4	4

Summary comments: All treatments included glyphosate PP or POST. All treatments were effective against winter annual and summer annual weeds. 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 soybeans (Horky and Martin).

	Application		CHEAL	LAMAM	----------ABUTH----------			----------HELAN----------		
Treatment	Rate	Timing	5/24	5/24	5/24	6/15	6/30	5/24	6/15	6/30
			----------% Weed Control----------							
Glyphosate+	0.77	PP/	99	99	93	82	99	80	40	99
AMS[1]/	2.55									
glyphosate+	0.77	MPOST								
AMS	2.55									
Flumioxazin+	0.064	PP/	99	99	96	83	99	85	65	99
2,4-D[2]+	0.5									
COC[3]/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
Glyphosate&	0.94	PP/	99	99	93	77	99	88	58	99
s-metolachlor/	1.13									
glyphosate+	0.65	MPOST								
AMS	2.55									
Imazethapyr&	0.064	PP/	99	99	99	96	99	96	87	99
glyphosate+	0.75									
NIS[4]+	0.25% v/v									
AMS/	2.55									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	95	85	99	99	87	99
chlorimuron+	0.015									
thifensulfuron+	0.0049									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	99	93	99	98	88	99
chlorimuron+	0.016									
tribenuron+	0.0047									
COC/	1%v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	96	88	99	93	80	99
chlorimuron+	0.015									
metribuzin+	0.088									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	98	92	99	99	85	99
chlorimuron+	0.015									
metribuzin+	0.16									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									

(continued)

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

	Application		CHEAL	LAMAM	----------ABUTH----------			----------HELAN----------		
Treatment	Rate	Timing	5/24	5/24	5/24	6/15	6/30	5/24	6/15	6/30
			----------% Weed Control----------							
2,4-D+	0.5	PP/	99	99	99	93	99	91	77	99
chlorimuron+	0.016									
linuron+	0.28									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	96	90	99	93	83	99
chlorimuron+	0.015									
sulfentrazone+	0.073									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	93	90	99	99	93	99
chlorimuron+	0.016									
flumioxazin+	0.064									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	99	95	99	99	85	99
chlorimuron+	0.027									
thifensulfuron+	0.0086									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	95	87	99	99	93	99
chlorimuron+	0.027									
tribenuron+	0.081									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	99	95	99	99	96	99
chlorimuron+	0.027									
metribuzin+	0.16									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	96	92	99	93	85	99
chlorimuron+	0.027									
metribuzin+	0.28									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									

(continued)

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

	Application		CHEAL	LAMAM	----------ABUTH----------			----------HELAN----------		
Treatment	Rate	Timing	5/24	5/24	5/24	6/15	6/30	5/24	6/15	6/30
			----------% Weed Control----------							
2,4-D+	0.5	PP/	99	99	98	92	99	94	85	99
chlorimuron+	0.027									
linuron+	0.49									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	96	87	99	94	85	99
chlorimuron+	0.027									
sulfentrazone+	0.13									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	90	77	99	90	63	99
linuron+	0.5									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	92	78	99	95	78	99
linuron+	0.75									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
2,4-D+	0.5	PP/	99	99	96	87	99	94	80	99
metribuzin+	0.28									
COC/	1% v/v									
glyphosate+	0.77	MPOST								
AMS	2.55									
LSD (P=.05)			0	0	5.7	9.6	0	8.8	16.8	0

[1]AMS = 'N-PAK' by Agriliance

[2]2,4-D = ' 2,4-D ester' by Agriliance

[3]COC = 'Prime Oil' by Agriliance

[4]NIS = 'Preference' by Agriliance