

Weed Control in Small Grains

Weed control in sorghum. Horky, Kevin T. and Alex R. Martin. A field study was conducted to evaluate the efficacy of weed control programs in sorghum. 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, each 30 feet long. 'Dekalb DK53' sorghum was planted June 4 at a rate of 9 pounds per acre. Treatments were applied with a tractor-mounted sprayer traveling 3.0 mph. POST treatments were applied 25 days after planting. Application, crop, weed, and environmental data are presented below:

Date	June 4	June 29
Treatment	PRE	POST
Sprayer		
gpa	15	15
psi	30	30
Temperature (°C)		
air	28	29
soil (4 inch)	19	21
Soil Moisture	adequate	adequate
Wind (mph)	3	4
Sky (% cloudy)	20	30
Relative		
humidity (%)	54	32
Precip. After appl. (inches)		
week 1	0.18	2.92
week 2	1.01	0.66
Sorghum		
stage	--	V4
height (cm)	--	25
Velvetleaf		
height (cm)	--	15
infestation (m2)	--	4
Green foxtail		
height (cm)	--	12
infestation (m2)	--	3
Palmer amaranth		
height (cm)	--	23
infestation (m2)	--	5

Summary comments: POST treatments improved control of velvetleaf and Palmer amaranth. Crop injury was observed with carfentrazone + atrazine in the POST treatment. Results of the study are summarized in the following table. (Dept. of Agronomy and Horticulture, University of Nebraska-Lincoln)

Table. Weed control in sorghum (Horky and Martin).

Treatment	Application		-----ABUTH-----		-----SETVI-----		-----AMAPA-----		SORVU
	Rate	Timing	7/1	7/14	7/1	7/14	7/1	7/14	7/14
	(lb/a)		-----%Weed Control-----						(% Necrosis)
S-metolachlor& benoxacor/ fluroxypyr	1.02 0.13	PRE/ POST	30	88	99	99	95	95	0
S-metolachlor& benoxacor/ fluroxypyr+ atrazine+ COC ¹	1.02 0.13 1.1 1% v/v	PRE/ POST	32	98	99	99	95	96	0
S-metolachlor& benoxacor/ fluroxypyr+ clopyralid	1.02 0.09 0.09	PRE/ POST	35	92	99	99	95	99	0
S-metolachlor& benoxacor/ fluroxypyr+ clopyralid+ atrazine+ COC	1.02 0.09 0.09 1.1 1% v/v	PRE/ POST	20	99	99	99	95	98	0
S-metolachlor& atrazine& benoxacor	1.26 1.63	PRE	58	80	93	93	95	90	0
S-metolachlor& atrazine& benoxacor/ prosulfuron+ atrazine+ COC	1.26 1.63 0.018 0.75 1.5% v/v	PRE/ POST	63	90	95	95	95	99	0
Alachlor& atrazine/ halosulfuron+ COC	2.19 1.31 0.03 1.5% v/v	PRE/ POST	58	95	98	98	96	98	0
S-metolachlor& benoxacor/ carfentrazone+ atrazine+ NIS ²	1.02 0.006 1.0 0.25% v/v	PRE/ POST	10	99	99	99	95	98	20
S-metolachlor& benoxacor/ metsulfuron+ 2,4-D ³	1.34 0.2 0.285	PRE/ POST	17	85	99	99	95	99	0
S-metolachlor& benoxacor/ metsulfuron	1.34 0.2	PRE/ POST	23	55	99	99	95	99	0

(continued)

Table. Weed control in sorghum (Horky and Martin), continued.

Treatment	Application		-----ABUTH-----		-----SETVI-----		-----AMAPA-----		SORVU
	Rate	Timing	7/1	7/14	7/1	7/14	7/1	7/14	7/14
	(lb/a)		-----%Weed Control-----						(% Necrosis)
Dimethenamid-P& atrazine/ prosulfuron+ atrazine+ COC	0.64 1.24 0.018 0.5 1.5% v/v	PRE/ POST	53	90	96	96	95	99	0
Quinclorac+ atrazine+ MSO ⁴ + AMS ⁵	0.25 1.0 1.5 pt/a 2.5	POST	0	85	0	88	0	90	0
Atrazine+ MSO	2.0 1.5 pt/a	POST	0	85	0	45	0	92	0
S-metolachlor& atrazine& benoxacor/ bromoxynil+ atrazine	1.26 1.63 0.31 0.63	PRE/ POST	55	98	93	93	95	96	0
LSD (P=.05)			21	9	2	3	1	6	0

¹COC = 'Prime Oil' by Agrilience²NIS = 'Preference' by Agrilience³2,4-D = 2,4-D Amine⁴MSO = 'Destiny' by Agrilience⁵AMS = 'N-PAK' by Agrilience