Evaluation of sorghum weed control programs. Abendroth, Julie A., Alex R. Martin, and Jess J. Spotanski. A field study was conducted to evaluate the efficacy and crop response of herbicide programs in conventionally tilled sorghum. A randomized complete block design with three replications per treatment was utilized. The study was conducted on a Sharpsburg silty clay loam with 3.2% organic matter and a pH of 6.6. Seedbed preparation consisted of disking prior to planting and one field cultivation the day of planting. Individual plots consisted of six 30-inch rows, each 30 feet long. 'Dekalb DK 53' sorghum was planted June 3 at a population of 111,800 seeds/acre. Treatments were applied with a tractor-mounted sprayer traveling 3.0 mph. To simplify the data table, July 20 is actually a compilation of two rating times; the PRE+EPOST and EPOST alone treatments were rated on July 15 (28 DAT) and the PRE+MPOST treatments were rated on July 25 (28 DAT). Application, crop, weed, and environmental data are presented below:

Date	June 3	June 17	June 27
Treatment	PRE	EPOST	MPOST
Sprayer			
gpa	15	15	15
psi	30	30	30
Temperature (°F)			
Air	86	82	77
Soil (4 inch)	72	79	79
Soil Moisture	Adequate	Dry	Dry
Wind (mph)	1	5	4
Sky (% cloudy)	50	20	0
Relative Humidity (%)	53	37	59
Precip. after appl.			
Week 1 (inch)	0.0	0.0	0.0
Week 2 (inch)	0.08	0.0	0.39
Sorghum			
Leaf no.	--	3	6
Height (inch)	--	3.5	12
Velvetleaf			
Leaf no.	--	3	7
Height (inch)	--	1	6
Infestation (m^2)	--	13	25
Pigweed species			
Leaf no.	--	6	many
Height (inch)	--	2	5
Infestation (m^2)	--	3	4

Summary comments: The amount of precipitation received this summer was far below normal, with 3 inches during April, 4.8 inches in May, 0.08 inches in June and 0.6 inches during July. The majority of Amaranthus species, AMASS, were Palmer amaranth with some waterhemp. The POST programs performed better than those that were PRE-only. Overall, efficacy was excellent for the PRE+MPOST and EPOST-only treatments when either carfentrazone or dicamba was included. Efficacy was similar because precipitation was low and therefore a second flush of weeds did not occur. Necrosis occurred with a minority of treatments, specifically those that included carfentrazone. Overall, the crop appeared stressed for the majority of the summer; yields followed a general trend, in which the PRE-only treatments resulted in the lowest yields and the PRE+MPOST treatments having the greatest, with EPOST falling in the middle. The occurrence of crop injury is not correlated with yield. Results of the study are summarized in the following table. (Dept. of Agronomy and Horticulture, University of Nebraska-Lincoln)

Table. Evaluation of sorghum weed control programs (Abendroth, Martin, and Spotanski).

Treatment	Application		SORBI	ABUTH			AMASS[a]			SORBI
	Rate	Timing	7/5	7/5	7/20	8/26	7/5	7/20	8/26	Yield
	(lb/A)		%injury	%weed control						(bu/A)
S-metolachlor&CGA-154281&	1.26	PRE	0	40	---	15	93	---	93	51
atrazine	1.63									
Dimethenamid&	1.17	PRE	0	18	---	12	95	---	99	50
atrazine	1.34									
S-metolachlor&CGA-154281/	1.28	PRE/	0	68	50	47	88	95	97	69
CGA-152005+	0.02	MPOST								
atrazine+	0.75									
COC[b]	1.67%									
Dimethenamid-p/	0.70	PRE/	1	89	89	94	87	95	98	66
CGA-152005+	0.018	MPOST								
dicamba+	0.125									
NIS[c]	0.25%									
S-metolachlor&CGA-154281/	1.28	PRE/	0	91	89	98	87	98	99	66
CGA-152005+	0.018	MPOST								
dicamba+	0.125									
NIS	0.25%									
S-metolachlor&CGA-154281/	1.28	PRE/	12	93	93	92	88	93	88	68
carfentrazone+	0.0078	MPOST								
atrazine+	0.75									
NIS	0.25%									
S-metolachlor&CGA-154281/	1.62	PRE/	11	94	93	93	85	92	90	68
carfentrazone+	0.0078	MPOST								
atrazine+	1.0									
NIS	0.25%									
S-metolachlor&CGA-154281/	1.62	PRE/	8	94	88	91	43	91	93	58
carfentrazone+	0.0078	MPOST								
2,4-D[d]+	0.24									
NIS	0.25%									
S-metolachlor&CGA-154281/	1.62	PRE/	5	89	94	93	91	97	99	54
carfentrazone+	0.0078	MPOST								
atrazine+	0.50									
2,4-D[d]+	0.47									
NIS	0.25%									
Dimethenamid-p&	0.85	PRE	0	27	---	10	86	---	87	59
atrazine	1.65									
Dimethenamid-p&	0.84	PRE/	0	89	85	87	99	100	98	61
atrazine/	1.031									
quinclorac+	0.25	EPOST								
atrazine+	0.55									
MSO[e]+	1.25%									
AMS[f]	2.5									
Quinclorac+	0.25	EPOST	0	97	95	91	99	99	97	55
dicamba&	0.28									
atrazine+	0.53									
MSO+	1.25%									
AMS	2.5									
Quinclorac+	0.25	EPOST	0	89	86	88	99	100	100	68
atrazine+	1.11									
MSO+	1.25%									
AMS	2.5									

(continued)

Table. Evaluation of sorghum weed control programs (Abendroth, Martin, and Spotanski), continued.

Treatment	Application		SORBI	ABUTH			AMASS[a]			SORBI
	Rate	Timing	7/5	7/5	7/20	8/26	7/5	7/20	8/26	Yield
	(lb/A)		%injury	%weed control						(bu/A)
Quinclorac+	0.25	EPOST	0	93	94	95	90	96	94	49
dicamba+	0.25									
MSO+	1.25%									
AMS	2.5									
Quinclorac+	0.25	EPOST	0	57	57	22	8	63	22	63
MSO+	1.25%									
AMS	2.5									
Atrazine+	1.98	EPOST	0	85	65	70	97	100	98	62
MSO	1.25%									
Atrazine+	1.17	EPOST	0	85	62	58	97	100	100	59
2,4-D[g]+	0.12									
MSO	1.25%									
Alachlor&	2.19	PRE	0	48	---	13	97	---	100	54
atrazine	1.31									
Atrazine	1.98	PRE	0	22	---	7	92	---	93	50
S-metolachlor&CGA-154281/	1.62	PRE/	0	65	84	91	72	87	94	66
metsulfuron+	0.00375	MPOST								
2,4-D[d]	0.28									
Check			0	0	0	0	0	0	0	41
LSD (P=.05)			2	10	12	10	11	11	8	14

[a]AMASS = mostly Palmer amaranth, with some waterhemp

[b]COC = Prime Oil by Agrilliance

[c]NIS = Preference by Agrilliance

[d]2,4-D = 2,4-D Amine as in Weedar 64

[e]MSO = Destiny by Agrilliance

[f]AMS = N Pa-K by Agrilliance

[g]2,4-D = 2,4-D Ester as in Weedone