Kochia Control in Soybean, Crookston - 2001

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An experiment was conducted to evaluate control of kochia in soybean with various rates and timings of Roundup Ultra. 'Gold Country 3104 Roundup Ready' soybean was planted at 150,000 seeds per acre in 22 inch rows on May 29. Preplant incorporated herbicides were incorporated with a Melroe multi-weeder/harrow with two passes made in opposite directions. Treatments were arranged in a randomized complete block design with four replications. Herbicide treatments were made to the center 4 rows of six row plots with a CO_2 backpack sprayer delivering 10 gpa at 30 psi and equipped with XR80015 flat fan nozzles.

Environmental conditions and application information are listed below:

Date	May 29	June 18	June 25	June 29	July 3
Application	PPI,PRE	POST	POST	POST	POST
Sky	Clear	P Cloudy	Clear	Clear	Clear
Wind (mph)	6-7 NE	4-6 E	1-2 W	0	3 S
Temp	63°F	64°F	79°F	79°F	59°F
Soil	Moist	Moist	Dry	Dry	Moist
Crop stage	-	unifol	1 trif	2 trif	2-3 trif
Kochia (inch)		1-2	3-10	4-12	-
Kochia density	9-42 plants/ft^2				

Table. Kochia control in soybean, Crookston MN

Treatment	Rate	Timing	Aug 8 Kochia	Yield
	(pts/acre)		---%---	(bu/acre)
Roundup Ultra	2	4-10 in	96	38.2
Roundup Ultra/same	1	1-2 in	100	38.6
Roundup Ultra/same	1.5	1-2 in	100	47.2
Raptor + NIS	5 oz + 0.25%	4-10 in	52	25.7
Lasso/Roundup Ultra	3/2	PRE/4-10 in	100	40.4
Treflan/Roundup Ultra	3/2	PPI/4-10 in	99	38.3
Lasso/Roundup Ultra	3/2	PRE/4-12 in	96	38.9
Treflan/Flexstar	1.5/0.75	PPI/4-10 in	56	27.3
Roundup Ultra	2	4-12 in	99	39.4
Check	-		0	0
LSD (0.05)			9.8	7.5

Kochia control was excellent with all Roundup Ultra rates, timings and herbicide combinations. It was estimated that approximately 1% of the kochia in this trial was resistant to the ALS mode of action. Early observations of soybean vigor indicated that delaying herbicide applications to the 4-10 inch stage was allowing too much competition from the kochia to occur. These differences were not evident in grain yield, it is believed, due to uneven effects of iron chlorosis in the experimental area.