Evaluation of s-metolachlor & atrazine & mesotrione in corn. Nettleton, Sean D., Bryan G. Young, Joseph L. Matthews, and Mark A. Waddington. This study was designed to evaluate the performance of the Lexar formulation of s-metolachlor & atrazine & mesotrione for preemergence applications in corn. The study was conducted on an Ebbert silt loam with 2.7 % organic matter and pH 6.2 at the Belleville Research Center. Fertilizer applied was 150, 50, and 100 lb/A of N, P_2O_5 , and K_2O, respectively, to an area that had been cropped to soybean in 2003. Dekalb 'DKC 60-17 RR' corn was planted 1.5 inch deep at 28000 seeds per acre into a reduced-till seedbed on May 11, 2004. Plots consisted of four rows with 30 inch row spacing, 30 ft long arranged in a randomized complete block design with 4 replications. The herbicides were broadcast applied with a CO_2 pressurized sprayer using 8003 flat fan tips at 40 PSI and 20 GPA water. Monthly rainfall in inches was 1.3, 8.7, 2.8, 6.6, and 5.2 in April, May, June, July and August, respectively. Weed populations per 0.25 M^2 in the nontreated plots, mid-season, were: greater than 50 giant foxtail; 9 common cocklebur; 2 velvetleaf; 1 common ragweed; and 3 morningglory species. Applications were preemergence (PRE). Total rainfall for the 7 days following the PRE application was 1.6 inches. Application information is listed below.

Date	5-11-04
Treatment	PRE
Air temperature (F)	78
Relative humidity (%)	56

No corn injury was observed from any of the herbicide treatments. All herbicide treatments provided good to excellent control of giant foxtail, velvetleaf, common ragweed, and morningglory species at 56 days after treatment (DAT). No herbicide treatment provided greater than 94% control of common cocklebur, with the worst being s-metolachlor & atrazine (71%), acetochlor & atrazine (71%), and dimethenamid-p & atrazine (73%). S-metolachlor & atrazine + simazine (94%) provided the greatest control of common cocklebur, followed by acetochlor & atrazine & dichlormid + flumetsulam & clopyralid (93%). There were no significant differences in corn yield between herbicide treatments. This research shows that s-metolachlor & atrazine alone did not provide greater than 90% control of common cocklebur, however control was greater than 90% with s-metolachlor & atrazine + simazine. (Dept. of Plant, Soil and Agricultural Systems, Southern Illinois University, Carbondale)

Table. Evaluation of s-metolachlor & atrazine & mesotrione in corn. (Nettleton, Young, Matthews and Waddington)

					Control														
			Corn		SETFA			XANST			ABUTH			AMBEL			IPOSS		
	Application			Injury[b]	14	DA PRE		14	DA PRE		14	DA PRE		14	DA PRE		14	DA PRE	
Treatment[a]	Rate	Time	Yield	7 DAE	DAE	28	56	DAE	28	56	DAE	28	56	DAE	28	56	DAE	28	56
	(lb/A)		bu/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Nontreated			98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S-metolachlor & atrazine & mesotrione & benoxacor(LEX)	1.1 & 1.1 & 0.139	PRE	188	0	99	99	99	95	94	79	99	99	99	99	99	99	99	97	97
S-meto & atra & mesotrione & benoxacor(LEX)	1.31 & 1.31 & 0.167	PRE	179	0	99	99	99	94	95	85	99	99	99	99	99	99	99	98	98
S-meto & atra & mesotrione & benoxacor(LEX)	1.52 & 1.52 & 0.194	PRE	182	0	99	99	99	95	95	86	99	99	99	99	99	99	99	99	99
S-meto & atra & benoxacor	1.27 & 1.63	PRE	176	0	99	99	99	90	86	71	99	96	96	99	98	98	99	97	97
S-meto & atra & mesotrione & benoxacor(LUM)	1.67 & 0.624 & 0.166	PRE	185	0	99	99	99	96	96	90	99	99	99	99	99	99	99	98	98
S-meto & atra & mesotrione & benoxacor(LEX) + simazine	1.31 & 1.31 & 0.167 + 1.0	PRE	186	0	99	99	99	96	97	94	99	99	99	99	99	99	99	98	98
Dimethenamid-P & atra	0.64 & 1.24	PRE	166	0	99	99	99	93	90	73	99	99	99	99	97	97	99	97	97
Acetochlor & atra & MON 4660	1.56 & 1.24	PRE	204	0	99	99	99	94	90	80	99	98	98	99	98	98	99	96	96
Flufenacet & isoxaflutole	0.3 & 0.062	PRE	182	0	99	99	99	89	86	71	99	99	99	98	99	99	97	86	86
Acet & atra & dichlormid	1.96 & 1.44	PRE	172	0	99	99	99	96	91	78	99	98	98	99	99	99	99	98	98
Acet & atra & dcmd + flumetsulam & clopyralid	1.96 & 1.44 + 0.0346 & 0.093	PRE	181	0	99	99	99	96	97	93	99	99	99	99	99	99	99	98	98
S-meto & atra & mesotrione & benoxacor(LUM) + atrazine	1.67 & 0.624 & 0.166 + 1.0	PRE	189	0	99	99	99	92	95	90	99	99	99	99	99	99	99	98	98
LSD			42	0	0	0	0	4	5	9	1	2	2	1	1	1	1	4	4
P			0.01	1.0	1.0	1.0	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

[a](LEX) = Lexar. (LUM) = Lumax.

[b]Corn was also evaluated at 14 days after emergence and 28 and 56 days after preemergence application with no observable injury at any time. DAE = Days after emergence.