Topramezone corn herbicide evaluation. Young, Bryan, G. and Jennifer A. Hagerman. This study was designed to compare the performance of topramezone to other postemergence commercial standards when used in sequential weed control programs in field corn. The study was conducted on a Rushville silt loam with 2.3% organic matter and pH 6.0 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 2004. Pioneer brand 33P71 CL field corn was planted 1.5 inch deep at 28000 seed/A into a reduced-till seedbed on May 5, 2005. Plots consisted of four 30 inch rows, 28 ft long arranged in a randomized complete block design with 3 replications. The herbicides were broadcast applied with a CO_2 pressurized sprayer using 8003 flat fan tips at 40 PSI in 20 GPA water. Monthly rainfall in inches was 2.9, 0.8, 1.6, 4.8 and 3.2 in April, May, June, July and August, respectively. Rainfall in May was sparse; 0.07 inches on the 9th, 0.4 inches on the 14th, and 0.32 inches on the 20th. Weed population per 0.25m^2 in the nontreated plots, mid-season, was 50 giant foxtail, 18 common waterhemp, 5 giant ragweed, and 4 common ragweed. Applications were made preemergence (PRE), and postemergence at 2 to 4 inch weed heights (2-4'W). Application information is listed below.

Date	May-06-05	May-24-05
Treatment	PRE	2-4"W
Air temperature (F)	76	62
Relative humidity (%)	30	70
Soil moisture	NORMAL	NORMAL
field corn		
leaf no.		V4
height (inch)		7-8
giant foxtail		
leaf no.		4-5
height (inch)		1-5
giant ragweed		
leaf no.		4-6
height (inch)		3-5
common ragweed		
leaf no.		4-6
height (inch)		1-3

No corn injury was observed from any treatment. Following a PRE application of s-metolachlor & atrazine with either mesotrione + atrazine or topramezone + atrazine when weeds were 2 to 4 inches (POST) provided at least 97% control of giant ragweed, common waterhemp, and common ragweed by 28 days after POST (DAPO). However, topramezone + atrazine controlled less giant foxtail (70%) than mesotrione + atrazine (94%) at 28 DAPO. Adding nicosulfuron, nicosulfuron & rimsulfuron, or formasulfuron to topramezone + atrazine increased control of giant foxtail to at least 96%. Corn yield was variable but tended to be higher from treatments which controlled at least 94% of giant foxtail at 21 DAPO. (Dept. of Plant, Soil and Agricultural Systems, Southern Illinois University, Carbondale).

Table. Topramezone corn herbicide evaluation. (Young and Hagerman)

Treatment[a]	Application Rate	Application Time[b]	Corn Yield	Corn Injury, DA POST[c] 14	28	56	Control, days after 2 to 4 inch weed height application: SETFA 14	SETFA 28	SETFA 56	AMBTR 14	AMBTR 28	AMBTR 56	AMATA 14	AMATA 28	AMATA 56	AMBEL 14	AMBEL 28	AMBEL 56
	(lb/A)		bu/A	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Nontreated			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S-metolachlor & atrazine & benoxacor	0.96 & 1.24	PRE	64	0	0	0	80	55	50	82	72	63	99	99	99	91	93	93
S-metolachlor & atrazine & benoxacor / topramezone + atrazine + MSO + 28%N	0.96 & 1.24 / 0.016 + 0.5 + 1.0% + 2.5%	PRE / 2-4"W	164	0	0	0	90	70	63	97	97	95	99	99	99	99	99	99
S-metolachlor & atrazine & benoxacor / mesotrione + atrazine + COC + 28%N	0.96 & 1.24 / 0.094 + 0.25 + 1.0% + 2.5%	PRE / 2-4"W	199	0	0	0	97	94	81	97	98	98	99	99	99	99	99	99
S-metolachlor & atrazine & benoxacor / dicamba & diflufenzopyr + NIS + 28%N	0.96 & 1.24 / 0.125 & 0.05 + 0.25% + 1.25%	PRE / 2-4"W	183	0	0	0	97	79	77	97	94	93	99	99	99	99	99	99
S-metolachlor & atrazine & benoxacor / topramezone + nicosulfuron + atrazine + MSO + 28%N	0.96 & 1.24 / 0.016 + 0.031 + 0.5 + 1.0% + 2.5%	PRE / 2-4"W	203	0	0	0	99	96	94	97	97	97	99	99	99	99	99	99
S-metolachlor & atrazine & benoxacor / topramezone + nicosulfuron & rimsulfuron + atrazine + MSO + 28%N	0.96 & 1.24 / 0.016 + 0.0233 & 0.0117 + 0.5 + 1.0% + 2.5%	PRE / 2-4"W	210	0	0	0	98	98	97	97	98	98	99	99	99	99	99	99
S-metolachlor & atrazine & benoxacor / topramezone + foramsulfuron + atrazine + MSO + 28%N	0.96 & 1.24 / 0.016 + 0.033 + 0.5 + 1.0% + 2.5%	PRE / 2-4"W	194	0	0	0	98	98	96	97	96	96	99	99	99	99	99	99
LSD			43.3	0	0	0	8.5	20	19	3.5	11	13	0.4	0	0	5.7	6.8	6.8
P			0.01	1.0	1.0	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	1.0	1.0	0.01	0.01	0.01

[a]Topramezone is the proposed common name for the active ingredient in Impact herbicide from AMVAC Chemical Corporation.

MSO = Destiny, a methylated soybean oil plus emulsifiers from Agriliance LLC.

28%N = 28% urea ammonium nitrate.

COC = Prime Oil crop oil concentrate, a petroleum based additive with 17% emulsifier from Agriliance LLC.

NIS = Activator 90, a nonionic surfactant from Loveland Industries, Inc.

[b]2-4"W = 2 to 4 inch weed height.

[c]DA POST = Days after 2 to 4 inch weed height application.