

Flumioxazin plus atrazine in no-till corn. Young, Bryan, G. and Julie M. Young. This study was designed to evaluate flumioxazin plus atrazine for early preemergence weed control in no-till glyphosate-resistant field corn. The study was conducted on a Weir silt loam with 1.6% organic matter and pH 6.1 at the Belleville Research Center. Fertilizer applied was 150, 50 and 100 lb/A of N, P₂O₅ and K₂O, respectively, to an area that had been cropped to soybean in 2004. Pioneer brand 33P65 RR field corn was planted 1.5 inch deep at 28000 seed/A into a no-till seedbed on May 8, 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 CO₂ pressurized sprayer using 8002 flat fan tips at 40 PSI in 15 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 0.25m² in the nontreated plots, mid-season, was 27 giant foxtail, 5 each of common ragweed and common lambsquarters, and 2 each of Pennsylvania smartweed and common waterhemp. Applications were made at 14 days before planting (14DBP) and at 8 to 10 inch common waterhemp height (8-10"WH). Application information is listed below.

Date	Apr-27-05	Jun-06-05
Treatment	14DBP	8-10"WH
Air temperature (F)	46	82
Relative humidity (%)	70	59
Soil moisture	ABONOR	NORMAL
field corn		
leaf no.		V5-V6
height (inch)		12-14
little barley		
leaf no.	5-6	
height (inch)	6-8	
Pennsylvania smartweed		
leaf no.	5-6	
height (inch)	1-3	
wild garlic		
leaf no.	3-4	
height (inch)	8-16	
smallflower buttercup		
leaf no.	10+	
height (inch)	8-12	
common ragweed		
leaf no.	5-6	12-14
height (inch)	1-3	11-13
common lambsquarters		
leaf no.	5-6	
height (inch)	1-3	
giant foxtail		
leaf no.	2-3	5-6
height (inch)	1-2	10-12
common waterhemp		
leaf no.		6-10
height (inch)		3-8

No corn injury was observed from any treatment. Atrazine + glyphosate applied 14 days before planting (DBP) provided complete control of Pennsylvania smartweed, little barley, smallflower buttercup, common ragweed, and common lambsquarters by 28 days after planting (DAP). However, control of common waterhemp was only 84% from atrazine + glyphosate. Adding flumioxazin to atrazine + glyphosate increased control of common waterhemp to 99%. Corn yield was similar among all herbicide treated plots. (Dept. of Plant, Soil and Agricultural Systems, Southern Illinois University, Carbondale).

Table. Flumioxazin plus atrazine in no-till corn. (Young and Young)

Treatment ^a	Application ^b		Control, days after planting																	
			Corn			Control, days after planting														
	Rate	Time	yield	Injury		HORPU		POLPY			ALLVI	RANAB	AMBEL		CHEAL		SETFA		AMATA	
(lb/A)		bu/A	14	28	0	14	0	14	28	0	0	14	28	14	28	14	28	14	28	
			%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
Nontreated			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Glyphosate / glyphosate	0.77 / 0.77	14DBP / 8-10"WH	159	0	0	99	99	99	99	99	40	99	98	94	99	94	83	43	70	37
Atrazine + Glyphosate / glyphosate	1.0 + 0.77 / 0.77	14DBP / 8-10"WH	168	0	0	98	99	99	99	99	37	99	99	99	99	99	96	80	98	84
Flumioxazin + glyphosate / glyphosate	0.064 + 0.77 / 0.77	14DBP / 8-10"WH	176	0	0	99	99	99	99	99	37	99	98	96	98	98	92	78	97	86
Atrazine + flumioxazin + glyphosate / glyphosate	1.0 + 0.064 + 0.77 / 0.77	14DBP / 8-10"WH	183	0	0	99	99	99	99	99	38	99	99	99	99	99	97	88	99	99
Atrazine + flumioxazin + 2,4-De + COC / glyphosate	1.0 + 0.064 + 0.95 + 2.0pt / 0.77	14DBP / 8-10"WH	167	0	0	80	78	99	99	99	33	99	99	99	99	99	95	83	99	96
LSD			27.3	0	0	7.4	13	0	0	0	11.4	0	1.1	4.7	1	3.3	9.9	12.6	12.9	12
P			0.01	1.0	1.0	0.01	0.01	1.0	1.0	1.0	0.01	1.0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

^aAll glyphosate was Roundup Original Max. All glyphosate applications included AMS at 2.0% w/w. AMS = spray grade ammonium sulfate.

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

^b14DBP = 14 days before planting. 8-10"WH = 8 to 10 inch common waterhemp.