

Weed control with POST applied flufenacet, glufosinate and foramsulfuron tank mixes in corn at Lamberton, MN in 2003. Getting, Jodie K. and Bruce D. Potter The objective of this study was to evaluate flufenacet, glufosinate and two formulations of foramsulfuron for annual grass and annual broadleaf weed control in corn. This study was conducted on a Normania loam soil containing 5.1% organic matter, pH 6.2 and soil test P and K levels of 42 and 338 lb/A, respectively. A randomized complete block design with four replications and a plot size of 10 by 30 ft was used. The site was planted to oats in 2002 and was fall chiseled. The area was fertilized with 180 lb/A of nitrogen as urea. On May 2, 2003, Northrup King 'N32L9' glufosinate resistant field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. Cyfluthrin + tebupirimphos (Aztec 2.1G) was applied at 6.7 oz/1000 row feet in a T-band for the control of northern corn rootworm larvae. All treatments were applied with a tractor-mounted sprayer delivering 20 gpa at a pressure of 40 psi. The sprayer was equipped with 8002 flat-fan nozzles spaced 15 inches apart on the boom. Application dates, environmental conditions, plant sizes and rainfall data are listed below:

Date	May 2	May 29
Treatment	PRE	POST
Temperature (F)		
air	63	75
soil (4 inch)	58	70
Relative humidity (%)	22	27
Wind (mph)	E 5	S 5
Sky	clear	clear
Soil moisture	dry	dry
Corn		
leaf no.	-	2-collar
height (inch)	-	3
Yellow foxtail		
leaf no.	-	1 to 3
height (inch)	-	1 to 3
no./ft ²	-	98
Common lambsquarters		
leaf no.	-	2 to 4
height (inch)	-	1 to 3
no./ft ²	-	6
Tall waterhemp		
leaf no.	-	3 to 5
height (inch)	-	1 to 3
no./ft ²	-	1
Rainfall after application (inch)		
1 week	1.07	0.17
2 week	1.15	1.24
3 week	0.50	0.01

Early season crop development was delayed due to a June 23 hailstorm. The precipitation received in July and August was below average with a total of 2.96 inches compared to the historical average of 7.07 inches. None of the herbicide treatments caused visible crop injury. On May 28, prior to POST treatments, isoxaflutole + atrazine applied PRE gave 89 to 91% yellow foxtail control and 98% common lambsquarters and tall waterhemp control. In August, isoxaflutole + atrazine applied PRE resulted in 55% yellow foxtail control. The PRE/POST treatments gave 92 to 95% yellow foxtail control and 97% or greater control of common lambsquarters and tall waterhemp. Glufosinate + flufenacet + atrazine + AMS applied POST provided 91% yellow foxtail control and 98% common lambsquarters and tall waterhemp control. Glufosinate + AMS gave 63, 70, and 77% control of yellow foxtail, common lambsquarters, and tall waterhemp control, respectively. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Weed control with POST applied flufenacet, glufosinate and foramsulfuron tank mixes in corn at Lamberton, MN in 2003 (Getting, Potter).

Treatment ^a	Rate	SETLU				CHEAL				AMATU				Yield (bu/A) ^b
		5/28	6/10	6/27	8/27	5/28	6/10	6/27	8/27	5/28	6/10	6/27	8/27	
<u>Preemergence</u>	(lb/A or %)	-----(% control)-----												
Isoxaflutole+atrazine	0.047+1.0	89	84	70	55	98	98	95	93	98	98	94	93	113
<u>Preemergence/POST (1 to 3-inch weeds)</u>														
Isoxaflutole+atrazine/ AE F130360+Fict+MSO+28%N	0.047+1.0/ 0.03+0.3+0.94%+2.0%	91	97	98	93	98	98	98	97	98	98	98	97	153
Isoxaflutole+atrazine/ AE F130360+Fict ¹ +MSO+28%N	0.047+1.0/ 0.03+0.3+0.94%+2.0%	90	97	97	92	98	98	98	98	98	98	98	98	154
Isoxaflutole+atrazine/ Gluf+Fict+AMS	0.047+1.0/ 0.42+0.3+3.0	90	98	98	95	98	98	97	98	98	98	98	98	152
<u>POST (1 to 3-inch weeds)</u>														
AE F130360+MSO+28%N	0.03+0.94%+2.0%	-	91	86	68	-	95	88	84	-	98	83	89	119
AE F130360+Fict+Atra+MSO+28%N	0.03+0.3+1.0+0.94%+2.0%	-	92	91	80	-	98	98	93	-	98	94	94	136
Glufosinate+AMS	0.42+3.0	-	96	83	63	-	97	78	70	-	98	80	77	115
Gluf+Fict+Atra+AMS	0.42+0.3+1.0+3.0	-	98	95	91	-	98	98	98	-	98	98	98	145
<u>Checks</u>														
Weedy check		0	0	0	0	0	0	0	0	0	0	0	0	5
Weed-free		100	100	100	100	100	100	100	100	100	100	100	100	150
	LSD (0.10)	2.3	1.6	2.0	4.0	ns	1.4	4.4	5.3	ns	ns	7.6	4.6	9.1

^a AE F130360 = Option 35 DF; Atra or atrazine = Aatrex 4F; Fict or flufenacet = Define 4SC; Fict¹ or flufenacet = Define 60DF; Gluf or glufosinate = Liberty 1.67L; isoxaflutole = Balance Pro 4SC; MSO = methylated seed oil; NIS = nonionic surfactant; 28%N = an aqueous solution of urea and ammonium nitrate; AMS = spray grade ammonium sulfate.

^b Yield adjusted to 15.5% moisture.