

Weed control in glufosinate-resistant corn. Waltz, Aaron L., Alex R. Martin, and Kevin T. Horky. A field study was conducted to evaluate PRE, sequential PRE/POST, and postemergent weed control in conventionally-tilled, glufosinate-resistant field corn. A randomized complete block design with three replications per treatment was utilized. The study was conducted on a Colo silt loam with 2.4% organic matter and a pH of 6.9. Seedbed preparation consisted of disking one week prior to planting and one field cultivation the day of planting. Individual plots consisted of six 30-inch rows, each 30 feet long. 'Pioneer 33G28LL' corn was planted May 22 at a population of 20,600 seeds/acre. Treatments were applied with a tractor-mounted sprayer traveling 3.0 mph. Application, crop, weed, and environmental data are presented below:

Date	May 22	June 9	June 17
Treatment	PRE	EPOST	POST
Sprayer			
gpa	15	15	15
psi	30	30	30
Temperature (°F)			
Air	69	75	92
Soil (4 inch)	66	63	84
Soil Moisture	Adequate	Adequate	Adequate
Wind (mph)	3	10	4
Sky (% cloudy)	100	10	20
Relative Humidity (%)	46	48	34
Precip. after appl.			
Week 1 (inch)	0.04	2.99	2.25
Week 2 (inch)	0.8	2.25	0.36
Corn			
Leaf no.	--	1-2	4
Height (inch)	--	3	11
Common sunflower			
Leaf no.	--	2	6
Height (inch)	--	1-2	5
Infestation (m ²)	--	2	5
Velvetleaf			
Leaf no.	--	2	4
Height (inch)	--	2	3
Infestation (m ²)	--	50	40
Pigweed species			
Leaf no.	--	7-8	many
Height (inch)	--	1	2
Infestation (m ²)	--	20	20
Annual grasses			
Leaf no.	--	2-3	4-5
Height (inch)	--	0.5-1.5	2-6
Infestation (m ²)	--	10	5

Summary comments: Precipitation was good until mid July, then conditions were dry. Pigweed species include mostly Palmer amaranth, with little common waterhemp. Grass species include green and giant foxtail with little fall panicum and large crabgrass. PRE only treatments resulted in inadequate common sunflower control, while the EPOST single-pass treatment gave generally poor weed control. The sequential treatments resulted in the best weed control. Results of the study are summarized in the following table (Dept. of Agronomy and Horticulture, University of Nebraska-Lincoln).

Table. Weed control in glufosinate-resistant corn. (Waltz, Martin, and Horky)

Treatment	Application		Injury 6/17 (%)	----HELAN----			----ABUTH----			----AMASS ^a ----			----GGGAN ^b ----		
	Rate (lb/A)	Timing		7/7	7/21	8/17	7/7	7/21	8/17	7/7	7/21	8/17	7/7	7/21	8/17
Isoxaflutole/ glufosinate+	0.05 0.42	PRE/ POST	0	98	100	100	97	95	97	98	100	100	92	90	90
atrazine+	0.5														
AMS ^c	3														
Isoxaflutole/ foramsulfuron+	0.05 0.033	PRE/ POST	0	97	100	97	92	97	88	77	70	63	93	90	80
MSO ^d +	1.5 pt														
28% ^e	1.5 qt														
Isoxaflutole+	0.07	PRE	10	73	70	73	87	90	87	67	63	47	90	97	93
flufenacet	0.45														
Isoxaflutole+	0.09	PRE	10	80	83	63	92	88	88	85	82	80	88	90	93
atrazine	1														
Isoxaflutole+	0.07	PRE	3	77	77	57	82	82	77	92	95	93	92	92	93
flufenacet+	0.45														
atrazine	1														
Flufenacet/ glufosinate+	0.45 0.42	PRE/ POST	0	98	100	97	83	87	82	98	97	96	97	97	99
atrazine+	0.5														
AMS	3														
Flufenacet/ foramsulfuron+	0.45 0.033	PRE/ POST	0	100	100	97	83	82	82	97	98	98	100	99	95
dicamba&	0.13														
diflufenzopyr+	0.05														
MSO+	1.5 pt														
28%	1.5 qt														
Glufosinate+	0.42	EPOST	0	93	97	80	63	63	53	80	73	68	57	37	43
atrazine+	0.5														
AMS	3														
Flufenacet/ bromoxynil&	0.81 0.25	PRE/ POST	0	100	100	100	78	70	70	92	92	88	80	85	77
atrazine	0.5														
Isoxaflutole/ bromoxynil&	0.07 0.25	PRE/ POST	0	100	100	100	98	100	99	90	93	94	78	77	83
atrazine	0.07														
Weedy check			0	0	0	0	0	0	0	0	0	0	0	0	0
LSD (p=0.05)			5	17	18	27	10	8	14	6	9	20	11	22	17

^aAMASS = mostly Palmer amaranth with little common waterhemp

^bGGGAN = green and giant foxtail with little fall panicum and large crabgrass

^cAMS = 'N-Pa-K' by Agrilience

^dMSO = 'Destiny' by Agrilience

^e28% = 'Class' by Agrilience