

Weed control in conventional 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 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. 'DeKalb DKC58-78' 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	70	75	88
Soil (4 inch)	66	63	91
Soil Moisture	Adequate	Adequate	Adequate
Wind (mph)	7	10	8
Sky (% cloudy)	90	10	20
Relative Humidity (%)	40	48	37
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	4
Infestation (m ²)	--	2	1
Velvetleaf			
Leaf no.	--	2	4
Height (inch)	--	2	3
Infestation (m ²)	--	50	30
Pigweed species			
Leaf no.	--	7-8	many
Height (inch)	--	1	4-6
Infestation (m ²)	--	20	50
Annual grasses			
Leaf no.	--	2-3	4-5
Height (inch)	--	0.5-1.5	2-4
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 typically resulted in poor velvetleaf control. Generally, the POST and 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 conventional corn. (Waltz, Martin, and Horky)

Treatment	Application		Injury 6/17 (%)	----HELAN----			----ABUTH----			----AMASS ^a ----			----GGGAN ^b ----		
	Rate	Timing		6/17	7/7	7/21	6/17	7/7	7/21	6/17	7/7	7/21	6/17	7/7	7/21
	(lb/A)			-----(% control)-----											
S-metolachlor&CGA-154281& atrazine& mesotrione	1.68 0.63 0.17	PRE	5	83	67	87	95	93	99	98	98	97	93	77	87
S-metolachlor&CGA-154281& atrazine+ flumetsulam& clopyralid	1.29 1.03 0.035 0.09	PRE	0	90	90	97	47	27	57	98	92	95	87	78	87
S-metolachlor&CGA-154281& atrazine+ isoxaflutole	1.29 1.03 0.05	PRE	2	90	57	92	83	70	78	100	97	100	97	90	95
Isoxaflutole& flufenacet	0.08 0.36	PRE	2	73	47	73	72	73	83	95	80	78	97	90	97
S-metolachlor&CGA-154281& atrazine/ mesotrione+ atrazine+ COC ^c + 28% ^d	1.26 1.63 0.09 0.25 1% v/v 2.5% v/v	PRE/ POST	0	90	100	100	50	100	99	97	100	100	95	82	90
S-metolachlor&CGA-154281& atrazine/ primisulfuron& dicamba+ NIS ^e + AMS ^f	1.26 1.63 0.023 0.13 0.25% v/v 2.0	PRE/ POST	0	93	100	100	60	92	95	100	97	98	92	90	97
Acetochlor& atrazine/ flumetsulam& clopyralid+ NIS+ 28%	1.95 1.46 0.035 0.09 0.25% v/v 2.5% v/v	PRE/ POST	0	100	100	100	60	90	93	100	98	100	98	90	92
Dimethenamid-P& atrazine/ dicamba& diflufenzopyr+ NIS+ 28%	0.85 1.65 0.09 0.04 0.25% v/v 2.5% v/v	PRE/ POST	0	87	93	100	60	78	78	100	100	100	92	92	93
S-metolachlor&CGA-154281& atrazine+ mesotrione+ NIS	1.29 1.03 0.09 0.25% v/v	EPOST	2	100	100	100	100	95	95	100	100	100	93	77	94
Mesotrione+ nicosulfuron& rimsulfuron+ atrazine+ COC+ 28%	0.09 0.023 0.012 0.25 1% v/v 2.5% v/v	POST	0	.	100	100	.	100	99	.	98	100	.	98	99
Acetochlor& atrazine+ flumetsulam& clopyralid	1.8 1.2 0.035 0.09	PRE	0	95	83	98	50	33	40	98	97	100	95	83	91

(continued)

Table. Weed control in conventional corn, continued. (Waltz, Martin, and Horky)

Treatment	Application		Injury 6/17 (%)	----HELAN----			----ABUTH----			----AMASS ^a ----			----GGGAN ^b ----		
	Rate (lb/A)	Timing		6/17	7/7	7/21	6/17	7/7	7/21	6/17	7/7	7/21	6/17	7/7	7/21
				-----(% control)-----											
Acetochlor& atrazine+	1.99 1.49	PRE	0	100	100	100	53	40	40	100	100	100	93	85	99
flumetsulam& clopyralid	0.035 0.09														
Acetochlor&dichlormid/ flumetsulam& clopyralid+	2.0 0.035 0.09	PRE/ POST	0	80	100	100	40	98	98	98	100	100	100	93	94
mesotrione+	0.02														
atrazine+	0.25														
COC+	1% v/v														
28%	2.5% v/v														
Acetochlor& atrazine/ flumetsulam& clopyralid+	1.8 1.2 0.035 0.09	PRE/ POST	0	90	100	100	50	92	94	97	98	100	97	93	98
atrazine+	0.75														
COC+	1% v/v														
28%	2.5% v/v														
Flufenacet ^g	0.68	PRE	0	83	0	83	0	0	47	70	50	53	98	92	98
Flufenacet ^h	0.67	PRE	0	60	0	57	7	0	50	70	53	60	92	93	97
Flufenacet ^g / atrazine+	0.68 1.0	PRE/ POST	0	83	63	77	10	43	57	82	78	92	95	92	97
COC+	1% v/v														
28%	2.5% v/v														
Flufenacet ^h / atrazine+	0.67 1.0	PRE/ POST	0	90	73	100	20	43	57	82	80	85	95	72	98
COC+	1% v/v														
28%	2.5% v/v														
Weedy Check			0	0	0	0	0	0	0	0	0	0	0	0	0
LSD (p=0.05)			2	25	21	25	17	12	14	12	10	12	7	16	7

^aAMASS = mostly Palmer amaranth with little common waterhemp^bGGGAN = green and giant foxtail with little fall panicum and large crabgrass^cCOC = 'Prime Oil' by Agrilience^d28% = 'Class' by Agrilience^eNIS = 'Preference' by Agrilience^fAMS = 'N-Pa-K' by Agrilience^gFlufenacet = 'Define 60 WG' by Bayer^hFlufenacet = 'Define 4 SC' by Bayer