

Carfentrazone and glyphosate applied postemergence for weed control in corn, Ames, IA, 2004.

Owen, Micheal D.K., James F. Lux, and Damian D. Franzenburg. The purpose of this study was to evaluate corn injury and weed control from postemergence applied carfentrazone and glyphosate. The soil was a Canisteo, Nicollet, Clarion clay loam with a pH 7.3 and 3.7% organic matter. The experimental design was a randomized complete block with three replications and plots were 10 by 25 ft. The 2003 crop was soybean. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 15% at planting. "Dekalb hybrid DKC60-17" corn was planted 1.5 inches deep on May 6, at 27,700 seeds/A in 30-inch rows. Postemergence (POST) treatments were applied on June 11 at 20 gpa and 30 psi using flat fan nozzles. Conditions on June 11 were: air temperature 29 C, soil temperature at the 4-inch depth 23 C, 5 mph wind, 80% cloud cover, 85% relative humidity. Weed species, average size, and number per ft<sup>2</sup> in the untreated control included: giant foxtail one to four leaves, two tillers, 0.5 to 6 inches tall, zero to one plant; velvetleaf cotyledon to seven leaves, 0.5 to 8 inches tall, zero to five plants; common waterhemp numerous leaves, 0.5 to 10 inches tall, zero to ten plants; common lambsquarters numerous leaves, 0.5 to 5 inches tall, zero to one plant; common cocklebur six to ten leaves, 2 to 12 inches tall, zero to one plant. May rainfall included: 0.41, 0.03, 0.16, 0.43, 0.12, 0.44, 3.18, 0.21, 1.19, 0.12, 0.45, 0.35, and 0.03 inches on May 8, 9, 12, 13, 14, 17, 22, 23, 24, 28, 29, 30, and 31, respectively. Total rainfall for May was 7.12 inches. June rainfall included: 0.01, 0.25, 0.27, 0.41, 0.33, 0.7, 0.92, 0.21, 0.05, and 0.01 inches on June 6, 10, 11, 12, 14, 16, 21, 24, 27, and 28, respectively. Total rainfall for June was 3.16 inches. July rainfall included: 1.51 inches and 0.18 inches from July 1 through 15 and 16 through 31, respectively. Total rainfall for July was 1.69 inches. Rainfall total for August was 4.54 inches.

No significant differences in corn stand between treatments were observed on July 23. Ten percent corn injury was observed on June 14 with POST applied carfentrazone plus glyphosate treatments, three days after application. POST glyphosate applied alone resulted in no corn injury. Five percent corn injury persisted for carfentrazone plus glyphosate treatments through the remaining observation dates.

Giant foxtail control with the treatments was excellent on all observation dates. There were no significant differences in giant foxtail control between them. Velvetleaf control was good to excellent with all treatments. Carfentrazone plus glyphosate provided significantly better velvetleaf control on June 18, seven days after application, compared to glyphosate applied alone. On June 18, common waterhemp, common lambsquarters and common cocklebur control was good to excellent with all treatments. No significant differences were determined between the treatments for these species.

Velvetleaf, common waterhemp, common lambsquarters, and common cocklebur control remained good to excellent with the treatments when observed on June 26 and July 2. Differences in control between the treatments were not significant for any of the species on these dates. (Dept. of Agronomy, Iowa State University, Ames).

Table 1. Carfentrazone and glyphosate applied postemergence for weed control in corn, Ames, IA, 2004  
IA, 2004 (Owen, Lux, and Franzenburg).

Treatment	Rate (LB/A)	Appl. time	Corn <sup>a</sup> stand	Injury		SETFA	ABUTH	AMATA	CHEAL	XANST
				6/14/04	6/18/04	6/18/04	6/18/04	6/18/04	6/18/04	6/18/04
				----- (%) -----		----- (% weed control) -----				
Untreated	-		26	0	0	0	0	0	0	0
Carfentrazone+	0.0078+	POST	27	10	5	99	99	93	93	96
glyphosate <sup>b</sup> +AMS <sup>c</sup>	0.56+17.0	POST								
Carfentrazone+	0.0078+	POST	25	10	5	99	99	93	96	96
glyphosate+AMS	0.77+17.0	POST								
Glyphosate+AMS	0.56+17.0	POST	25	0	0	98	88	93	93	99
Glyphosate+AMS	0.77+17.0	POST	25	0	0	99	92	95	95	98
LSD (P=0.05)			2	0	0	2	3	5	4	4

<sup>a</sup> Corn stand per 17.42 row feet on July 23..

<sup>b</sup> Glyphosate rate in lb ae/A.

<sup>c</sup> AMS = Ammonium sulfate rate in lb/100 gal.

Table 2. Carfentrazone and glyphosate applied postemergence for weed control in corn, Ames, IA, 2004  
IA, 2004 (Owen, Lux, and Franzenburg).

Treatment	Rate (LB/A)	Appl. time	Injury 6/26/04 -- (%) --	SETFA 6/26/04 -----	ABUTH 6/26/04 -----	AMATA 6/26/04 -----	CHEAL 6/26/04 -----	XANST 6/26/04 -----
				(% weed control)				
Untreated	-		0	0	0	0	0	0
Carfentrazone+ glyphosate <sup>a</sup> +AMS <sup>b</sup>	0.0078+ 0.56+17.0	POST POST	5	99	99	93	95	96
Carfentrazone+ glyphosate+AMS	0.0078+ 0.77+17.0	POST POST	5	99	99	93	96	98
Glyphosate+AMS	0.56+17.0	POST	0	99	98	95	95	99
Glyphosate+AMS	0.77+17.0	POST	0	99	95	96	95	98
LSD (P=0.05)			0	0	5	4	2	3

<sup>a</sup> Glyphosate rate in lb ae/A.

<sup>b</sup> AMS = Ammonium sulfate rate in lb/100 gal.

Table 3. Carfentrazone and glyphosate applied postemergence for weed control in corn, Ames, IA, 2004  
IA, 2004 (Owen, Lux, and Franzenburg).

Treatment	Rate (LB/A)	Appl. time	Injury 7/2/04 -- (%) --	SETFA 7/2/04 -----	ABUTH 7/2/04 -----	AMATA 7/2/04 -----	CHEAL 7/2/04 -----	XANST 7/2/04 -----
				(% weed control)				
Untreated	-		0	0	0	0	0	0
Carfentrazone+ glyphosate <sup>a</sup> +AMS <sup>b</sup>	0.0078+ 0.56+17.0	POST POST	5	99	96	93	93	96
Carfentrazone+ glyphosate+AMS	0.0078+ 0.77+17.0	POST POST	5	99	96	93	96	99
Glyphosate+AMS	0.56+17.0	POST	0	99	93	95	95	99
Glyphosate+AMS	0.77+17.0	POST	0	99	93	96	96	99
LSD (P=0.05)			0	0	4	4	4	2

<sup>a</sup> Glyphosate rate in lb ae/A.

<sup>b</sup> AMS = Ammonium sulfate rate in lb/100 gal.