

Shattercane control in corn with preemergence applications of KIH-485, s-metolachlor & benoxacor, and acetochlor & MON 4660, Ames, IA, 2005. Owen, Micheal D.K., James F. Lux, and Damian D. Franzenburg. The purpose of this study was to evaluate preemergence applications of KIH-485, s-metolachlor & benoxacor, and acetochlor & MON 4660 for shattercane and broadleaf weed control in corn. The soil was a Clarion, Webster, Nicollet clay loam with a pH 5.9 and 3.5% organic matter. The experimental design was a randomized complete block with three replications and plots were 10 by 25 ft. The 2004 crop was soybean. Fertilization included 125/A actual N applied as urea. Tillage included a spring field cultivation. Crop residue on the soil surface was 10% at planting. "Garst hybrid 8575" corn was planted 1.5 inches deep on April 18, at 30,200 seeds/A in 30-inch rows. Preemergence (PRE) treatments were applied April 21 at 20 gpa and 30 psi using flat fan nozzles. Conditions on April 21 were: air temperature 14 C, soil temperature at the 4-inch depth 13 C, 7 mph wind, 100% cloud cover, 57% relative humidity. Average number of weed species per ft<sup>2</sup> occurring in the untreated control included: shattercane, three to ten plants; velvetleaf, zero to one plant; common lambsquarters, zero to one plant. April rainfall included: 1.65, 0.07, 0.1, 0.15, 0.16, and 0.2 inches on April 11, 12, 16, 20, 21, and 22, respectively. Total rainfall for April was 2.32 inches. May rainfall included: 0.66, 0.41, 0.19, 0.33, and 0.25 inches on May 12, 18, 21, 25, and 29, respectively. Total rainfall for May was 1.83 inches. June rainfall included: 0.94, 0.5, 0.33, 0.33, 0.32, 0.2, 0.29, 0.43, 0.51, 0.89, and 0.25 inches on June 4, 8, 10, 11, 12, 20, 24, 25, 26, 27, and 29, respectively. Total rainfall for June was 4.98 inches. July rainfall included: 0 inches and 3.28 inches from July 1 through 15 and 16 through 31, respectively. Total rainfall for July was 3.28 inches. Rainfall total for August was 2.86 inches.

Differences in corn stand between treatments were not significant. No corn injury was observed on any observation dates from the treatments. Shattercane control with KIH-485 was rate responsive. Although poor control was observed on May 16, twenty-five days after application, treatment differences were apparent. KIH-485 activity increased with time and when observed on May 30 and June 30, control was fair to good. The lowest rate of 0.22 lb/A provided 78% control on June 30, while the highest rate of 0.31 lb/A provided 88% control. S-metolachlor & benoxacor and acetochlor & MON 4660 failed to provide acceptable shattercane control on any observation date. Velvetleaf control with KIH-485 was also rate responsive. Control ranged from 77 to 93%; the middle and highest KIH-485 rates providing fair to good control on each observation date. S-metolachlor & benoxacor and acetochlor & MON 4660 demonstrated little overall activity on velvetleaf. Common lambsquarters control was good to excellent with all treatments, except s-metolachlor & benoxacor, and did not respond to higher KIH-485 rates. (Dept. of Agronomy, Iowa State University, Ames).

Table. Shattercane control in corn with preemergence applications of KIH-485, s-metolachlor & benoxacor, and acetochlor & MON 4660, Ames, IA, 2005 (Owen, Lux, Franzenburg).

Treatment	Appl. Rate (lb/A)	Corn <sup>a</sup> stand time	Injury 5/16/05 - (%) -	SORVU 5/16/05 ----- (% weed control) -----	ABUTH 5/16/05	CHEAL 5/16/05	Injury 5/30/05 - (%) -	SORVU 5/30/05 ----- (% weed control) -----	ABUTH 5/30/05	CHEAL 5/30/05	Injury 6/30/05 - (%) -	SORVU 6/30/05 ----- (% weed control) -----	ABUTH 6/30/05	CHEAL 6/30/05	
Untreated	-	-	28	0	0	0	0	0	0	0	0	0	0	0	
KIH-485	0.22	PRE	30	0	30	77	96	0	83	87	93	0	78	82	83
KIH-485	0.27	PRE	29	0	45	85	96	0	87	88	93	0	83	85	87
KIH-485	0.31	PRE	29	0	48	90	96	0	88	93	93	0	88	90	87
S-metolachlor&benoxacor	1.91	PRE	29	0	37	28	58	0	45	28	65	0	35	5	65
Acetochlor&MON 4660	1.99	PRE	28	0	47	30	92	0	55	28	92	0	38	8	80
LSD (P=0.05)			2	0	24	16	13	0	13	6	10	0	10	8	11

<sup>a</sup> Corn stand per 17.5 row feet on August 8.