

KIH-485, s-metolachlor & benoxacor, KIH-485 & atrazine, and s-metolachlor & atrazine & benoxacor for shattercane 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 preemergence applied KIH-485, s-metolachlor & benoxacor, KIH-485 & atrazine, and s-metolachlor & atrazine & benoxacor for crop phytotoxicity and shattercane control in corn. The soil was a Clarion, Nicollet, Webster 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 2003 crop was soybean. Tillage included a spring field cultivation. Fertilization included 124 lb/A actual N applied as urea. Crop residue on the soil surface was 25% at planting. "Garst hybrid 8545" corn was planted 1.5 inches deep on April 15, at 30,200 seeds/A in 30-inch rows. Preemergence (PRE) treatments were applied on April 16 at 20 gpa and 30 psi using flat fan nozzles. Conditions on April 16 were: air temperature 25 C, soil temperature at the 4-inch depth 14 C, 8 mph wind, 90% cloud cover, 39% relative humidity. Weed species occurring in the untreated control included: shattercane, heavy pressure; common lambsquarters, moderate pressure; Pennsylvania smartweed, light pressure. April rainfall included: 0.35, 0.56, 0.65, 0.19 and 0.13 inches on April 18, 20, 24, 25, and 30, respectively. Total rainfall for April was 1.89 inches. 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 corn injury was observed at any of the observation dates. A significant difference in corn stand was observed on August 15 between the 3.82 lb/A rate of s-metolachlor & benoxacor and several other treatments. This difference was caused by variable stand establishment and not from the herbicide treatment. On May 10, KIH-485 applied at 0.446 lb/A provided significantly higher shattercane control (78%) than the lower two application rates of KIH-485, s-metolachlor & benoxacor applied at 1.9 lb/A. and s-metolachlor & atrazine & benoxacor. Both KIH-485 & atrazine treatments and the high rate of s-metolachlor & benoxacor ranged from 68 to 70% control of shattercane. All treatments provided excellent common lambsquarters control on May 10. Only KIH-485 & atrazine and metolachlor & atrazine & benoxacor provided excellent control of Pennsylvania smartweed.

Shattercane control observed on May 25 was very similar to that of May 10. Common lambsquarters control dropped to 87% for the low rate of s-metolachlor & benoxacor. Only KIH-485 & atrazine provided acceptable control of Pennsylvania smartweed. Shattercane control on June 29 improved for all KIH-485 treatments. All other treatments demonstrated reduced control or remained the same. Only KIH-485 & atrazine provided acceptable control of Pennsylvania smartweed at 92%. (Dept. of Agronomy, Iowa State University, Ames).

Table 1. KIH-485, S-metolachlor & benoxacor, KIH-485 & atrazine, and S-metolachlor & atrazine & benoxacor for shattercane control in corn, Ames, IA, 2004 (Owen, Lux, and Franzenburg).

Treatment	Rate (lb/A)	Appl. time	Corn <sup>a</sup> stand	Injury SORVU CHEAL POLPY			
				5/10/04 -- (%)	5/10/04 ---- (% weed control)	5/10/04	5/10/04
Untreated	-	-	26	0	0	0	0
KIH-485	0.223	PRE	27	0	43	98	38
KIH-485	0.268	PRE	26	0	53	99	40
KIH-485	0.446	PRE	26	0	78	99	65
S-metolachlor&benoxacor	1.91	PRE	25	0	45	93	38
S-metolachlor&benoxacor	3.82	PRE	24	0	68	99	50
KIH-485&atrazine	0.223&1.43	PRE	28	0	68	99	94
KIH-485&atrazine	0.223&1.96	PRE	26	0	70	99	99
S-metolachlor&atrazine&benoxacor	1.56&2.0	PRE	28	0	55	99	93
LSD (P=0.05)			3	0	12	5	18

<sup>a</sup> Corn stand per 17.42 row feet on August 15.

Table 2. KIH-485, S-metolachlor &amp; benoxacor, KIH-485 &amp; atrazine, and S-metolachlor &amp; atrazine &amp; benoxacor for shattercane control in corn, Ames, IA, 2004 (Owen, Lux, and Franzenburg).

Treatment	Rate (lb/A)	Appl. time	Injury 5/25/04 -- (%) --	SORVU CHEAL POLPY		
				5/25/04 ---- (% weed control) ----	5/25/04	5/25/04
Untreated	-	-	0	0	0	0
KIH-485	0.223	PRE	0	47	98	40
KIH-485	0.268	PRE	0	55	95	38
KIH-485	0.446	PRE	0	80	99	53
S-metolachlor&benoxacor	1.91	PRE	0	40	87	35
S-metolachlor&benoxacor	3.82	PRE	0	67	96	48
KIH-485&atrazine	0.223&1.43	PRE	0	68	99	88
KIH-485&atrazine	0.223&1.96	PRE	0	70	99	92
S-metolachlor&atrazine&benoxacor	1.56&2.0	PRE	0	53	96	68
LSD (P=0.05)			0	14	5	19

Table 3. KIH-485, S-metolachlor &amp; benoxacor, KIH-485 &amp; atrazine, and S-metolachlor &amp; atrazine &amp; benoxacor for shattercane control in corn, Ames, IA, 2004 (Owen, Lux, and Franzenburg).

Treatment	Rate (lb/A)	Appl. time	SORVU CHEAL POLPY		
			6/29/04 ---- (% weed control) ----	6/29/04	6/29/04
Untreated	-	-	0	0	0
KIH-485	0.223	PRE	58	98	42
KIH-485	0.268	PRE	70	98	38
KIH-485	0.446	PRE	87	99	55
S-metolachlor&benoxacor	1.91	PRE	30	87	35
S-metolachlor&benoxacor	3.82	PRE	48	96	45
KIH-485&atrazine	0.223&1.43	PRE	67	99	81
KIH-485&atrazine	0.223&1.96	PRE	68	99	92
S-metolachlor&atrazine&benoxacor	1.56&2.0	PRE	43	96	68
LSD (P=0.05)			11	5	20