KIH-485, s-metolachlor & benoxacor, KIH-485 & atrazine, and s-metolachlor & atrazine & benoxacor for woolly cupgrass control in corn, Ogden, 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-metolachor & benoxacor, KIH-485 & atrazine, and s-metolachlor & atrazine & benoxacor for crop phytotoxicity and woolly cupgrass control in corn. The soil was a Canisteo, Clarion, Nicollet clay loam with a pH 6.5 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 150 lb/A actual N applied as urea. Crop residue on the soil surface was 25% at planting. "Pioneer hybrid 33R79" corn was planted 1.5 inches deep on April 28, at 30,200 seeds/A in 30-inch rows. Preemergence (PRE) treatments were applied on April 29 at 20 gpa and 30 psi using flat fan nozzles. Conditions on April 29 were: air temperature 19 C, soil temperature at the 4-inch depth 16 C, 5 mph wind, 100% cloud cover, 53% relative humidity. Weed species occurring in the untreated control included: woolly cupgrass, heavy pressure; velvetleaf, light to moderate 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.

Corn stands were variable when observed on August 6; however, no significant differences between herbicide treatments were determined. Corn injury was noted on May 19 and June 1 with the highest application rates of KIH-485 and s-metolachlor & benoxacor and several other treatments. Woolly cupgrass and velvetleaf control was rate responsive to KIH-485. Generally, control of these species was poor to good with KIH-485. Twenty days after application on May 19, the 0.223 lb/A and 0.268 lb/A rates of KIH-485 provided 53 and 65% woolly cupgrass control, respectively. Velvetleaf control was 50 and 62%. Control of both species improved with these treatment rates when observed on June 1 and 25, thirty-three and fifty-seven days after application. On June 25, KIH-485 provided 77 and 87% woolly cupgrass control. Velvetleaf control was 70 and 88% on June 25.

Woolly cupgrass and velvetleaf control with s-metolachlor & benoxacor was also rate responsive. Generally, woolly cupgrass control was poor to fair and ranged from 40 to 65% on June 19, and 43 to 73% on June 25. Velvetleaf control was unacceptable with s-metolachlor & benoxacor on all observation dates.

KIH-485 & atrazine treatments generally provided a similar level of woolly cupgrass control as KIH-485 applied alone, but demonstrated a higher level of velvetleaf control. S-metolachlor & atrazine & benoxacor behaved similarly to the low rate s-metolachlor & benoxacor applied alone, but resulted in much better velvetleaf control. (Dept. of Agronomy, Iowa State University, Ames).

Table 1. KIH-485, s-metolachlor & benoxacor, KIH-485 & atrazine, and s-metolachlor & atrazine & benoxacor for woolly cupgrass control in corn, Ogden, IA, 2004 (Owen, Lux, and Franzenburg).

Treatment	Rate	Appl. time	Corn[a] stand	Injury 5/19/04	ERBVI 5/19/04	ABUTH 5/19/04
	(lb/A)			-- (%) --	---- (% weed control) ----	
Untreated	-	-	26	0	0	0
KIH-485	0.223	PRE	29	0	53	50
KIH-485	0.268	PRE	28	0	65	62
KIH-485	0.446	PRE	28	5	83	75
S-metolachlor&benoxacor	1.91	PRE	27	0	40	10
S-metolachlor&benoxacor	3.82	PRE	28	2	65	18
KIH-485&atrazine	0.223&1.43	PRE	27	0	68	85
KIH-485&atrazine	0.223&1.96	PRE	28	2	68	87
S-metolachlor&atrazine&benoxacor	1.56&2.0	PRE	27	0	52	50
LSD (P=0.05)			3	2	10	14

[a] Corn stand per 17.42 row feet on August 6.

Table 2. KIH-485, s-metolachlor & benoxacor, KIH-485 & atrazine, and s-metolachlor & atrazine & benoxacor for woolly cupgrass control in corn, Ogden, IA, 2004 (Owen, Lux, and Franzenburg).

Treatment	Rate	Appl. time	Injury 6/1/04	Injury 6/25/04	ERBVI 6/1/04	ABUTH 6/1/04	ERBVI 6/25/04	ABUTH 6/25/04
	(lb/A)		------- (%) -------		--------- (% weed control) ---------			
Untreated	-	-	0	0	0	0	0	0
KIH-485	0.223	PRE	0	0	67	65	77	70
KIH-485	0.268	PRE	2	0	78	88	87	88
KIH-485	0.446	PRE	13	2	85	88	90	90
S-metolachlor&benoxacor	1.91	PRE	0	0	43	7	43	7
S-metolachlor&benoxacor	3.82	PRE	2	0	72	17	73	15
KIH-485&atrazine	0.223&1.43	PRE	2	0	78	92	85	92
KIH-485&atrazine	0.223&1.96	PRE	0	0	75	90	88	90
S-metolachlor&atrazine&benoxacor	1.56&2.0	PRE	0	0	55	70	52	52
LSD (P=0.05)			5	2	13	10	11	12