

Preemergence applications of KIH-485, s-metolachlor & benoxacor, and acetochlor & MON 4660 for woolly cupgrass control in corn, Ogden, 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 woolly cupgrass and broadleaf weed control in corn. The soil was a Canesteo, Clarion, Nicollet silty clay loam with a pH 5.9 and 4.8% organic matter. The experimental design was a randomized complete block with three replications and plots were 10 by 25 ft. The 2004 crop was corn. Fertilization included 200/A actual N applied as urea. Tillage included a spring field cultivation. Crop residue on the soil surface was 75 to 85% at planting. "Garst hybrid 8575" corn was planted 1.5 inches deep on April 27, at 30,200 seeds/A in 30-inch rows. Preemergence (PRE) treatments were applied April 28 at 20 gpa and 30 psi using flat fan nozzles. Conditions on April 28 were: air temperature 12 C, soil temperature at the 4-inch depth 11 C, 5 mph wind, 40% cloud cover, 52% relative humidity. Average number of weed species per ft² occurring in the untreated control included: woolly cupgrass, three to twenty plants; velvetleaf, less than one plant; common lambsquarters, zero to five plants. 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.

Corn stand establishment was difficult due to poor seed bed conditions and resulted in considerable variability between treatments. Control of woolly cupgrass, velvetleaf and common lambsquarters with KIH-485 was rate responsive. When observed on May 20, twenty-two days after application, KIH-485 rates of 0.223, 0.267, and 0.312 lb/A, provided 62, 82, and 85% woolly cupgrass control, respectively. Velvetleaf control on May 20 ranged from 80 to 93% and common lambsquarters from 93 to 96% with KIH-485 treatments. Similar trends were observed on June 3, 21, and July 15. Overall, KIH-485 treatment rates of 0.267 and 0.312 lb/A provided fair to good woolly cupgrass, velvetleaf and common lambsquarters control.

Woolly cupgrass control with s-metolachlor & benoxacor and acetochlor & MON 4660 was 70 and 83%, respectively, on May 20. Observations on June 3, 21, and July 15 demonstrated a reduction in woolly cupgrass control with both treatments. By June 21 and July 15, woolly cupgrass control was poor with s-metolachlor & benoxacor and acetochlor & MON 4660. Velvetleaf control with s-metolachlor & benoxacor and acetochlor & MON 4660 was not acceptable on any observation date. Common lambsquarters control was good with s-metolachlor & benoxacor and acetochlor & MON 4660 when observed on May 20 and June 3. However, by June 21 and July 15, poor to fair common lambsquarters control was observed. (Dept. of Agronomy, Iowa State University, Ames).

Table. Preemergence applications of KIH-485, s-metolachlor & benoxacor, and acetochlor & MON 4660 for woolly cupgrass control in corn, Ogden, IA, 2005 (Owen, Lux, Franzenburg).

Treatment	Rate (lb/A)	Appl. time	Corn ^a stand	Injury 5/20/05 - (%) -	ERBVI 5/20/05 ---- (% weed control) ----	ABUTH 5/20/05	CHEAL 5/20/05	Injury 6/3/05 - (%) -	ERBVI 6/3/05 ---- (% weed control) ----	ABUTH 6/3/05	CHEAL 6/3/05	Injury 6/21/05 - (%) -	ERBVI 6/21/05 ----- (% weed control) -----	ABUTH 6/21/05	CHEAL 6/21/05	ERBVI 7/15/05	ABUTH 7/15/05	CHEAL 7/15/05
Untreated	-	-	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KIH-485	0.223	PRE	29	0	62	80	93	0	65	82	93	0	67	78	75	62	78	75
KIH-485	0.267	PRE	27	2	82	83	96	3	83	86	95	2	83	83	87	82	85	83
KIH-485	0.312	PRE	26	3	85	93	96	3	87	92	96	3	87	83	88	78	82	83
S-metolachlor&benoxacor	1.91	PRE	28	0	70	27	82	0	67	25	80	0	57	22	58	47	18	55
Acetochlor&MON 4660	1.99	PRE	28	0	83	33	90	0	77	33	90	0	63	30	65	52	27	63
LSD (P=0.05)			4	5	12	14	12	6	12	14	11	5	13	12	18	14	13	17

^a Corn stand per 17.5 row feet on August 2.