

Preemergence applications of KIH-485, s-metolachlor & benoxacor, and acetochlor & MON 4660 in corn, Ames, IA, 2005. 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, and acetochlor & MON 4660 for crop phytotoxicity and weed efficacy in corn. The soil was a Clarion, Webster, Nicollet clay loam with a pH 7.3 and 6.6% 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 lb/A actual N applied as urea. Tillage included a spring field cultivation. Crop residue on the soil surface was 20% at planting. "Dekalb hybrid DKC 53-34" corn was planted 1.5 inches deep on May 9, at 30,200 seeds/A in 30-inch rows. Preemergence (PRE) treatments were applied May 10 at 20 gpa and 30 psi using flat fan nozzles. Conditions on May 10 were: air temperature 23 C, soil temperature at the 4-inch depth 20 C, 3 mph wind, 20% cloud cover, 48% relative humidity. Average number of weed species per ft² occurring in the untreated control included: giant foxtail, zero to ten plants; velvetleaf, zero to one plant; common waterhemp, zero to one plant; common lambsquarters, zero to three 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.

There were no significant corn stand differences between treatments. Corn injury did not exceed 3% and only occurred with the acetochlor & MON 4660 treatments. All treatments provided excellent giant foxtail control when observed on May 31, June 15 and July 15. The 0.186 lb/A rate of KIH-486 demonstrated slightly less control than other treatments on June 15 and July 15; however, control never went below 90%.

KIH-485 rates of 0.267 and 0.446 lb/A are the only two treatments that provided greater than 90% velvetleaf control on May 31; however, no treatments provided that level of control on subsequent observation dates. All treatments provided nearly perfect common waterhemp control on all evaluation dates. All treatments demonstrated at least 90% common lambsquarters control on May 31. However, only the 0.267 and 0.446 lb/A rates of KIH-485 provided more than 90% control of common lambsquarters on June 15 and July 15. (Dept. of Agronomy, Iowa State University, Ames).

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

Treatment	Rate	Appl. time	Corn ^a stand	Injury 5/31/05	SETFA 5/31/05	ABUTH 5/31/05	AMATA 5/31/05	CHEAL 5/31/05	Injury 6/15/05	SETFA 6/15/05	ABUTH 6/15/05	AMATA 6/15/05	CHEAL 6/15/05	SETFA 7/15/05	ABUTH 7/15/05	AMATA 7/15/05	CHEAL 7/15/05
	(lb/A)			- (%) -	----- (% weed control) -----												
Untreated	-	-	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KIH-485	0.186	PRE	31	0	96	80	99	95	0	90	45	99	70	90	43	99	67
KIH-485	0.223	PRE	31	0	96	87	99	95	0	93	63	99	85	93	58	99	83
KIH-485	0.267	PRE	31	0	98	93	99	98	0	95	77	99	93	93	75	99	93
KIH-485	0.446	PRE	31	0	99	95	99	99	0	95	88	99	93	95	85	99	93
S-metolachlor&benoxacor	1.9	PRE	31	0	99	25	99	90	0	95	5	96	45	95	3	96	42
Acetochlor&MON 4660	1.99	PRE	32	2	99	50	99	93	0	96	27	99	75	95	27	99	72
Acetochlor&MON 4660	2.43	PRE	31	3	99	62	99	95	2	95	33	99	78	95	33	95	77
LSD (P=0.05)			4	2	2	8	0	2	2	3	20	1	10	4	20	2	11

^a Corn stand per 17.5 row feet on July 27.