

Evaluation of the performance of KIH-485 for weed control in field corn at Potsdam, MN in 2005. Behnken, Lisa M., Fritz R. Breitenbach, Kira L. Stearns, and Kristal L. Schaufler. The objective of this trial was to evaluate the performance of KIH-485 for weed control in field corn in southeastern Minnesota. The research site was a Port Byron silt loam containing 3.2% organic matter, soil pH of 6.7, and soil test P and K of 65 ppm and 273 ppm, respectively. The previous crop was soybean. The area was fertilized in the spring with 144 lb/A of nitrogen, 23 lb/A of phosphorus, 120 lb/A of potash, and 24 lb/A of sulfur. The field was field cultivated twice prior to planting. The corn hybrid, Pioneer 38H69, was planted on May 6, 2005 at a depth of 1.5 inches in 30-inch rows at 32,000 seeds/A. A randomized complete block design with four replications was used. Preemergence (PRE) and postemergence (POST) treatments were applied with a tractor-mounted sprayer, delivering 20 gpa at 32 psi using Turbo Tee 11002 nozzles. Evaluations of the plots were taken on May 31, June 6, June 16, and June 27. Application dates, environmental conditions, and crop and weed stages are listed below.

Date	May 6	June 7
Treatment	PRE	POST
Temperature (F)		
Air	71	92
soil	50	NA
Relative humidity (%)	35	55
Wind (mph)	8	20
Soil moisture	Dry	Adequate/wet
Cloud cover (%)	15	50
Corn		
stage	seeded	V2-V3
height (inch)	0	5.3
Common lambsquarters		
weed density (ft ²)	--	59.1
height (inch)	--	1.5
Velvetleaf		
weed density (ft ²)	--	0.4
height (inch)	--	NA
Wild proso millet		
weed density (ft ²)	--	3.0
height (inch)	--	0.6
Rainfall after application (inch)		
week 1	1.27	2.20
week 2	1.81	0.20
week 3	0.31	1.50

No crop injury response was observed from any of the treatments in this trial. KIH-485 at the 0.187 and 0.224 lb/A rates, KIH-485 + atrazine, and acetochlor & MON4660 provided statistically greater control of wild proso millet than s-metolachlor & benoxacor on the May 31 and June 16 ratings. KIH-485 at the 0.224 lb/A rate and the KIH-485 + atrazine tank mix provided statistically better control of wild proso millet than s-metolachlor & benoxacor, and acetochlor & MON4660 on the June 27 rating.

All KIH-485 treatments and acetochlor & MON4660 provided statistically superior control of common lambsquarters when compared to s-metolachlor & benoxacor on all rating dates. On the June 27 rating date, the KIH-485 + atrazine tank mix provide statistically higher common lambsquarters control than all other treatments except the postemergence treatment of dicamba.

KIH-485 and the KIH-485 + atrazine tank mix provided significantly greater control of velvetleaf than s-metolachlor & benoxacor, and acetochlor & MON4660 on all rating dates. All KIH 485 treatments and the acetochlor MON4660 treatments resulted in yields significantly higher than the s-metolachlor & benoxacor treatment. (University of Minnesota Extension Service, Regional Center, Rochester, MN)

Table. Performance of KIH-485 for weed control in field corn on May 31, June 16, and June 27 at Potsdam, MN in 2005. (Behnken, Breitenbach, Stearns, and Schaufler).

Treatment	Rate	PANMI control			CHEAL control			ABUTH control			Corn ^a yield
		5/31	6/16	6/27	5/31	6/16	6/27	5/31	6/16	6/27	
	(lb/A)	(%)			(%)			(%)			(bu/A)
Preemergence											
KIH-485	0.150	97	88	87	97	94	86	99	91	86	220
KIH-485	0.187	98	92	89	98	95	88	99	92	87	217
KIH-485	0.224	99	94	93	99	97	92	98	95	91	216
S-metolachlor &benoxacor	1.28	94	81	84	77	63	25	84	70	58	180
Acetochlor&MON4660	1.53	99	93	88	99	95	87	79	78	68	213
KIH-485 + atrazine	0.187 + 0.75	99	93	92	99	96	97	99	92	91	213
Postemergence											
Dicamba	0.375	0	0	0	0	65	95	0	75	98	154
Untreated		0	0	0	0	0	0	0	0	0	74
LSD = (P=0.10)		1	6	4	1	3	5	5	8	11	16

a. Yield adjusted to 15.5% moisture.