

Evaluation of the performance of KIH-485 for weed control in field corn at Rochester, MN in 2005.

Breitenbach, Fritz R., Lisa M. Behnken, Kira L. Stearns and Angela L. White

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 Lawler loam series containing 2.5% organic matter with a pH of 7.0 and soil test P, K, and S levels of 58 ppm, 216 ppm, and 6 ppm, respectively. The area was fertilized in the spring with 130 lb/A of nitrogen, 23 lb/A of phosphorus, 90 lb/A of potash, and 19 lb/A of sulfur. The area was also side dressed with an additional 40 lb/A of nitrogen on June 7. The previous crop was soybean. The field was disked and field cultivated once prior to planting. The corn hybrid, NK Brand N43M9 YGCB-LL, was planted on April 18, 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 17, May 26, June 15, and June 24. Application dates, environmental conditions, and crop and weed stages are listed below.

Date	April 18	May 30
Treatment	PRE	POST
Temperature (F)		
air	74	64
soil	61	42
Relative humidity (%)	41	52
Wind (mph)	16	3
Soil moisture	adequate	adequate
Cloud cover (%)	30	3
Corn		
stage	seeded	2 collar
height (inch)	--	3.5
Woolly cupgrass		
weed density (ft ²)	--	7.3
height (inch)	--	0.8
Giant ragweed		
weed density (ft ²)	--	5.4
height (inch)	--	3.5
Common lambsquarters		
weed density (ft ²)	--	6.3
height (inch)	--	1.6
Common waterhemp		
weed density (ft ²)	--	24
height (inch)	--	0.7
Rainfall after application (inch)		
week 1	1.04	0.42
week 2	0.07	1.84
week 3	0.37	0.25

CONCLUSIONS

Significantly lower woolly cupgrass control was achieved when using Dual II Magnum and KIH-485 at the 4 oz/A and 5 oz/A rate compared to Harness and KIH-485 at 6 oz/A, and the KIH-485 + AAtrex tank mix on May 17. Woolly cupgrass control significantly increased on the June 15 and June 24 ratings with KIH-485 at 6 oz/A and the KIH-485 + AAtrex treatments showing the greatest amount of control. All of the KIH-485 treatments exhibited better woolly cupgrass control than Dual II Magnum and Harness on the June 15 and June 24 rating dates.

The KIH-485 + AAtrex tank mix gave statistically better giant ragweed control than all other treatments, May 17 and 26 ratings, with the exception of KIH-485 at 6 oz/A, May 17 rating. Giant ragweed control greatly increased following Clarity applications.

All KIH-485 treatments and Harness gave excellent common lambsquarters control on the May 17 rating date. Significantly lower common lambsquarters control was recorded with the 4 oz/A rate of KIH-485 and Dual II Magnum on the May 26 rating.

Common waterhemp control was exceptional in all treatments on all rating dates. A slight reduction of control was noted for Harness on June 24. (University of Minnesota Extension Service, Regional Center, Rochester, MN).

Table. Performance of KIH-485 for weed control in field corn on May 17, May 26, June 15, and June 24 at Rochester, MN in 2005.

Treatment	Rate	Woolly cupgrass control				Giant ragweed control				Common lambsquarters control				Common waterhemp control				Corn yield ^a (bu/A)
		5/17	5/26	6/15	6/24	5/17	5/26	6/15	6/24	5/17	5/26	6/15	6/24	5/17	5/26	6/15	6/24	
Preemergence / Postemergence		(rate/A)				5/17 5/26 6/15 6/24 (%)				5/17 5/26 6/15 6/24 (%)				5/17 5/26 6/15 6/24 (%)				
KIH-485 / Clarity	4 oz / 12 oz	82	74	93	92	9	8	96	99	95	78	98	98	99	99	98	99	100
KIH-485 / Clarity	5 oz / 12 oz	88	86	96	95	16	14	97	99	98	89	98	99	99	99	99	99	92
KIH-485 / Clarity	6 oz / 12 oz	93	90	97	97	34	24	97	99	99	93	99	99	99	99	99	99	82
Dual II Magnum / Clarity	1.33 pt / 12 oz	90	91	89	85	0	0	94	99	85	71	95	97	99	99	99	97	109
Harness / Clarity	1.75 pt / 12 oz	98	93	88	84	28	9	96	99	99	98	99	96	99	99	99	94	92
KIH-485 + AAtrex / Clarity	5 oz + 0.75 qt	93	90	95	98	40	39	28	10	99	98	98	99	99	99	98	99	4
Postemergence																		
Clarity	12 oz	0	0	0	0	0	0	97	99	0	0	94	99	0	0	91	99	37
Untreated		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LSD (P=0.10)		4	3	3	1	9	6	6	1	3	6	2	1	1	1	4	1	28

a. Yield adjusted to 15.5% moisture.