

Evaluation of KIH-485 as a preemergence herbicide in corn. Monnig, Nicholas H., Jimmy D. Wait, Jiamei Li, and Kevin W. Bradley. The objective of this study was to evaluate the labeled and above-labeled rates of KIH-485 for preemergence control of annual grasses under a wide range of soil conditions. This study was also conducted to evaluate the weed control spectrum of KIH-485 beyond that of annual grasses. This study was initiated at the Bradford Research and Extension Center near Columbia, MO. The soil was a Mexico silt loam with a pH of 6.5 and 2.3% organic matter. 'Dekalb 60-19' corn was planted in 30 inch rows at a depth of 1.5 inches on April 20. Treatments were arranged in a randomized complete block design with four replications of 10 by 40 foot plots. Herbicide applications were made with a CO₂ backpack sprayer equipped with XR8002 flat fan nozzles calibrated to deliver 15 GPA at 25 PSI.

Application data are listed below:

Date	April 20
Treatment	PRE
Temperature (F)	
air	81.5
soil	64.0
Soil Moisture	damp
Wind (mph)	1
Cloud Cover (%)	50
Relative Humidity (%)	84
Precipitation after application	
week 1 (inch)	1.95
week 2 (inch)	0.25

Crop injury was minimal at both 21 and 28 days after application (DAA). All herbicide treatments provided adequate control (>82%) of giant foxtail at 21, 28, and 41 DAA. Control of Pennsylvania smartweed was >79% with all treatments at 21 and 28 DAA. However, control 41 DAA was <80% in all treatments lacking atrazine. Poor control of ivyleaf morningglory was obtained with all treatments except KIH-485 at 0.37 lb/A at 21, 28, and 41 DAA. This high rate of KIH-485 provided >84% control of ivyleaf morningglory at each of the three dates. Control of common ragweed in treatments containing KIH-485 41 DAA was drastically increased by utilizing higher rates of this herbicide.

Table. Weed control with KIH-485 (Monnig, Wait, Li, Bradley).

Application	Rate (lb/A)	Corn injury			Weed Control									
		21DAA	28	41	SETFA			POLPY			IPHOE			AMBEL
					21	28	41	21	28	41	21	28	41	41
Untreated		0	0	0	0	0	0	0	0	0	0	0	0	0
KIH-485	0.15	3	4	0	82	93	95	89	79	63	73	50	43	73
KIH-485	0.19	3	4	0	89	96	98	90	83	58	78	54	43	76
KIH-485	0.22	3	5	0	85	98	99	91	80	48	74	54	53	90
KIH-485	0.37	4	4	0	94	99	100	90	90	64	86	84	86	99
s-Metolachlor	1.59	3	3	0	93	100	99	95	89	79	63	53	35	63
Acetochlor	1.55	4	4	0	95	99	98	94	95	54	73	56	38	83
Acetochlor	2.0	4	5	0	96	99	99	91	94	55	70	56	40	81
KIH-485+ Atrazine	0.19+ 1.2	3	5	0	90	98	98	90	100	91	73	78	58	95
s-Metolachlor+ Atrazine	1.25+ 1.63	4	5	0	95	98	97	94	96	90	71	68	63	96
LSD(0.05)		2	1	0	8	3	2	10	11	14	13	10	12	13