

Weed control with soil applied KIH-485, s-metolachlor, acetochlor, flufenacet and dimethenamid-P in corn at Lamberton, MN in 2003. Getting, Jodie K. and Bruce D. Potter. The objective of this study was to evaluate soil applied corn herbicides for annual grass and annual broadleaf weed control in corn. This study was conducted on a Normania loam soil containing 5.1% organic matter, pH 6.2 and soil test P and K levels of 42 and 338 lb/A, respectively. A randomized complete block design with four replications and a plot size of 10 by 30 ft was used. The site was planted to oats in 2002 and was fall chiseled. The area was fertilized with 180 lb/A of nitrogen as urea. On May 2, 2003, Northrup King 'N32L9' glufosinate resistant field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. Cyfluthrin + tebupirimphos (Aztec 2.1G) was applied at 6.7 oz/1000 row feet in a T-band for the control of northern corn rootworm larvae. All treatments were applied with a tractor-mounted sprayer delivering 20 gpa at a pressure of 40 psi. The sprayer was equipped with 8002 flat-fan nozzles spaced 15 inches apart on the boom. Application date, environmental conditions, weed density in the weedy check four weeks after planting and rainfall data are listed below:

Date	May 2
Treatment	PRE
Temperature (F)	
air	63
soil (4 inch)	58
Relative humidity (%)	22
Wind (mph)	E 5
Sky	clear
Soil moisture	dry
Yellow foxtail no./ft ²	98
Common lambsquarters no./ft ²	6
Redroot pigweed no./ft ²	2
Rainfall after application (inch)	
1 week	1.07
2 week	1.15
3 week	0.50

Early season crop development was delayed due to a June 23 hailstorm. The precipitation received in July and August was below average with a total of 2.96 inches compared to the historical average of 7.07 inches. None of the herbicide treatments caused visible crop injury. None of the herbicides provided adequate season-long control of yellow foxtail. In August, acetochlor, [s-metolachlor & atrazine & CGA-154281] and dimethenamid-P provided 66, 65, and 61% yellow foxtail control, respectively. KIH-485 had 15 to 53% control. All other herbicide treatments had 43% or less control. KIH-485 + atrazine and [s-metolachlor & atrazine & CGA-154281] resulted in 86 and 83% common lambsquarters control, respectively. All other herbicide treatments had 73% or less control. KIH-485 provided 60 to 86% redroot pigweed control. KIH-485 + atrazine resulted in 91% control. [S-metolachlor & CGA-154281] gave 66 to 83% control and [s-metolachlor & atrazine & CGA-154281] gave 90% control. Acetochlor, [flufenacet & metribuzin], and dimethenamid-P gave 90, 85, and 80% control, respectively. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Weed control with soil applied KIH-485, s-metolachlor, acetochlor, flufenacet and dimethenamid-P in corn at Lamberton, MN in 2003. (Getting and Potter).

Treatment ^a	Rate	SETLU				CHEAL				AMARE				Yield
		5/28	6/10	6/27	8/27	5/28	6/10	6/27	8/27	5/28	6/10	6/27	8/27	
<u>Preemergence</u>	(lb/A or %)	-----(% control)-----												(bu/A) ^b
KIH-485	0.11	83	70	30	15	88	76	18	10	95	93	66	60	71
KIH-485	0.19	89	82	61	40	95	84	66	55	96	95	80	69	118
KIH-485	0.22	88	83	64	33	94	86	70	65	95	95	86	83	115
KIH-485	0.27	93	90	77	53	96	90	75	65	96	95	91	86	124
[S-metolachlor&CGA-154281]	0.96	88	83	50	20	87	61	20	13	95	93	70	66	91
[S-metolachlor&CGA-154281]	1.60	90	87	69	40	93	80	43	35	97	95	76	74	103
[S-metolachlor&CGA-154281]	1.91	93	90	73	38	93	79	55	41	97	95	89	83	82
KIH-485+atrazine	0.18+1.47	90	84	65	46	97	93	91	86	97	96	94	91	120
[S-meto&Atra&CGA-154281]	[1.83&1.47]	96	94	87	65	97	94	90	83	97	96	95	90	135
Acetochlor	2.0	97	95	87	66	97	91	83	73	97	97	94	90	122
Dimethenamid-P	0.94	96	94	84	61	95	89	69	55	97	97	90	80	120
[Flufenacet&metribuzin]	[0.78&0.2]	91	83	65	43	95	93	84	73	96	93	84	85	121
<u>Checks</u>														
Weedy check		0	0	0	0	0	0	0	0	0	0	0	0	5
Weed-free		100	100	100	100	100	100	100	100	100	100	100	100	147
	LSD (0.10)	3.3	3.9	8.5	11.9	3.4	9.0	14.0	15.7	1.8	2.3	12.5	16.7	17.3

^a Acetochlor = Surpass 6.4E; atrazine = Aatrex 4L; dimethenamid-P = Outlook 6L; [flufenacet&metribuzin] = Axiom 68DF; [s-meto&CGA-154281] or [s-metolachlor & CGA-154281] = Dual II Magnum 7.64EC; [S-meto&Atra&CGA-154281] or [s-metolachlor & atrazine & CGA-154281] = Bicep Lite II Magnum 6F.

^b Yield adjusted to 15.5% moisture.