

Weed control with soil applied atrazine premixes in glyphosate-resistant corn at Lamberton, MN in 2004. Getting, Jodie K. and Bruce D. Potter. The objective of this study was to evaluate soil applied atrazine premixes for annual grass and annual broadleaf weed control in glyphosate-resistant corn. This study was conducted on a Normania loam soil containing 4.7% organic matter, pH 5.8 and soil test P and K levels of 36 and 272 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 corn in 2003 and was fall chiseled. The area was fertilized with 150 lb/A of nitrogen as urea. On April 26, 2004, Dekalb 'DK 4710' glyphosate resistant field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. Cyfluthrin + tebufos-methyl (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 dates, environmental conditions, plant sizes and rainfall data are listed below:

Date	April 27	June 3	June 22
Treatment	PRE	POST I	POST II
Temperature (F)			
air	48	72	67
soil (4 inch)	42	63	70
Relative humidity (%)	40	36	48
Wind (mph)	S 5-8	calm	W 2-5
Sky	cloudy	cloudy	clear
Soil moisture	moist	dry	dry
Corn			
leaf no.	-	V3	V7
height (inch)	-	5	18
Giant foxtail			
leaf no.	-	2 to 4	2 to 4
height (inch)	-	2 to 4	2 to 4
no./ft <sup>2</sup>	-	110	24
Common lambsquarters			
leaf no.	-	2 to 5	2 to 4
height (inch)	-	1 to 3	1 to 3
no./ft <sup>2</sup>	-	3	<1
Tall waterhemp			
leaf no.	-	2 to 4	2 to 4
height (inch)	-	0.25 to 1	1 to 2
no./ft <sup>2</sup>	-	5	2
Rainfall after application (inch)			
1 week	0.12	0.29	0.48
2 week	0.07	2.44	0.87
3 week	1.29	0.47	1.43

(Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Weed control with soil applied atrazine premixes in glyphosate-resistant corn at Lamberton, MN in 2004 (Getting and Potter).

Treatment <sup>a</sup>	Rate	Giant foxtail				Common lambsquarters				Tall waterhemp				Yield
		6/2	6/25	7/21	9/9	6/2	6/25	7/21	9/9	6/2	6/25	7/21	9/9	
<u>Preemergence</u>	(oz/A, pt/A, lb/A or %)	-----(% control)-----												(bu/A) <sup>b</sup>
Lumax	6 pt	70	76	69	58	95	100	99	99	95	99	96	98	199
Keystone LA	4.5 pt	81	81	73	66	88	88	92	91	94	100	94	90	200
Keystone LA + Hornet	4.5 pt + 3oz	80	79	70	59	95	100	100	100	95	100	99	100	200
Camix + Princep	4.8 pt + 2pt	75	77	68	58	95	100	100	100	95	100	100	99	204
<u>Preemergence/POST I (2 to 4-inch weeds)</u>														
Dual II Magnum /	2 pt /	70	92	88	84	55	100	99	99	94	100	98	99	224
Callisto + Aatrex + COC + 28%N	3 oz + 0.5 lb + 1% + 2.5%													
Outlook /	21 oz /	71	94	86	76	74	100	98	98	93	100	96	97	213
Distinct + NIS + 28%N	4 oz + 0.25% + 2.5%													
Keystone LA /	4.5 pt /	80	91	81	73	89	100	99	98	95	100	99	98	209
Hornet + NIS + 28%N	3 oz + 0.25% + 2.5%													
Cinch / Steadfast	0.66 pt / 0.75 oz	43	97	88	83	60	100	99	99	90	100	99	98	206
+ Callisto + Aatrex + COC + 28%N	+ 3 oz + 0.5 lb + 1% + 2.5%													
Define / Option	15 oz / 1.5 oz	61	94	86	79	88	100	99	98	95	100	94	96	213
+ Distinct + MSO + 28%N	+ 2 oz + 1% + 2.5%													
Harness Xtra/	2 pt /	68	93	83	78	80	100	99	96	94	100	91	87	207
Roundup Weathermax + AMS	22 oz + 3.4 lb													
Dual II Magnum /	1 pt /	68	92	86	79	71	100	98	95	88	100	91	88	209
Touchdown Total + AMS	24 oz + 3.4 lb													
Lumax /	3 pt /	60	94	84	74	81	100	99	98	94	100	98	97	222
Touchdown Total + AMS	24 oz + 3.4 lb													
Dual II Magnum/	1 pt /	54	93	81	74	70	100	99	99	94	100	97	97	208
Touchdown Total + Callisto + AMS	16 oz + 3 oz + 3.4 lb													
<u>POST I (2 to 4-inch weeds)/POST II (regrowth)</u>														
Roundup Weathermax + AMS /	22 oz + 3.4 lb /	0	91	93	93	0	100	99	99	0	100	98	98	212
Roundup Weathermax + AMS	22 oz + 3.4 lb													
<u>Check</u>														
Weedy check		0	0	0	0	0	0	0	0	0	0	0	0	58
	LSD (0.10)	9.4	5.0	4.8	7.9	12.1	3.9	2.1	2.6	2.4	0.8	5.0	5.6	11.0

<sup>a</sup> COC = crop oil concentrate; MSO = methylated seed oil; NIS = nonionic surfactant; 28%N = an aqueous solution of urea and ammonium nitrate; AMS = spray grade ammonium sulfate.

<sup>b</sup> Yield adjusted to 15.5% moisture.