

Weed control in Roundup Ready or Liberty-Link corn systems at Lamberton, MN in 2006. Getting, Jodie K. The objective of this study was to evaluate products applied preemergence or early postemergence with glyphosate or glufosinate in corn. This study was conducted on a Ves loam soil containing 4.3% organic matter, pH 6.5 and soil test P and K levels of 22 and 320 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 soybeans in 2005 and was fall chiseled. The area was fertilized with 150-100-100 on April 14, 2006. On April 25, 2006, Pioneer '38H69' field corn was planted in 30-inch rows at a seeding rate of 33,000 seeds/A. Tefluthrin (Force) was applied at 5 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 25	May 26	May 30	June 13
Treatment	PRE	POST I	POST II	POST III
Temperature (F)				
air	54	61	63	66
soil (4 inch)	54	64	70	72
Relative humidity (%)	26	83	60	58
Wind (mph)	NE 7	N 5	NW 5	calm
Sky	clear	p. cloudy	p. cloudy	clear
Soil moisture	dry	dry	dry	moist
Corn				
leaf no.	-	V2	V3	V7
height (inch)	-	3	5	20
Giant foxtail				
leaf no.	-	1 to 3	2 to 4	1 to 3
height (inch)	-	0.75 to 2	3 to 5	1 to 3
no./ft <sup>2</sup>	-	73	61	<1
Common lambsquarters				
leaf no.	-	2 to 4	3 to 5	2 to 4
height (inch)	-	0.5 to 1	2 to 3	1 to 3
no./ft <sup>2</sup>	-	4	5	<1
Tall waterhemp				
leaf no.	-	1 to 3	1 to 5	1 to 3
height (inch)	-	0.5 to 1	1 to 4	1 to 2
no./ft <sup>2</sup>	-	13	10	<1
Rainfall after application (inch)				
1 week	2.60	0.09	4.35	2.84
2 week	0.01	4.26	1.09	1.11
3 week	1.69	1.63	2.84	0.00

May precipitation totaled 2.44 inches compared to the long-term average of 3.34 inches. Above normal precipitation in June resulted in 9.39 inches compared to the long-term average of 3.77 inches. The trial received 4.26 inches of rain and hail 6 days after POST II application. As a result, there was a heavy flush of new emerging weeds. The growing degree days were slightly below average for May and June but above average for July. The predominate weed species were giant foxtail, common lambsquarters, and tall waterhemp. None of the herbicide treatments caused visible crop injury. The trial area received 2.60 inches of rain within the first week of PRE application. On May 25, prior to POST herbicide application, Aatrex at 4 pint and Define at 13 oz gave 68 and 89% giant foxtail control, respectively. All other PRE treatments gave 92% or greater control. Define at 13 oz, Dual II Magnum at 1.33 pint, Outlook at 12 oz, and Dual II Magnum at 2 pint resulted in 81, 81 to 88, 89, and 94% common lambsquarters control, respectively. All other treatments had 97% or greater control. All of the PRE treatments provided 97% or greater tall waterhemp control. In August, Lumax applied PRE alone resulted in 76% yellow foxtail control. Lumax applied PRE/POST I gave 78% control. One-pass herbicide treatments applied POST I and POST II resulted in 75 to 79% control. Aatrex followed by Roundup Original Max gave 81% control. All other treatments had 86% or greater control. Roundup Weathermax + AMS and Roundup Weathermax + Resolve + AMS provided 90 to 91% and 89 to 90% control of common lambsquarters and tall waterhemp, respectively. All other treatments had 94% or greater common lambsquarters and tall waterhemp control. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Weed control in Roundup Ready or Liberty-Link corn systems at Lamberton, MN in 2006. (Getting).

Treatment <sup>a</sup>	Rate (oz/A, pt/A, lb/A or %)	Giant foxtail				Common lambsquarters				Tall waterhemp				Yield (bu/A) <sup>b</sup>
		5/25	6/9	6/27	8/21	5/25	6/9	6/27	8/21	5/25	6/9	6/27	8/21	
		-----(% control)-----												
<u>Preemergence</u>														
Lumax	6 pt	97	87	83	76	100	100	100	100	100	100	100	100	192
<u>Preemergence/POST I (1 to 2-inch weeds)</u>														
Lumax / Lumax + NIS	3 pt / 3 pt + 0.25%	93	84	83	78	99	100	100	99	99	100	100	99	192
<u>Preemergence/POST II (3 to 5-inch weeds)</u>														
Dual II Magnum /	2 pt /	93	93	90	87	94	100	100	100	99	100	100	100	200
Callisto + Aatrex + COC + AMS	3 oz + 1 pt + 1% + 2.5 lb													
Surpass /	2.75 pt /	97	97	96	92	99	100	100	100	100	100	100	100	199
Hornet + Aatrex + COC + AMS	3 oz + 1 pt + 1% + 2.5 lb													
Outlook /	21 oz /	97	99	95	93	98	100	100	100	100	100	100	100	197
Distinct + Aatrex + NIS + AMS	4 oz + 1 pt + 0.25% + 2.5 lb													
Lumax / Liberty + AMS	2 qt / 24 oz + 2.5 lb	94	98	95	93	99	100	100	100	99	100	100	100	205
Define / Liberty + Aatrex + AMS	13 oz / 32 oz + 1 pt + 2.5 lb	89	99	97	93	81	100	100	99	97	100	100	99	194
Dual II Magnum /	1.33 pt /	93	99	96	93	81	95	98	98	98	100	100	98	206
Touchdown Total + AMS	24 oz + 2.5 lb													
Dual II Magnum /	1.33 pt /	92	98	97	93	88	100	100	100	99	100	100	100	197
Touchdown Total + Callisto + AMS	24 oz + 3 oz + 2.5 lb													
Lumax / Touchdown Total + AMS	2 qt / 24 oz + 2.5 lb	95	99	97	96	99	100	100	100	99	100	100	99	198
Harness Xtra /	1.25 qt /	95	98	93	91	98	100	100	100	100	100	100	100	199
Roundup Weathermax + AMS	22 oz + 2.5 lb													
Outlook / Roundup Weathermax + Distinct + AMS	12 oz / 11 oz + 4 oz + 2.5 lb	95	100	95	91	89	100	100	100	99	100	100	98	198
Degree Xtra /	4 pt /	95	85	97	96	100	100	100	100	100	100	100	100	194
Roundup Original Max	21.3 oz													
Aatrex /	4 pt /	68	99	90	81	97	100	98	99	97	100	99	99	196
Roundup Original Max	21.3 oz													
<u>POST I (1 to 2-inch weeds)</u>														
Lumax + Liberty + AMS	2 qt + 24 oz + 2.5 lb	-	81	81	75	-	100	98	98	-	99	95	98	191
Lumax + Touchdown Total + AMS	2 qt + 24 oz + 2.5 lb	-	88	83	79	-	99	99	100	-	99	99	100	191
Degree Xtra + Roundup Original Max	4 pt + 21.3 oz	-	99	81	79	-	100	100	100	-	96	98	99	188
<u>POST II (3 to 5-inch weeds)</u>														
Roundup Weathermax + AMS	22 oz + 2.5 lb	-	99	88	78	-	93	88	90	-	100	90	89	194
Roundup Weathermax + Resolve + AMS	22 oz + 1 oz + 2.5 lb	-	99	90	79	-	94	93	91	-	100	92	90	193
<u>POST I (1 to 2-inch weeds)/POST III (regrowth)</u>														
Roundup Weathermax + AMS /	22 oz + 2.5 lb /	-	100	91	86	-	91	97	98	-	100	96	94	193
Roundup Weathermax + AMS	22 oz + 2.5 lb													
<u>Check</u>														
Weedy		0	0	0	0	0	0	0	0	0	0	0	0	28
	LSD (0.10)	2.9	3.2	3.3	4.2	5.3	3.2	2.5	2.5	1.3	1.5	2.3	2.8	11.8

<sup>a</sup> COC = crop oil concentrate; NIS = nonionic surfactant; AMS = spray grade ammonium sulfate.<sup>b</sup> Yield adjusted to 15.5% moisture.