

Weed control with Define, Option, AE 0172747, and Liberty in Liberty Link corn at Lamberton, MN in 2006.

Getting, Jodie K. The objective of this study was to evaluate Define, Option, AE 0172747, and Liberty applied in different combinations for annual grass and broadleaf control 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
Treatment	PRE	POST I	POST II
Temperature (F)			
air	54	61	65
soil (4 inch)	52	64	72
Relative humidity (%)	26	83	55
Wind (mph)	NE 7	N5	NE 5
Sky	clear	p. cloudy	cloudy
Soil moisture	dry	dry	dry
Corn			
leaf no.	-	V2	V3
height (inch)	-	3	6
Giant foxtail			
leaf no.	-	1 to 3	2 to 4
height (inch)	-	0.75 to 2	3 to 4
no./ft <sup>2</sup>	-	6	8
Common lambsquarters			
leaf no.	-	2 to 4	3 to 5
height (inch)	-	0.5 to 1	2 to 4
no./ft <sup>2</sup>	-	2	2
Tall waterhemp			
leaf no.	-	1 to 3	3 to 4
height (inch)	-	0.25 to 1	2 to 3
no./ft <sup>2</sup>	-	4	4
Rainfall after application (inch)			
1 week	2.60	0.09	4.35
2 week	0.01	4.26	1.09
3 week	1.69	1.63	2.84

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 6 days after POST II application. As a result, there was a heavy flush of new emerging weeds after the POST herbicide application. The subsoil moisture helped carry the crop through a drier than normal July. 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 with the first week of PRE application. As a result, Define applied at the reduced rate of 12 oz/A resulted in good weed control. On May 25, prior to POST herbicide application, Define provided 96, 83 to 90, and 88 to 97% control of giant foxtail, common lambsquarters, and tall waterhemp, respectively. In August, treatments applied POST I without a PRE treatment provided 75 to 86%, 94 to 97%, and 74 to 90% control of giant foxtail, common lambsquarters, and tall waterhemp, respectively. Define PRE followed by Liberty + Aatrex + AMS or Liberty + Callisto + AMS provided 97% or greater control of these weeds. (Southwest Research and Outreach Center, University of Minnesota, Lamberton).

Table. Weed control with Define, Option, AE 0172747, and Liberty in Liberty Link corn 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	
<u>Preemergence/ POST I (1 to 2-inch weeds)</u>		-----(% control)-----												
Define / AE 0172747 + Aatrex + Destiny MSO + 28%N	12 oz / 3 oz + 8.9 oz + 1.5 pt + 1.5 qt	96	93	91	90	83	100	100	99	88	99	98	96	196
<u>Preemergence/POST II (2 to 4-inch weeds)</u>														
Define / Liberty + Aatrex + AMS	12 oz / 32 oz + 8.9 oz + 3 lb	96	100	97	97	89	100	100	100	93	100	100	99	205
Define / Liberty + Callisto + AMS	12 oz / 32 oz + 1.5 oz + 3 lb	96	100	98	97	90	100	100	100	97	100	100	100	205
<u>POST I (1 to 2-inch weeds)</u>														
Liberty + Define + Aatrex + AMS	32 oz + 10 oz + 8.9 oz + 3 lb	-	91	87	86	-	98	98	96	-	89	83	81	187
Define + Option + Distinct + Destiny MSO + 28%N	10 oz + 1.5 oz + 4 oz + 1.5 pt + 1.5 qt	-	88	83	80	-	97	97	94	-	87	79	75	191
Define + Option + AE 0172747 + Destiny MSO + 28%N	10 oz + 1.5 oz + 3 oz + 1.5 pt + 1.5 qt	-	84	84	75	-	100	99	97	-	92	87	90	187
Option + Distinct + Destiny MSO + 28%N	1.5 oz + 4 oz + 1.5 pt + 1.5 qt	-	85	82	80	-	99	98	95	-	89	83	85	186
Option + AE 0172747 + Destiny MSO + 28%N	1.5 oz + 3 oz + 1.5 pt + 1.5 qt	-	85	81	78	-	99	99	96	-	85	76	74	179
Liberty + AE 0172747 + AMS	32 oz + 1 oz + 3 lb	-	86	84	79	-	99	99	97	-	79	79	79	186
<u>Check</u>														
Weedy	LSD (0.10)	0	0	0	0	0	0	0	0	0	0	0	0	112
		1.6	4.0	5.9	6.8	2.8	1.3	2.0	2.5	5.0	6.9	7.6	6.9	15.6

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

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