

Compare and contrast weed control differences with Callisto, Impact, and Laudis herbicides in a Liberty Link field corn program at Rochester, MN, in 2007.

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The objective of this trial was to compare and contrast weed control differences among herbicide programs with Callisto, Impact, and Laudis in Liberty Link field corn in southeastern Minnesota. The research site was a Lawler loam series with a pH of 6.8 and soil test P and K levels of 56 ppm and 161 ppm, respectively. Spring fertilizer was broadcast ahead of planting on April 13, at a rate of 99-23-60-24 (N-P-K-S). The area was side dressed with an additional 30 lb/A of N on June 7. The field was spring disked twice and field cultivated once prior to planting. The corn hybrid, NK GT/LL N38B4 was planted on May 3, 2007, at a depth of 1.5 inches in 30 inch rows at 32,000 seeds per acre. A randomized complete block design was used with four replications. Postemergence treatments were applied with a tractor-mounted sprayer delivering 20 gpa at 32 psi using Turbo Tee 11002 nozzles. Evaluations of the plots were taken on June 4, June 11, June 21, June 28 and August 7. Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were machine harvested on September 26, 2007.

Date	May 28
Treatment	POST
Temperature (F)	
Air	73
soil	66.6
Relative Humidity (%)	59
Wind (mph)	17
Soil moisture	adequate
Corn	
stage	4 collar
height (inch)	6.5
Giant Ragweed	
weed density (ft ²)	14.3
height (inch)	3.4
Common Lambsquarters	
weed density (ft ²)	8.5
height (inch)	2.0
Common Waterhemp	
weed density (ft ²)	43.3
height (inch)	1.2
Giant Foxtail	
weed density (ft ²)	2.8
height (inch)	1.5
Rainfall after each application (inch)	
week 1	1.31
week 2	0.38
week 3	1.15

CONCLUSIONS

No crop response was observed from herbicide applications during this trial.

Callisto tank mixed with Liberty provided statistically higher giant ragweed control compared to Laudis + Liberty, and Impact + Liberty. Callisto and Laudis, tank mixed with Liberty provided statistically higher common lambsquarters control when compared to Impact + Liberty. Callisto + Liberty and Laudis + provided statistically higher common waterhemp control when compared to Impact + Liberty. Impact + Liberty provided statistically higher giant foxtail control than either Callisto + Liberty or Laudis + Liberty.

Weed control comparisons with the addition of 16 fluid oz of Aatrex (0.5 lb ai of atrazine) to Laudis, Callisto or Impact tank mixed with Liberty were also investigated. Laudis or Callisto and tank mixed with Liberty + Aatrex provided statistically higher giant ragweed control when compared to Impact + Liberty + Aatrex and Liberty + Aatrex. There were no statistical differences between Laudis, Callisto or Impact when tank mixed with Liberty + Aatrex for common lambsquarters control. Callisto or Laudis tank mixed with of Liberty + Aatrex provided statistically higher common waterhemp control when compared to Impact + Liberty + Aatrex and Liberty + Aatrex. There were no statistical differences with Laudis, Callisto or Impact when tank mixed with Liberty + Aatrex for giant foxtail control.

Comparisons of Laudis + Aatrex with either COC or MSO resulted in similar weed control for all weed species evaluated in this trial. Comparisons of Laudis with and without Aatrex showed statistically greater common waterhemp and giant foxtail control when Laudis was tank mixed with Aatrex. (University of Minnesota Extension, Regional Center, Rochester, MN)

Table 1. Performance of herbicide systems for giant ragweed control in field corn on June 4, June 11, June 21, June 28, and August 7 at Rochester, MN, in 2007.

Treatment	Rate	Giant Ragweed Control					Yield
		6/4	6/11	6/21	6/28	8/7	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	7
POST I							
Laudis + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	75	86	91	90	88	137
Callisto + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	76	90	94	95	93	148
Impact + Liberty + AMS	0.5 fl oz + 32 fl oz + 1.7 lb	77	77	73	73	80	102
Liberty + Aatrex + AMS	32 fl oz + 16 fl oz + 1.7 lb	85	92	91	89	90	101
Laudis + Liberty + Aatrex + AMS	2 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	89	97	97	97	98	145
Callisto + Liberty + Aatrex + AMS	2 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	91	97	98	98	99	107
Impact + Liberty + Aatrex + AMS	0.5 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	86	94	95	91	92	118
Impact + Liberty + Aatrex + AMS	0.33 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	87	91	94	90	89	151
Laudis + MSO + UAN 28%	3 fl oz + 1% v/v + 1. qt	45	89	95	95	95	159
Laudis + Aatrex + COC + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	83	97	97	98	99	132
Laudis + Aatrex + MSO + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	84	96	96	98	98	152
LSD (P=0.10)		5	1	8	10	4	54

Table 2. Performance of herbicide systems for common lambsquarters control in field corn on June 4, June 11, June 21, June 28, and August 7 at Rochester, MN, in 2007.

Treatment	Rate	Common Lambsquarters Control					Yield
		6/4	6/11	6/21	6/28	8/7	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	7
POST I							
Laudis + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	98	98	87	97	97	137
Callisto + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	95	99	96	100	98	148
Impact + Liberty + AMS	0.5 fl oz + 32 fl oz + 1.7 lb	88	87	72	85	90	102
Liberty + Aatrex + AMS	32 fl oz + 16 fl oz + 1.7 lb	99	99	97	100	98	101
Laudis + Liberty + Aatrex + AMS	2 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	99	99	99	100	99	145
Callisto + Liberty + Aatrex + AMS	2 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	99	99	99	100	99	107
Impact + Liberty + Aatrex + AMS	0.5 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	99	99	98	100	99	118
Impact + Liberty + Aatrex + AMS	0.33 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	99	99	98	100	99	151
Laudis + MSO + UAN 28%	3 fl oz + 1% v/v + 1. qt	41	99	95	100	98	159
Laudis + Aatrex + COC + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	93	99	98	100	99	132
Laudis + Aatrex + MSO + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	99	99	99	100	99	152
LSD (P=0.10)		5	1	4	3	2	54

Table 3. Performance of herbicide systems for weed control in field corn on June 4, 11, 21, 28, and August 7 at Rochester, MN, in 2007.

Treatment	Rate	Common Waterhemp Control					Yield
		6/4	6/11	6/21	6/28	8/7	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	7
POST I							
Laudis + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	93	89	81	79	88	137
Callisto + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	90	93	83	93	93	148
Impact + Liberty + AMS	0.5 fl oz + 32 fl oz + 1.7 lb	84	80	77	74	81	102
Liberty + Aatrex + AMS	32 fl oz + 16 fl oz + 1.7 lb	90	86	79	78	88	101
Laudis + Liberty + Aatrex + AMS	2 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	97	96	89	97	97	145
Callisto + Liberty + Aatrex + AMS	2 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	95	96	93	98	98	107
Impact + Liberty + Aatrex + AMS	0.5 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	90	86	83	81	89	118
Impact + Liberty + Aatrex + AMS	0.33 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	91	83	81	75	86	151
Laudis + MSO + UAN 28%	3 fl oz + 1% v/v + 1. qt	56	93	81	80	88	159
Laudis + Aatrex + COC + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	87	97	92	98	98	132
Laudis + Aatrex + MSO + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	81	97	94	98	97	152
LSD (P=0.10)		5	1	5	5	5	54

Table 4. Performance of herbicide systems for weed control in field corn on June 4, June 11, June 21, June 28, and August 7 at Rochester, MN, in 2007.

Treatment	Rate	Giant Foxtail Control					Yield
		6/4	6/11	6/21	6/28	8/7	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	7
POST I							
Laudis + Liberty + AMS	2 fl oz + 32 fl oz +1.7 lb	93	89	85	74	83	137
Callisto + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	91	89	86	70	83	148
Impact + Liberty + AMS	0.5 fl oz + 32 fl oz + 1.7 lb	95	96	88	80	97	102
Liberty + Aatrex + AMS	32 fl oz + 16 fl oz + 1.7 lb	94	95	96	93	95	101
Laudis + Liberty + Aatrex + AMS	2 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	91	97	96	90	96	145
Callisto + Liberty + Aatrex + AMS	2 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	93	97	96	84	95	107
Impact + Liberty + Aatrex + AMS	0.5 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	93	98	96	91	94	118
Impact + Liberty + Aatrex + AMS	0.33 fl oz + 32 fl oz + 16 fl oz + 1.7 lb	96	97	95	92	94	151
Laudis + MSO + UAN 28%	3 fl oz + 1% v/v + 1. qt	83	96	93	69	88	159
Laudis + Aatrex + COC + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	94	99	98	97	98	132
Laudis + Aatrex + MSO + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	95	98	96	95	97	152
LSD (P=0.10)		5	2	4	10	4	54

