

Comparison of the weed control performance of Laudis to other glyphosate, Liberty, and conventional herbicide programs in field corn at Rochester, MN, in 2007.

Behnken, Lisa M., Fritz R. Breitenbach, Ryan P. Miller, Kristal Brogan, and Kelly Behnken

The objective of this trial was to compare weed control performance of Laudis herbicide programs with glyphosate, Liberty, and conventional herbicides in field corn in southeastern Minnesota. The research site was a Lawler loam series with a pH of 7.0 and soil test P and K levels of 16 ppm and 160 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 and field cultivated prior to planting. The corn hybrid, Pioneer 38H65, was planted on April 27, 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. Preemergence (PRE) and postemergence (POST I and POST II) 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 May 30, June 4, June 11, June 28 and August 8. Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were machine harvested on September 26, 2007. Conditions were extremely dry at this site from mid-July to mid August 2007.

Date	April 27	May 23	May 28
Treatment	PRE	POST I	POST II
Temperature (F)			
Air	71	70	69
soil	60	69	64
Relative Humidity (%)	34	70	62
Wind (mph)	10	23	18
Soil moisture	adequate	excessive	adequate
Corn			
stage	--	3 collar	4 collar
height (inch)	--	5.0	8.0
Giant Ragweed			
weed density (ft ²)	--	24.9	24.9
height (inch)	--	1.6	4.8
Common Lambsquarters			
weed density (ft ²)	--	4.0	4.0
height (inch)	--	1.1	4.1
Common Waterhemp			
weed density (ft ²)	--	3.5	3.5
height (inch)	--	1.1	1.3
Giant Foxtail			
weed density (ft ²)	--	1.5	1.5
height (inch)	--	1.3	2.2
Rainfall after each application (inch)			
week 1	0.52	2.04	1.31
week 2	0.52	1.28	0.38
week 3	0.34	0.38	1.15

Table 1. Performance of herbicide systems for giant ragweed control in field corn on May 30, June 4, June 11, June 28, and August 8 at Rochester, MN, in 2007.

Treatment	Rate	Giant Ragweed Control					Yield
		5/30	6/4	6/11	6/28	8/8	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	2
PRE / POST II							
Resolve / Laudis + Aatrex + COC + UAN 28%	1 oz / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	30	82	96	98	100	82
Resolve + Aatrex / Laudis + MSO + UAN 28%	1 oz + 26 fl oz / 3 fl oz + 1% v/v + 1.5 qt	41	78	95	99	100	66
Bicep Lite II Mag / Callisto + Aatrex + COC + UAN 28%	2 qt / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	69	93	95	99	100	71
Define + Resolve / Laudis + Aatrex + COC + UAN 28%	12 fl oz + 1 oz / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	31	81	97	99	100	79
POST I							
Laudis + Accent + MSO + UAN 28%	3 fl oz + 0.33 oz + 1% v/v + 1.5 qt	70	77	82	94	96	46
Laudis + MSO + UAN 28%	3 fl oz + 1% v/v + 1.5 qt	71	78	82	95	98	55
Laudis + Aatrex + COC + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	91	89	93	97	100	50
POST II							
Laudis + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	64	83	87	89	93	60
Liberty + Aatrex + AMS	32 fl oz + 16 fl oz + 1.7 lb	44	87	90	91	93	54
Laudis + Roundup Original Max + AMS	3 fl oz + 22 fl oz + 1.7 lb l	35	78	89	95	98	60
Roundup Original Max + Aatrex AMS	22 fl oz + 16 fl oz + 1.7 lb	31	76	90	92	95	54
LSD (P=0.10)		6	5	3	4	2	24

Table 2. Performance of herbicide systems for common lambsquarters control in field corn on May 30, June 4, June 11, June 28, and August 8 at Rochester, MN, in 2007.

Treatment	Rate	Common Lambsquarters Control					Yield
		5/30	6/4	6/11	6/28	8/8	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	2
PRE/ POST II							
Resolve / Laudis + Aatrex + COC + UAN 28%	1 oz / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	50	98	99	100	100	82
Resolve + Aatrex / Laudis + MSO + UAN 28%	1 oz + 26 fl oz / 3 fl oz + 1% v/v + 1.5 qt	89	99	99	100	100	66
Bicep Lite II Mag / Callisto + Aatrex + COC + UAN 28%	2 qt / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	97	99	99	100	100	71
Define + Resolve / Laudis + Aatrex + COC + UAN 28%	12 fl oz + 1 oz / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	53	96	99	100	100	79
POST I							
Laudis + Accent + MSO + UAN 28%	3 fl oz + 0.33 oz + 1% v/v + 1.5 qt	81	98	97	91	95	46
Laudis + MSO + UAN 28%	3 fl oz + 1% v/v + 1.5 qt	85	99	96	87	94	55
Laudis + Aatrex + COC + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	99	99	99	100	100	50
POST II							
Laudis + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	89	97	96	95	93	60
Liberty + Aatrex + AMS	32 fl oz + 16 fl oz + 1.7 lb	75	98	99	100	98	54
Laudis + Roundup Original Max + AMS	3 fl oz + 22 fl oz + 1.7 lb	24	99	99	100	98	60
Roundup Original Max + Aatrex AMS	22 fl oz + 16 fl oz + 1.7 lb	15	99	98	100	99	54
LSD (P=0.10)		7	2	2	4	3	24

Table 3. Performance of herbicide systems for common waterhemp control in field corn on May 30, June 4, June 11, June 28, and August 8 at Rochester, MN, in 2007.

Treatment	Rate	Common Waterhemp Control					Yield
		5/30	6/4	6/11	6/28	8/8	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	2
PRE / POST II							
Resolve / Laudis + Aatrex + COC + UAN 28%	1 oz / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	48	89	99	98	98	82
Resolve + Aatrex / Laudis + MSO + UAN 28%	1 oz + 26 fl oz / 3 fl oz + 1% v/v + 1.5 qt	61	88	99	98	98	66
Bicep Lite II Mag / Callisto + Aatrex + COC + UAN 28%	2 qt / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	97	99	99	99	100	71
Define + Resolve / Laudis + Aatrex + COC + UAN 28%	12 fl oz + 1 oz / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	53	94	99	100	100	79
POST I							
Laudis + Accent + MSO + UAN 28%	3 fl oz + 0.33 oz + 1% v/v + 1.5 qt	87	98	96	83	95	46
Laudis + MSO + UAN 28%	3 fl oz + 1% v/v + 1.5 qt	88	98	95	87	94	55
Laudis + Aatrex + COC + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	99	99	97	81	97	50
POST II							
Laudis + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	89	97	92	81	95	60
Liberty + Aatrex + AMS	32 fl oz + 16 fl oz + 1.7 lb	83	96	88	75	88	54
Laudis + Roundup Original Max + AMS	3 fl oz + 22 fl oz + 1.7 lb	23	98	98	91	98	60
Roundup Original Max + Aatrex AMS	22 fl oz + 16 fl oz + 1.7 lb	15	98	95	51	95	54
LSD (P=0.10)		6	3	3	9	2	24

Table 4. Performance of herbicide systems for giant foxtail control in field corn on May 30, June 4, June 11, June 28, and August 8 at Rochester, MN, in 2007.

Treatment	Rate	Giant Foxtail Control					Yield
		5/30	6/4	6/11	6/28	8/8	
	(rate/A)	(%)					(bu/A)
Untreated Check		0	0	0	0	0	2
PRE/ POST II							
Resolve / Laudis + Aatrex + COC + UAN 28%	1 oz / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	91	93	96	94	98	82
Resolve + Aatrex / Laudis + MSO + UAN 28%	1 oz + 26 fl oz / 3 fl oz + 1% v/v + 1.5 qt	78	93	96	98	98	66
Bicep Lite II Mag / Callisto + Aatrex + COC + UAN 28%	2 qt / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	96	95	96	93	99	71
Define + Resolve / Laudis + Aatrex + COC + UAN 28%	12 fl oz + 1 oz / 3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	89	92	98	97	99	79
POST I							
Laudis + Accent + MSO + UAN 28%	3 fl oz + 0.33 oz + 1% v/v + 1.5 qt	78	89	88	71	97	46
Laudis + MSO + UAN 28%	3 fl oz + 1% v/v + 1.5 qt	88	89	87	73	93	55
Laudis + Aatrex + COC + UAN 28%	3 fl oz + 16 fl oz + 1% v/v + 1.5 qt	95	95	92	81	97	50
POST II							
Laudis + Liberty + AMS	2 fl oz + 32 fl oz + 1.7 lb	83	97	91	80	97	60
Liberty + Aatrex + AMS	32 fl oz + 16 fl oz + 1.7 lb	83	98	94	81	97	54
Laudis + Roundup Original Max + AMS	3 fl oz + 22 fl oz + 1.7 lb	21	98	94	86	98	60
Roundup Original Max + Aatrex AMS	22 fl oz + 16 fl oz + 1.7 lb	15	98	95	93	98	54
LSD (P=0.10)		4	4	3	4	3	24