

2014 Evaluation of Acuron and A20540 Herbicide Performance in Field Corn in Rochester, MN.

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The objective of this trial was to evaluate the performance of Acuron herbicide for weed control in field corn in southeastern Minnesota. The research site was a Lawler loam series with a pH of 6.7, O.M. of 2.2%, and soil test P and K levels of 38 ppm and 121 ppm, respectively. Spring fertilizer was broadcast on April 28, 2014 ahead of planting at a rate of 119-18-149-24 (N-P-K-S). The field was spring, disked and field cultivated once prior to planting. The previous crop was soybean. The corn hybrid, Dekalb DKC 53-56 RIB, was planted on May 08, 2014 at a depth of 1.5 inches in 30 inch rows at a rate of 32,000 seeds per acre. A randomized complete block design was used with three replications. Preemergence (PRE) treatments were applied with a tractor-mounted sprayer delivering 15 gpa at 40 psi using TTI 11015 spray tips. Evaluations of the plots were taken on May 30, June 9 and 18, July 01, 2014. The center two rows of each plot were machine harvested on October 29, 2014. Application dates, environmental conditions, and weed stages can be found in Table 1. Performance ratings for control of giant ragweed, common lambsquarters, common waterhemp, and grass, plus crop injury can be found in Tables 2 through 6, respectively. (University of Minnesota Extension Regional Office, Rochester)

Table 1. Application timing, plant stage, and environmental conditions.

Date	5/08
Treatment	PRE
Temperature (F)	
Air	63
Soil	63
Relative Humidity (%)	64
Wind (mph)	21 SW
Soil Moisture	Normal
Rainfall after each application (inch)	
Week 1	1.63
Week 2	0.37
Week 3	0.03

Table 2. Performance of herbicide systems for giant ragweed control in field corn on May 30, June 9 and 18, and July 1, and grain yield at 15% moisture at Rochester, MN, in 2014.

Treatment	Rate (rate/A)	Giant Ragweed Control				Yield (bu/A)
		5/30	6/09	6/18	7/01	
		(% Control)				
Untreated Check		0	0	0	0	13 e
PRE						
A20540	2.25 qt/a	91	95	95	95	192 ab
ZEMAX	2.25 qt/a	91	93	94	93	180 ab
ACURON	3 qt/a	95	98	97	97	178 ab
SURESTART	2.5 qt/a	91	86	81	83	108 d
CORVUS	4.5 fl oz/a	91	91	94	91	181 ab
INSTIGATE	6 oz wt/a	89	92	93	89	202 a
VERDICT	14 fl oz/a	93	91	90	85	150 c
LSD (P=0.10)		2	2	1	3	(P=0.20) 16

Table 3. Performance of herbicide systems for common lambsquarters control in field corn on May 30, June 9 and 18, and July 1, and grain yield at 15% moisture at Rochester, MN, in 2014.

Treatment	Rate (rate/A)	Common Lambsquarters Control				Yield (bu/A)
		5/30	6/09	6/18	7/01	
		(% Control)				
Untreated Check		0	0	0	0	13 e
PRE						
A20540	2.25 qt/a	99	99	99	99	192 ab
ZEMAX	2.25 qt/a	99	99	99	99	180 ab
ACURON	3 qt/a	99	99	99	99	178 ab
SURESTART	2.5 qt/a	99	99	99	99	108 d
CORVUS	4.5 fl oz/a	99	99	99	99	181 ab
INSTIGATE	6 oz wt/a	99	99	99	99	202 a
VERDICT	14 fl oz/a	99	99	99	99	150 c
LSD (P=0.10)		0	0	0	0	(P=.20) 16

Table 4. Performance of herbicide systems for common waterhemp control in field corn on May 30, June 9 and 18, and July 1, and grain yield at 15% moisture at Rochester, MN, in 2014.

Treatment	Rate	Common Waterhemp Control				Yield
		5/30	6/09	6/18	7/01	
	(rate/A)	(% Control)				(bu/A)
Untreated Check		0	0	0	0	13 e
PRE						
A20540	2.25 qt/a	99	99	99	98	192 ab
ZEMAX	2.25 qt/a	99	99	99	99	180 ab
ACURON	3 qt/a	99	99	99	99	178 ab
SURESTART	2.5 qt/a	99	99	99	94	108 d
CORVUS	4.5 fl oz/a	99	99	98	95	181 ab
INSTIGATE	6 oz wt/a	99	99	99	96	202 a
VERDICT	14 fl oz/a	99	99	99	96	150 c
LSD (P=0.10)		0	0	1	2	(P=0.20) 16

Table 5. Performance of herbicide systems for grass control in field corn on May 30, June 9 and 18, and July 1, and grain yield at 15% moisture at Rochester, MN, in 2014.

Treatment	Rate	Grass Control				Yield
		5/30	6/09	6/18	7/01	
	(rate/A)	(% Control)				(bu/A)
Untreated Check		0	0	0	0	13 e
PRE						
A20540	2.25 qt/a	99	99	99	99	192 ab
ZEMAX	2.25 qt/a	99	99	99	99	180 ab
ACURON	3 qt/a	99	99	99	99	178 ab
SURESTART	2.5 qt/a	99	99	99	96	108 d
CORVUS	4.5 fl oz/a	99	99	97	96	181 ab
INSTIGATE	6 oz wt/a	99	99	97	97	202 a
VERDICT	14 fl oz/a	99	98	98	97	150 c
LSD (P=0.10)		0	1	1	2	(P=0.20) 16

Table 6. Crop response to herbicide systems in field corn on May 30, June 9 and 18, and July 1, and grain yield at 15% moisture at Rochester, MN, in 2014.

Treatment	Rate	Injury				Yield
		5/30	6/09	6/18	7/01	
	(rate/A)	(% Injured)				(bu/A)
Untreated Check		0	0	0	0	13 e
PRE						
A20540	2.25 qt/a	0	0	0	0	192 ab
ZEMAX	2.25 qt/a	0	0	0	0	180 ab
ACURON	3 qt/a	0	0	0	0	178 ab
SURESTART	2.5 qt/a	0	0	0	0	108 d
CORVUS	4.5 fl oz/a	0	0	0	0	181 ab
INSTIGATE	6 oz wt/a	0	0	0	0	202 a
VERDICT	14 fl oz/a	0	0	0	0	150 c
LSD (P=0.10)		0	0	0	0	(P=0.20) 16