

Evaluation of Rimsulfuron and Nicosulfuron Programs Plus Mesotrione for Weed Control in Field Corn in 2009

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The objective of this trial was to evaluate the performance of rimsulfuron and nicosulfuron programs plus mesotrione for weed control in 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 37 ppm and 115 ppm, respectively. Spring fertilizer was broadcast ahead of planting on April 17th at a rate of 126-35-120-24 (N-P-K-S). The area was side dressed with an additional 30 b/A of N on June 15. The field was spring disked and field cultivated once prior to planting. The corn hybrid, Pioneer 35F44, was planted on May 8th, 2009, at a depth of 1.5 inches in 30 inch rows at 35,000 seeds per acre. A randomized complete block design was used with four replications. Preemergence (PRE) and postemergence (POST) 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 28, June 9, 16, and 24, and August 27. Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were machine harvested on November 13, 2009. (University of Minnesota Extension Regional Office, Rochester, MN).

Date	5/8	6/4
Treatment	PRE	POST I
Temperature (F)		
Air	69	73
Soil	56	78.6
Relative Humidity (%)	35	17
Wind (mph)	7	8
Soil Moisture	Inadequate	Inadequate
Corn		
Stage		V4
Height (inch)	6	6
Common Lambsquarters		
Weed density (ft ²)	12.4	
Height (inch)	3.1	2.4
Common Waterhemp		
Weed density (ft ²)	1.4	
Height (inch)	1.8	1.5
Grass		
Weed density (ft ²)	20.8	
Height (inch)	2.9	3.5
Rainfall after each application		
Week 1	0.61	1.76
Week 2	0	1.24
Week 3	1.95	0.15

Table 1. Performance of herbicide systems for common lambsquarters control in field corn on May 28, June 16 and 24, and August 27 at Rochester, MN, in 2009.

Treatment	Rate	Common Lambsquarters Control				Yield
		5/28	6/16	6/24	8/27	
	(rate/A)	(%)				(bu/A)
Untreated Check		0	0	0	0	22 c
PRE/POST I						
Cinch ATZ / Rimsulfuron + Safener + Mesotrione + COC + AMS	1 qt/a / 0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a	63	99	99	99	183 a
POST I						
Rimsulfuron + Safener + Mesotrione + COC + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a		76	94	99	157 ab
Rimsulfuron + Safener + Mesotrione + Roundup PowerMax + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 22 fl oz/a + 2 lb/a		99	99	99	158 ab
Rimsulfuron + Safener + Mesotrione + Ignite 280 + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 22 fl oz/a + 2 lb/a		97	99	99	182 a
Rimsulfuron + Safener + Mesotrione + Aatrex 90 DF + COC + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 8 oz wt/a + 1% v/v + 2 lb/a		99	99	99	165 ab
Rimsulfuron + Thifensulfuron + Safener + Mesotrione + COC + AMS	0.25 oz/a+ 0.05 oz/a+ 0.115 oz/a+ 1.25 oz/a+ 1% v/v + 2 lb/a		80	94	98	162 ab
Accent + Mesotrione + COC + AMS	0.5 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a		74	93	99	145 b
Steadfast + Safener + Mesotrione + COC + AMS	0.5625 oz/a + 0.125 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a		80	95	99	159 ab
	LSD (P=0.10)		3	2	1	30

Table 2. Performance of herbicide systems for common waterhemp control in field corn on May 28, June 16 and 24, and August 27 at Rochester, MN, in 2009.

Treatment	Rate	Common Waterhemp Control				Yield
		5/28	6/16	6/24	8/27	
	(rate/A)	(%)				(bu/A)
Untreated Check		0	0	0	0	22 c
PRE/POST I						
Cinch ATZ / Rimsulfuron + Safener + Mesotrione + COC + AMS	1 qt/a / 0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a	63	99	99	99	183 a
POST I						
Rimsulfuron + Safener + Mesotrione + COC + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a		76	87	95	157 ab
Rimsulfuron + Safener + Mesotrione + Roundup PowerMax + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 22 fl oz/a + 2 lb/a		99	99	95	158 ab
Rimsulfuron + Safener + Mesotrione + Ignite 280 + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 22 fl oz/a + 2 lb/a		99	99	98	182 a
Rimsulfuron + Safener + Mesotrione + Aatrex 90 DF + COC + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 8 oz wt/a + 1% v/v + 2 lb/a		99	99	99	165 ab
Rimsulfuron + Thifensulfuron + Safener + Mesotrione + COC + AMS	0.25 oz/a+ 0.05 oz/a+ 0.115 oz/a+ 1.25 oz/a+ 1% v/v + 2 lb/a		80	91	96	162 ab
Accent + Mesotrione + COC + AMS	0.5 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a		74	85	96	145 b
Steadfast + Safener + Mesotrione + COC + AMS	0.5625 oz/a + 0.125 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a		80	90	96	159 ab
	LSD (P=0.10)		3	2	3	30

Table 3. Performance of herbicide systems for grass control in field corn on May 28 at Rochester, MN, in 2009.

Treatment	Rate (rate/A)	Grass Control				Yield (bu/A)
		5/28	6/16	6/24	8/27	
Untreated Check		0	0	0	0	22 c
PRE/POST I						
Cinch ATZ / Rimsulfuron + Safener + Mesotrione + COC + AMS	1 qt/a / 0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a	90	89	88	86	183 a
POST I						
Rimsulfuron + Safener + Mesotrione + COC + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a		73	72	65	157 ab
Rimsulfuron + Safener + Mesotrione + Roundup PowerMax + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 22 fl oz/a + 2 lb/a		99	98	89	158 ab
Rimsulfuron + Safener + Mesotrione + Ignite 280 + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 22 fl oz/a + 2 lb/a		96	95	78	182 a
Rimsulfuron + Safener + Mesotrione + Aatrex 90 DF + COC + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 8 oz wt/a + 1% v/v + 2 lb/a		78	75	69	165 ab
Rimsulfuron + Thifensulfuron + Safener + Mesotrione + COC + AMS	0.25 oz/a + 0.05 oz/a + 0.115 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a		75	72	68	162 ab
Accent + Mesotrione + COC + AMS	0.5 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a		76	74	65	145 b
Steadfast + Safener + Mesotrione + COC + AMS	0.5625 oz/a + 0.125 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a		74	72	69	159 ab
	LSD (P=0.10)		4	6	5	30

Table 4. Crop response to herbicide systems in field corn on June 9 and 16 at Rochester, MN, in 2009.

Treatment	Rate (rate/A)	Injury		Yield (bu/A)
		6/9	6/16	
Untreated Check		12	0	22 c
PRE/POST I				
Cinch ATZ / Rimsulfuron + Safener + Mesotrione + COC + AMS	1 qt/a / 0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a	20	6	183 a
POST I				
Rimsulfuron + Safener + Mesotrione + COC + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a	18	6	157 ab
Rimsulfuron + Safener + Mesotrione + Roundup PowerMax + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 22 fl oz/a + 2 lb/a	11	9	158 ab
Rimsulfuron + Safener + Mesotrione + Ignite 280 + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 22 fl oz/a + 2 lb/a	20	9	182 a
Rimsulfuron + Safener + Mesotrione + Aatrex 90 DF + COC + AMS	0.3 oz/a + 0.15 oz/a + 1.25 oz/a + 8 oz wt/a + 1% v/v + 2 lb/a	32	8	165 ab
Rimsulfuron + Thifensulfuron + Safener + Mesotrione + COC + AMS	0.25 oz/a + 0.05 oz/a + 0.115 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a	20	7	162 ab
Accent + Mesotrione + COC + AMS	0.5 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a	16	8	145 b
Steadfast + Safener + Mesotrione + COC + AMS	0.5625 oz/a + 0.125 oz/a + 1.25 oz/a + 1% v/v + 2 lb/a	19	8	159 ab
	LSD (P=0.10)	11	3	30