

Evaluation of Corn Herbicides on Roundup Ready Corn

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Objective

To evaluate the effectiveness of herbicide programs in Roundup Ready Corn.

Background

Cooperator:	Tom Weiler	Fertilizer:	10-34-0 (12 gal/A)
County:	Morrow		0-0-60 (200 lbs/A)
Nearest Town:	Chesterville		180 lbs/A nitrogen sidedressed
Soil Type:	Sloan	Variety:	DeKalb 589RR
Tillage:	Conventional	Planting Date:	May 3, 1999
Previous Crop:	Soybeans	Planting Rate:	27,600 seeds/A
Drainage:	Systematic tile	Harvest Date:	October 7, 1999
Soil Test:	pH 7.0, P 23 ppm, K 154 ppm		

Methods

Nine different herbicide treatments and an untreated control were replicated four times in a randomized complete block design. Individual plot size was 10 feet wide x 40 feet in length. The preemergence and postemergence applications were applied on May 8 and June 8, respectively. Treatments were applied with a CO₂ pressurized backpack sprayer. The plots were visually evaluated for control of annual grasses, common lambsquarters, and giant ragweed on August 9. The weed pressure was moderate to heavy at this site. The weed control ratings for each treatment were averaged across the four replications.

Results

Herbicide Treatment ^{bd}	Rate/A	Treatment Type ^d	Weed Control Rating ^c (%)			Herbicide Cost (\$/A)	Total Costs ^a (\$/A)
			Annual Grass	Lambs-quarters	Giant Ragweed		
Roundup Ultra	1 qt	POST	100a	99a	98a	9.55	14.26
AMS	17#/100 gal					0.71	
Balance	1 oz.	PRE	100a	98a	98a	7.99	26.04
Aatrex	0.75 lb.					2.18	
Roundup Ultra	1.5 pt.	POST	100a	98a	98a	7.16	26.04
AMS	17#/100 gal					0.71	
Balance	2 oz.	PRE	84b	88ab	69b	15.98	28.26
Aatrex	1.5 lb					4.35	
Princep	1.0 lb					3.93	
Balance	1.5 oz	PRE	89b	97a	100a	11.98	31.9
Aatrex	0.75 lb					2.18	
Distinct	6.0 oz	POST	89b	97a	100a	13.12	31.9
Surfactant	0.25% v/v					0.45	
28% Nitrogen	1.25% v/v					0.17	
Balance	2.5 oz	PRE	84b	85ab	76ab	19.98	23.98
Harness Xtra	2.4 qt	PRE	92ab	74b	59b	24.73	28.73
Axiom	18 oz	PRE	85b	80b	59b	18.6	26.95
Aatrex	1.5 lb					4.35	
Epic	12 oz	PRE	88b	88ab	71b	24	32.35
Aatrex	1.5 lb					4.35	
Balance	1.0 oz	PRE				7.99	
Roundup Ultra	1.5 pt	POST	99a	100a	98a	7.16	19.86
AMS	17#/100 gal					0.71	
LSD (0.05)			9.3	16.4	24.2		
CV			7.10%	12.50%	20.50%		

Treatment means followed by the same letter are not significantly different at P = 0.05.

^a Application cost of \$4.00/acre is included per treatment. Prices used were in-season retail prices.

^b Preemergence treatments were applied on May 8 and received little rainfall during May. Rainfall received was: May 3 - 17 = .5, May 18 - 31 = 1.95. The postemergence treatments were made on June 8. G. Ragweed was 6-10 inches tall and annual grasses (mostly giant foxtail, but some barnyardgrass and fall panicum) were 4 inches. Corn was in the 2-3 collar stage.

^c Weed control ratings equal percent of weeds controlled relative to untreated check. It is the average of four replications.

^d Abbreviations: AMS = ammonium sulfate, PRE = preemergence, POST = postemergence.

Summary and Notes

Preemergence treatments received little rainfall during May. Rainfall received from May 3 - 17 totaled 0.5 inch. This was not enough rainfall to properly activate the preemergence treatments, thus causing them to provide ineffective weed control. All postemergence treatments provided excellent weed control, except Distinct for annual grass control. The preemergence herbicides that were followed by Roundup Ultra provided little benefit to weed control achieved under this year's conditions. With the dry weather after the total postemergence application, these treatments provided excellent control that is not always expected when using a non-residual herbicide in corn. The total postemergence Roundup Ultra treatments had the lowest herbicide cost. However, many producers are concerned about the additional cost of the technology fee associated with Roundup Ready corn.

For additional information, contact:

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