

Evaluation of Resolve® herbicide programs in field corn at Rochester, MN in 2006.

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The objective of this trial was to evaluate Resolve® herbicide programs for weed control 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 61 ppm and 204 ppm, respectively. Spring fertilizer was spread ahead of planting on April 20, at a rate of 109-19-85-24 (N-P-K-S). The area was side dressed with an additional 30 lb/A of N on June 7. The field was chisel plowed, spring disked, and field cultivated once prior to planting. The corn hybrid NK N38B4, was planted on April 24, 2006 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) 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 23, May 30, June 9, and June 27. Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were harvested on November 2, 2006.

Date	April 25	May 30
Treatment	PRE	POST
Temperature (F)		
air	50	74
soil	57.6	77.4
Relative Humidity (%)	32	48
Wind (mph)	14	13
Soil moisture	Adequate	dry
Corn		
stage	--	4 collar
height (inch)	--	8
Giant Ragweed		
weed density (ft ²)	--	3.8
height (inch)	--	8.4
Common Lambsquarters		
weed density (ft ²)	--	8.5
height (inch)	--	3.3
Common Waterhemp		
weed density (ft ²)	--	195
height (inch)	--	2.8
Woolly Cupgrass		
weed density (ft ²)	--	59.6
height (inch)	--	3.6
Rainfall after each application (inch)		
week 1	1.10	0.25
week 2	0.08	2.53
week 3	1.31	0.10

CONCLUSIONS

Resolve® herbicide has been positioned as both a setup partner for sequential pre/post herbicide programs and as a tank mix partner with residual activity in postemergence programs. In this trial we evaluated both Resolve® weed control strategies for their effectiveness.

Preemergence application of Resolve® plus atrazine (90 WG) applied at the rate of 1 oz + 12 oz per acre were compared to Cinch® applied at 1 pt per acre, and Harness Xtra® applied at the rate of 2.5 pts per acre. The Resolve® + atrazine treatment (5/30 rating date) provided similar control of giant ragweed, 79 compared to 76%, and common lambsquarters, 99 compared to 98%, to that of Harness Xtra®. Cinch® gave no control of giant ragweed and only 36% control of common lambsquarters. The Resolve® + atrazine and the Cinch® treatments provided similar woolly cupgrass control, 71 and 70% respectively; however, both provided significantly lower control than the Harness Xtra® treatment at 90% control. Resolve® + atrazine also gave significantly lower common waterhemp control to that of Cinch® and Harness Xtra®, 73, 81, and 98%, respectively. Sequential applications of Roundup WeatherMax® to the Resolve® + atrazine and Harness Xtra® treatments resulted in similar final weed control (6/27 rating date) and grain yield. The exception was control of common waterhemp, where the Harness Xtra® program provided a slight, 9 percent, advantage in control.

Resolve® + atrazine (90 WG) applied postemergence as a tank mix partner with Roundup WeatherMax® (6/27 rating date) provided weed control advantages to that of Roundup WeatherMax® alone for giant ragweed, 97 compared to 89%, common lambsquarters, 95 compared to 80%, and woolly cupgrass, 89 compared to 69%. No weed control advantage was observed for common waterhemp control. Resolve® + atrazine + Roundup WeatherMax® provided similar control of giant ragweed, common lambsquarters, and common waterhemp as the Steadfast® + Callisto® + atrazine and the Lumax® + Accent® + Harmony GT® programs; however, it provided superior woolly cupgrass control, 89 compared to 51 and 35%, respectively. (University of Minnesota Extension Service, Regional Center, Rochester, MN).

Table. Performance of Resolve® herbicide programs for weed control in field corn on May 23, May 30, June 9, and June 27 at Rochester, MN in 2006.

Treatment	Rate	Giant ragweed control				Common lambsquarters control				Common waterhemp control				Woolly cupgrass control				Corn yield
		5/23	5/30	6/9	6/27	5/23	5/30	6/9	6/27	5/23	5/30	6/9	6/27	5/23	5/30	6/9	6/27	
	(rate/A)	(%)				(%)				(%)				(%)				(bu/A)
PRE/POST																		
Cinch / Steadfast + Callisto + atrazine + Agri-Dex COC + AMS	1 pt / 0.75 oz + 2 oz + 12 oz + 1% v/v + 2 lb	0	1	93	98	35	36	99	97	98	81	98	94	64	70	88	79	157
Harness Xtra + Roundup WeatherMax + AMS	2.5 pt + 22 oz + 2 oz	66	76	98	97	99	98	99	99	99	98	98	96	80	90	97	91	169
Resolve + atrazine / Roundup WeatherMax + AMS	1 oz + 12 oz / 22 oz + 2 lb	76	79	97	95	99	99	99	99	91	73	98	87	58	71	98	81	165
POST																		
Steadfast + Callisto + atrazine + Agri-Dex COC + AMS	0.75 oz + 2 oz + 12 oz + 1% v/v + 2 lb	0	0	91	98	0	0	97	98	0	0	57	71	0	0	71	51	140
Lumax + Accent + Harmony GT + Adspray 90 NIS + AMS	2 pt + 0.3375 oz + 0.025 oz + 0.25% v/v + 2 lb	0	0	91	96	0	0	95	99	0	0	50	67	0	0	66	35	113
Roundup WeatherMax + AMS	22 oz + 2 lb	0	0	70	89	0	0	94	80	0	0	90	64	0	0	96	69	162
Roundup WeatherMax + Resolve + atrazine + AMS	22 oz + 1 oz + 12 oz + 2 lb	0	0	74	97	0	0	93	95	0	0	87	66	0	0	96	89	140
Untreated		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
LSD (P=0.10)		3	3	4	4	2	2	2	4	1	2	5	7	5	3	2	12	25