

2013 Evaluation of Weed Management Systems in Field Corn in Rochester, MN.

Breitenbach, Fritz, R., Lisa M. Behnken, Jeffrey R. Gunsolus, and Thomas Hoverstad

The objective of this trial was to evaluate the performance of herbicide programs for weed control in field corn in southeastern Minnesota. The research site was a Lawler loam series with a pH of 6.4, O.M. of 2.3%, and soil test P and K levels of 38 ppm and 97 ppm, respectively. Spring fertilizer was broadcast on April 26, 2013 ahead of planting at a rate of 130-26-120-24 (N-P-K-S). The field was spring, disked and field cultivated once prior to planting. The corn hybrid, Pioneer 9917AMX, was planted on May 14, 2013 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 four replications. Preemergence (PRE) and postemergence (POST) treatments were applied with a tractor-mounted sprayer delivering 15 gpa at 32 psi using TeeJet 11002 air induction flat spray tips for PRE treatments, and Turbo TeeJet 11002 wide angle flat spray tip nozzles for POST applications. Evaluations of the plots were taken on June 7 and 17, July 5, and September 25, 2013. The center two rows of each plot were machine harvested on November 8, 2013. Application dates, environmental conditions, and weed stages can be found in Table 1. Performance ratings for giant ragweed control, common lambsquarters control, common waterhemp control, grass control, and plant 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	5/14	6/3	6/10	6/19	6/27
Treatment	PRE	POST I	POST II	POST III	POST IV
Temperature (F)					
Air	78	65	74	81	80
Soil	59.9	68.8	71.0	86.2	73.9
Relative Humidity (%)	44	46	61	45	62
Wind (mph)	8	0	3	18	14
Soil Moisture	Adequate	Excessive	Adequate	Dry	Adequate
Corn					
Stage		V2	V3	V5	V7
Height (inch)		3.0	3.5	13.0	19.0
Giant Ragweed					
Weed density (ft ²)		2.6		1.0	
Height (inch)		2.1	2.3	8.5	4.3
Common Lambsquarters					
Weed density (ft ²)		5.6		6.9	
Height (inch)		0.5	0.4	2.8	2.0
Common Waterhemp					
Weed density (ft ²)		8.5		0.8	
Height (inch)		0.5	0.4	2.8	0.0
Giant Foxtail					
Weed density (ft ²)		5.1		10.8	
Height (inch)		0.8	0.7	7.0	0.0
Rainfall after each application (inch)					
Week 1	4.67	0.70	0.43	5.25	0.44
Week 2	0.95	0.43	3.65	0.44	0.35
Week 3	2.82	3.65	2.04	0.35	1.07

Table 2. Performance of herbicide systems for giant ragweed control in field corn on June 7 and 17, July 5, and September 25, and grain yield at 13% moisture at Rochester, MN, in 2013.

Treatment	Rate (rate/A)	Giant Ragweed Control				Yield (bu/A)
		6/7	6/17	7/5	9/25	
		Giant Ragweed Control (%)				
Untreated Check		0	0	0	0	84.4
Weed Free		100	100	100	100	134.0
PRE/POST III (V4- V5 corn)						
Zemax + Halex GT + NIS + N-Pa-K-AMS	1 qt/a + 3.6 pt/a + 0.25% v/v + 3 qt/a	66	66	98	99	145.3
Harness + Laudis + Destiny HC + N-Pa-K-AMS	1.75 pt/a + 3.6 oz/a + 0.50% v/v + 2 qt/a	60	55	97	99	151.9
Corvus / Laudis + Roundup Power MAX + Desitny HC + N-Pa-K-AMS	5.6 fl oz/a / 3 fl oz/a + 22 fl oz/a + 0.5% v/v + 2 qt/a	86	85	99	99	152.4
BreakFree / Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit Extra + NIS + N-Pa-K-AMS	1.5 pt/a / 4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	61	63	97	98	139.8
BreakFree / Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit Extra + NIS + N-Pa-K-AMS	2.5 pt/a / 4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	66	74	95	97	139.4
Instigate (rimsulfuron + mesotrione) + Breakfree ATZ Lite + Abundit Extra + NIS + N-Pa-K-AMS	5.25 oz/a (0.875 oz/a + 4.375 oz/a) + 1.5 qt/a + 32 fl oz/a + 0.25% v/v + 3 qt/a	92	94	97	98	143.7
Harness / Roundup WeatherMAX + N-Pa-K-AMS	1.25 pt/a / 32 fl oz/a + 3 qt/a	61	53	93	95	138.5
Zemax / Touchdown Total + N-Pa-K-AMS	1.6 qt/a / 28 fl oz/a + 3 qt/a	79	80	96	94	150.2
Surestart / Durango + N-Pa-K-AMS	2 pt/a / 24 fl oz/a + 3 qt/a	78	76	94	97	145.6
Surestart / Durango + N-Pa-K-AMS	2.5 pt/a / 24 fl oz/a + 3 qt/a	87	83	96	96	136.7
Surestart / Surestart / Durango + N-Pa-K-AMS	2 pt/a / 1.5 pt/a / 24 fl oz/a + 3 qt/a	75	80	96	97	136.8
Verdict / Roundup Power MAX + NIS + N-Pa-K-AMS	18 fl oz/a / 22 fl oz/a + 0.25% v/v + 3 qt/a	75	70	93	95	146.0
Verdict / Roundup Power MAX + Status + NIS + N-Pa-K-AMS	16 fl oz/a / 32 fl oz/a + 2.5 oz/a + 0.25% v/v + 3 qt/a	74	71	98	98	140.5
Anthem + F9387 / Roundup PowerMAX + N-Pa-K-AMS	10 fl oz/a / 3 fl oz/a + 32 fl oz/a + 3 qt/a	85	82	97	96	130.1
Harness / Impact + Roundup PowerMAX + Destiny HC + N-Pa-K-AMS	1.25 pt/a / 0.75 fl oz/a + 32 fl oz/a + 0.5% v/v + 3 qt/a	55	49	98	99	146.2
POST I (1 inch weeds) / POST III (4 inch weed regrowth)						
Roundup WeatherMAX + N-Pa-K-AMS / Roundup WeatherMAX + N-Pa-K-AMS	32 oz/a + 3 qt/a / 32 oz/a + 3 qt/a	0	85	98	97	140.8
POST II (2-4 inch weeds) / POST IV (2-4 in regrowth)						
Capreno + Roundup Power MAX + N-Pa-K-AMS / Laudis + Destiny HC + N-Pa-K-AMS	3 fl oz/a + 18 fl oz/a + 2 qt/a / 3 oz/a + 0.5% v/v + 2 qt/a	0	88	98	99	154.6
POST II (2-4 inch weeds)						
Warrant + Impact + Roundup PowerMAX + Destiny HC + N-Pa-K-AMS	3 pt/a + 0.75 fl oz/a + 32 fl oz/a + 0.5% v/v + 3 qt/a	0	97	97	96	143.3
F9387 + Roundup PowerMAX + NIS + N-Pa-K-AMS	3 oz/a + 32 oz/a + 0.25% v/v + 3 qt/a	0	98	97	99	148.9
Halex GT + Atrazine + NIS + N-Pa-K-AMS	3.6 pt/a + 1 pt/a + 0.25% v/v + 3 qt/a	0	99	99	99	140.9
SureStart + Durango + N-Pa-K-AMS	2 pt/a + 24 fl oz/a + 3 qt/a	0	93	95	96	137.4
Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit S + NIS + N-Pa-K-AMS	4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	0	81	98	98	153.6
LSD (P=0.10)		13	13	3	3	17.2

Table 3. Performance of herbicide systems for common lambsquarters control in field corn on June 7 and 17, July 5, and September 25, and grain yield at 13% moisture at Rochester, MN, in 2013.

Treatment	Rate (rate/A)	Common Lambsquarters Control				Yield (bu/A)
		6/7	6/17	7/5	9/25	
		(%)				
Untreated Check		0	0	0	0	84.4
Weed Free		100	100	100	100	134.0
PRE/POST III (V4 – V5 corn)						
Zemax + Halex GT + NIS + N-Pa-K-AMS	1 qt/a + 3.6 pt/a + 0.25% v/v + 3 qt/a	99	99	99	99	145.3
Harness + Laudis + Destiny HC + N-Pa-K-AMS	1.75 pt/a + 3.6 oz/a + 0.50% v/v + 2 qt/a	99	99	99	99	151.9
Corvus / Laudis + Roundup Power MAX + Desitny HC + N-Pa-K-AMS	5.6 fl oz/a / 3 fl oz/a + 22 fl oz/a + 0.5% v/v + 2 qt/a	99	99	99	99	152.4
BreakFree / Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit Extra + NIS + N-Pa-K-AMS	1.5 pt/a / 4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	99	95	99	99	139.8
BreakFree / Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit Extra + NIS + N-Pa-K-AMS	2.5 pt/a / 4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	99	98	99	99	139.4
Instigate (rimsulfuron + mesotrione) + Breakfree ATZ Lite + Abundit Extra + NIS + N-Pa-K-AMS	5.25 oz/a (0.875 oz/a + 4.375 oz/a) + 1.5 qt/a + 32 fl oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	143.7
Harness / Roundup WeatherMAX + N-Pa-K-AMS	1.25 pt/a / 32 fl oz/a + 3 qt/a	99	93	91	95	138.5
Zemax / Touchdown Total + N-Pa-K-AMS	1.6 qt/a / 28 fl oz/a + 3 qt/a	99	99	97	98	150.2
Surestart / Durango + N-Pa-K-AMS	2 pt/a / 24 fl oz/a + 3 qt/a	99	99	97	98	145.6
Surestart / Durango + N-Pa-K-AMS	2.5 pt/a / 24 fl oz/a + 3 qt/a	99	99	96	99	136.7
Surestart / Surestart / Durango + N-Pa-K-AMS	2 pt/a / 1.5 pt/a / 24 fl oz/a + 3 qt/a	99	99	99	99	136.8
Verdict / Roundup Power MAX + NIS + N-Pa-K-AMS	18 fl oz/a / 22 fl oz/a + 0.25% v/v + 3 qt/a	99	96	94	94	146.0
Verdict / Roundup Power MAX + Status + NIS + N-Pa-K-AMS	16 fl oz/a / 32 fl oz/a + 2.5 oz/a + 0.25% v/v + 3 qt/a	99	96	94	93	140.5
Anthem + F9387 / Roundup PowerMAX + N-Pa-K-AMS	10 fl oz/a / 3 fl oz/a + 32 fl oz/a + 3 qt/a	99	99	97	96	130.1
Harness / Impact + Roundup PowerMAX + Destiny HC + N-Pa-K-AMS	1.25 pt/a / 0.75 fl oz/a + 32 fl oz/a + 0.5% v/v + 3 qt/a	99	95	97	99	146.2
POST I (1 inch weeds) / POST III (4 inch weed regrowth)						
Roundup WeatherMAX + N-Pa-K-AMS / Roundup WeatherMAX + N-Pa-K-AMS	32 oz/a + 3 qt/a / 32 oz/a + 3 qt/a	0	95	94	98	140.8
POST II (2-4 inch weeds) / POST IV (2-4 in regrowth)						
Capreno + Roundup Power MAX + N-Pa-K-AMS / Laudis + Destiny HC + N-Pa-K-AMS	3 fl oz/a + 18 fl oz/a + 2 qt/a / 3 oz/a + 0.5% v/v + 2 qt/a	0	99	99	99	154.6
POST II (2-4 inch weeds)						
Warrant + Impact + Roundup PowerMAX + Destiny HC + N-Pa-K-AMS	3 pt/a + 0.75 fl oz/a + 32 fl oz/a + 0.5% v/v + 3 qt/a	0	99	99	99	143.3
F9387 + Roundup PowerMAX + NIS + N-Pa-K-AMS	3 oz/a + 32 oz/a + 0.25% v/v + 3 qt/a	0	99	99	99	148.9
Halex GT + Atrazine + NIS + N-Pa-K-AMS	3.6 pt/a + 1 pt/a + 0.25% v/v + 3 qt/a	0	99	99	99	140.9
SureStart + Durango + N-Pa-K-AMS	2 pt/a + 24 fl oz/a + 3 qt/a	0	99	99	99	137.4
Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit S + NIS + N-Pa-K-AMS	4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	0	99	99	99	153.6
LSD (P=0.10)		0	2	2	2	17.2

Table 4. Performance of herbicide systems for common waterhemp control in field corn on June 7 and 17, July 5, and September 25, and grain yield at 13% moisture at Rochester, MN, in 2013.

Treatment	Rate (rate/A)	Common Waterhemp Control				Yield (bu/A)
		6/7	6/17	7/5	9/25	
		%				
Untreated Check		0	0	0	0	84.4
Weed Free		100	100	100	100	134.0
PRE/POST III (V4 – V5 corn)						
Zemax + Halex GT + NIS + N-Pa-K-AMS	1 qt/a + 3.6 pt/a + 0.25% v/v + 3 qt/a	99	99	99	99	145.3
Harness + Laudis + Destiny HC + N-Pa-K-AMS	1.75 pt/a + 3.6 oz/a + 0.50% v/v + 2 qt/a	99	99	99	99	151.9
Corvus / Laudis + Roundup Power MAX + Desitny HC + N-Pa-K-AMS	5.6 fl oz/a / 3 fl oz/a + 22 fl oz/a + 0.5% v/v + 2 qt/a	99	99	99	99	152.4
BreakFree / Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit Extra + NIS + N-Pa-K-AMS	1.5 pt/a / 4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	139.8
BreakFree / Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit Extra + NIS + N-Pa-K-AMS	2.5 pt/a / 4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	139.4
Instigate (rimsulfuron + mesotrione) + Breakfree ATZ Lite + Abundit Extra + NIS + N-Pa-K-AMS	5.25 oz/a (0.875 oz/a + 4.375 oz/a) + 1.5 qt/a + 32 fl oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	143.7
Harness / Roundup WeatherMAX + N-Pa-K-AMS	1.25 pt/a / 32 fl oz/a + 3 qt/a	99	99	98	98	138.5
Zemax / Touchdown Total + N-Pa-K-AMS	1.6 qt/a / 28 fl oz/a + 3 qt/a	99	99	99	99	150.2
Surestart / Durango + N-Pa-K-AMS	2 pt/a / 24 fl oz/a + 3 qt/a	99	99	99	99	145.6
Surestart / Durango + N-Pa-K-AMS	2.5 pt/a / 24 fl oz/a + 3 qt/a	99	99	98	99	136.7
Surestart / Surestart / Durango + N-Pa-K-AMS	2 pt/a / 1.5 pt/a / 24 fl oz/a + 3 qt/a	99	99	99	99	136.8
Verdict / Roundup Power MAX + NIS + N-Pa-K-AMS	18 fl oz/a / 22 fl oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	146.0
Verdict / Roundup Power MAX + Status + NIS + N-Pa-K-AMS	16 fl oz/a / 32 fl oz/a + 2.5 oz/a + 0.25% v/v + 3 qt/a	99	99	98	99	140.5
Anthem + F9387 / Roundup PowerMAX + N-Pa-K-AMS	10 fl oz/a / 3 fl oz/a + 32 fl oz/a + 3 qt/a	99	99	99	99	130.1
Harness / Impact + Roundup PowerMAX + Destiny HC + N-Pa-K-AMS	1.25 pt/a / 0.75 fl oz/a + 32 fl oz/a + 0.5% v/v + 3 qt/a	99	99	99	99	146.2
POST I (1 inch weeds) / POST III (4 inch weed regrowth)						
Roundup WeatherMAX + N-Pa-K-AMS / Roundup WeatherMAX + N-Pa-K-AMS	32 oz/a + 3 qt/a / 32 oz/a + 3 qt/a	0	97	97	99	140.8
POST II (2-4 inch weeds) / POST IV (2-4 in regrowth)						
Capreno + Roundup Power MAX + N-Pa-K-AMS / Laudis + Destiny HC + N-Pa-K-AMS	3 fl oz/a + 18 fl oz/a + 2 qt/a / 3 oz/a + 0.5% v/v + 2 qt/a	0	99	99	99	154.6
POST II (2-4 inch weeds)						
Warrant + Impact + Roundup PowerMAX + Destiny HC + N-Pa-K-AMS	3 pt/a + 0.75 fl oz/a + 32 fl oz/a + 0.5% v/v + 3 qt/a	0	99	99	99	143.3
F9387 + Roundup PowerMAX + NIS + N-Pa-K-AMS	3 oz/a + 32 oz/a + 0.25% v/v + 3 qt/a	0	99	99	99	148.9
Halex GT + Atrazine + NIS + N-Pa-K-AMS	3.6 pt/a + 1 pt/a + 0.25% v/v + 3 qt/a	0	99	99	99	140.9
SureStart + Durango + N-Pa-K-AMS	2 pt/a + 24 fl oz/a + 3 qt/a	0	99	99	99	137.4
Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit S + NIS + N-Pa-K-AMS	4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	0	99	99	99	153.6
LSD (P=0.10)		0	1	1	1	17.2

Table 5. Performance of herbicide systems for giant foxtail control in field corn on June 7 and 17 July 5, and September 25, and grain yield at 13% moisture at Rochester, MN, in 2013.

Treatment	Rate (rate/A)	Giant Foxtail Control				Yield (bu/A)
		6/7	6/17	7/5	9/25	
		Giant Foxtail Control (%)				
Untreated Check		0	0	0	0	84.4
Weed Free		100	100	100	100	134.0
PRE/POST III (V4 - V5 corn)						
Zemax + Halex GT + NIS + N-Pa-K-AMS	1 qt/a + 3.6 pt/a + 0.25% v/v + 3 qt/a	99	99	99	99	145.3
Harness + Laudis + Destiny HC + N-Pa-K-AMS	1.75 pt/a + 3.6 oz/a + 0.50% v/v + 2 qt/a	99	99	98	96	151.9
Corvus / Laudis + Roundup Power MAX + Desitny HC + N-Pa-K-AMS	5.6 fl oz/a / 3 fl oz/a + 22 fl oz/a + 0.5% v/v + 2 qt/a	96	97	98	95	152.4
BreakFree / Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit Extra + NIS + N-Pa-K-AMS	1.5 pt/a / 4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	99	99	99	97	139.8
BreakFree / Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit Extra + NIS + N-Pa-K-AMS	2.5 pt/a / 4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	99	99	99	97	139.4
Instigate (rimsulfuron + mesotrione) + Breakfree ATZ Lite + Abundit Extra + NIS + N-Pa-K-AMS	5.25 oz/a (0.875 oz/a + 4.375 oz/a) + 1.5 qt/a + 32 fl oz/a + 0.25% v/v + 3 qt/a	99	99	97	96	143.7
Harness / Roundup WeatherMAX + N-Pa-K-AMS	1.25 pt/a / 32 fl oz/a + 3 qt/a	99	99	90	89	138.5
Zemax / Touchdown Total + N-Pa-K-AMS	1.6 qt/a / 28 fl oz/a + 3 qt/a	99	99	99	97	150.2
Surestart / Durango + N-Pa-K-AMS	2 pt/a / 24 fl oz/a + 3 qt/a	99	99	97	93	145.6
Surestart / Durango + N-Pa-K-AMS	2.5 pt/a / 24 fl oz/a + 3 qt/a	99	99	96	91	136.7
Surestart / Surestart / Durango + N-Pa-K-AMS	2 pt/a / 1.5 pt/a / 24 fl oz/a + 3 qt/a	99	99	99	99	136.8
Verdict / Roundup Power MAX + NIS + N-Pa-K-AMS	18 fl oz/a / 22 fl oz/a + 0.25% v/v + 3 qt/a	99	98	98	92	146.0
Verdict / Roundup Power MAX + Status + NIS + N-Pa-K-AMS	16 fl oz/a / 32 fl oz/a + 2.5 oz/a + 0.25% v/v + 3 qt/a	99	99	97	95	140.5
Anthem + F9387 / Roundup PowerMAX + N-Pa-K-AMS	10 fl oz/a / 3 fl oz/a + 32 fl oz/a + 3 qt/a	99	99	98	95	130.1
Harness / Impact + Roundup PowerMAX + Destiny HC + N-Pa-K-AMS	1.25 pt/a / 0.75 fl oz/a + 32 fl oz/a + 0.5% v/v + 3 qt/a	99	99	96	94	146.2
POST I (1 inch weeds) / POST III (4 inch weed regrowth)						
Roundup WeatherMAX + N-Pa-K-AMS / Roundup WeatherMAX + N-Pa-K-AMS	32 oz/a + 3 qt/a / 32 oz/a + 3 qt/a	0	95	93	90	140.8
POST II (2-4 inch weeds) / POST IV (2-4 in regrowth)						
Capreno + Roundup Power MAX + N-Pa-K-AMS / Laudis + Destiny HC + N-Pa-K-AMS	3 fl oz/a + 18 fl oz/a + 2 qt/a / 3 oz/a + 0.5% v/v + 2 qt/a	0	99	99	97	154.6
POST II (2-4 inch weeds)						
Warrant + Impact + Roundup PowerMAX + Destiny HC + N-Pa-K-AMS	3 pt/a + 0.75 fl oz/a + 32 fl oz/a + 0.5% v/v + 3 qt/a	0	99	99	97	143.3
F9387 + Roundup PowerMAX + NIS + N-Pa-K-AMS	3 oz/a + 32 oz/a + 0.25% v/v + 3 qt/a	0	99	92	89	148.9
Halex GT + Atrazine + NIS + N-Pa-K-AMS	3.6 pt/a + 1 pt/a + 0.25% v/v + 3 qt/a	0	99	99	98	140.9
SureStart + Durango + N-Pa-K-AMS	2 pt/a + 24 fl oz/a + 3 qt/a	0	99	98	98	137.4
Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit S + NIS + N-Pa-K-AMS	4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	0	99	98	95	153.6
LSD (P=0.10)		1	1	2	3	17.2

Table 6. Crop response to herbicide systems in field corn on June 17 at Rochester, MN, in 2013.

Treatment	Rate	Injury	Yield
	(rate/A)	6/17 (%)	(bu/A)
Untreated Check		0	84.4
Weed Free		0	134.0
PRE/POST III (V4 – V5 corn)			
Zemax + Halex GT + NIS + N-Pa-K-AMS	1 qt/a + 3.6 pt/a + 0.25% v/v + 3 qt/a	0	145.3
Harness + Laudis + Destiny HC + N-Pa-K-AMS	1.75 pt/a + 3.6 oz/a + 0.50% v/v + 2 qt/a	0	151.9
Corvus / Laudis + Roundup Power MAX + Desitny HC + N-Pa-K-AMS	5.6 fl oz/a / 3 fl oz/a + 22 fl oz/a + 0.5% v/v + 2 qt/a	0	152.4
BreakFree / Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl)	1.5 pt/a / 4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a)	0	139.8
+ Abundit Extra + NIS + N-Pa-K-AMS	+ 32 fl oz/a + 0.25% v/v + 3 qt/a	0	
BreakFree / Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl)	2.5 pt/a / 4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a)	0	139.4
+ Abundit Extra + NIS + N-Pa-K-AMS	+ 32 fl oz/a + 0.25% v/v + 3 qt/a	0	
Instigate (rimsulfuron + mesotrione) + Breakfree ATZ Lite	5.25 oz/a (0.875 oz/a + 4.375 oz/a) + 1.5 qt/a	0	143.7
+ Abundit Extra + NIS + N-Pa-K-AMS	+ 32 fl oz/a + 0.25% v/v + 3 qt/a	0	
Harness / Roundup WeatherMAX + N-Pa-K-AMS	1.25 pt/a / 32 fl oz/a + 3 qt/a	0	138.5
Zemax / Touchdown Total + N-Pa-K-AMS	1.6 qt/a / 28 fl oz/a + 3 qt/a	0	150.2
Surestart / Durango + N-Pa-K-AMS	2 pt/a / 24 fl oz/a + 3 qt/a	0	145.6
Surestart / Durango + N-Pa-K-AMS	2.5 pt/a / 24 fl oz/a + 3 qt/a	0	136.7
Surestart / Surestart / Durango + N-Pa-K-AMS	2 pt/a / 1.5 pt/a / 24 fl oz/a + 3 qt/a	0	136.8
Verdict / Roundup Power MAX + NIS + N-Pa-K-AMS	18 fl oz/a / 22 fl oz/a + 0.25% v/v + 3 qt/a	0	146.0
Verdict / Roundup Power MAX + Status + NIS + N-Pa-K-AMS	16 fl oz/a / 32 fl oz/a + 2.5 oz/a + 0.25% v/v + 3 qt/a	0	140.5
Anthem + F9387 / Roundup PowerMAX + N-Pa-K-AMS	10 fl oz/a / 3 fl oz/a + 32 fl oz/a + 3 qt/a	0	130.1
Harness / Impact + Roundup PowerMAX + Destiny HC + N-Pa-K-AMS	1.25 pt/a / 0.75 fl oz/a + 32 fl oz/a + 0.5% v/v + 3 qt/a	0	146.2
POST I (1 inch weeds) / POST III (4 inch weed regrowth)			
Roundup WeatherMAX + N-Pa-K-AMS / Roundup WeatherMAX + N-Pa-K-AMS	32 oz/a + 3 qt/a / 32 oz/a + 3 qt/a	0	140.8
POST II (2-4 inch weeds) / POST IV (2-4 in regrowth)			
Capreno + Roundup Power MAX + N-Pa-K-AMS / Laudis + Destiny HC + N-Pa-K-AMS	3 fl oz/a + 18 fl oz/a + 2 qt/a / 3 oz/a + 0.5% v/v + 2 qt/a	0	154.6
POST II (2-4 inch weeds)			
Warrant + Impact + Roundup PowerMAX + Destiny HC + N-Pa-K-AMS	3 pt/a + 0.75 fl oz/a + 32 fl oz/a + 0.5% v/v + 3 qt/a	0	143.3
F9387 + Roundup PowerMAX + NIS + N-Pa-K-AMS	3 oz/a + 32 oz/a + 0.25% v/v + 3 qt/a	12.0	148.9
Halex GT + Atrazine + NIS + N-Pa-K-AMS	3.6 pt/a + 1 pt/a + 0.25% v/v + 3 qt/a	1.3	140.9
SureStart + Durango + N-Pa-K-AMS	2 pt/a + 24 fl oz/a + 3 qt/a	0	137.4
Realm Q (rimsulfuron + mesotrione + isoxadifen-ethyl) + Abundit S + NIS + N-Pa-K-AMS	4 oz/a (1.2 oz/a + 2.5 oz/a + 0.3 oz/a) + 32 fl oz/a + 0.25% v/v + 3 qt/a	0	153.6
LSD (P=0.10)		1	17.2