

2011 Evaluation of Herbicide Systems in Soybean at Rochester, MN

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The objective of this trial was to evaluate the performance of herbicide systems for weed control in soybeans in southeastern Minnesota. The research site was a Lawler loam series with a pH of 6.6, O.M. of 2.6%, and soil test P and K levels of 62 ppm and 188 ppm, respectively. The field was fall moldboard plowed, and disked and field cultivated once prior to planting in the spring. The soybean variety, Pioneer 91Y90, was planted on May 16, 2011 at a depth of 1.5 inches in 30 inch rows at 150,000 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 plot were taken on June 8, 13, 24, 30, July 8, 18, and September 21, 2011. Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were machine harvested on October 3, 2011.

SUMMARY: Extremely limited rainfall in August and September coupled with an early September frost severely impacted soybean grain yields at the Rochester location. Overall weed control was consistently very good to excellent depending on the treatment.

Five pre-emergent herbicide treatments provided superior giant ragweed control 86% or better (6/13 rating). These treatments were Optill, Authority First, Prefix, Verdict + Outlook, and Zidua + Verdict. These five treatments followed by glyphosate also resulted in superior final giant ragweed control, 97-99% (9/21 rating). Other treatments that resulted in superior giant ragweed control were the conventional herbicide program Boundary (PRE) followed by Flexstar + Fusion + Harmony SG, and all sequential POST I + POST V treatments.

Common lambsquarters control was exceptional for nearly all of the treatments. Only three treatments provided significantly lower control of common lambsquarters. These treatments were all total post treatments, POST II Roundup WeatherMax, (87%), POST I Anthem + Roundup WeatherMax, (83%), and POST I Warrant + Roundup WeatherMax, (75%). There appeared to be some antagonism with the Warrant + Roundup WeatherMax treatment.

Common waterhemp control was exceptional for nearly all of the treatments. Only three treatments provided significantly lower control of common waterhemp. These treatments were all total post treatments, POST II Roundup WeatherMax, (83%), POST I Anthem + Roundup WeatherMax, (79%), and POST I Warrant + Roundup WeatherMax, (93%).

Giant foxtail control was excellent in all treatments (97% control or higher). The only significant reduction in foxtail control occurred in the single pass, POST II Roundup WeatherMax treatment with final weed control of 88% (9/21 rating).

Crop response to soil applied herbicide is noteworthy; three herbicide treatments (all containing saflufenacil) exhibited a crop injury response. These treatments were Optill 16%, Verdict + Outlook 7%, and Zidua +Verdict 14% (6/13 rating date). The crop injury response did not appear to negatively impact grain yields. (University of Minnesota Extension Regional Office, Rochester)

Date	5/17	6/13	6/16	6/25	6/29	7/5
Treatment	PRE	POST I	POST II	POST III	POST IV	POST V
Temperature (F)						
Air	63	64	66	67	74	79
Soil	62.4	62.2	66.6	66.2	69.6	77.6
Relative Humidity (%)	29	64	90	70	57	64
Wind (mph)	12	8	8	6	13	14
Soil Moisture	Adequate	Dry	Excessive	Excessive	Adequate	Adequate
Soybean						
Stage		V2	V3	V4	V5	R1
Height (inch)		5.5	5.5	9.8	8.4	11.5
Giant Ragweed						
Weed density (ft ²)	4.4					
Height (inch)	3.5	6.5	5.1	10.5	4.1	3.6
Common Lambsquarters						
Weed density (ft ²)	2.0					
Height (inch)	1.1	1.5	1.5			1.9
Common Waterhemp						
Weed density (ft ²)	3.8					
Height (inch)	1.3	2.4	1.5			3.0
Giant Foxtail						
Weed density (ft ²)	0.6					
Height (inch)	2.3	3.5	3.4	4.8	3.3	3.0
Rainfall after each application (inch)						
Week 1	1.78	3.41	2.89	0.31	0.31	0.45
Week 2	0.66	1.29	0.03	0.04	0.45	2.79
Week 3	0.04	0.31	0.31	3.20	2.79	0.17

Table 1. Performance of herbicide systems for giant ragweed control in soybean and grain yield at 13% at Rochester, MN, in 2011.

Treatment	Rate (rate/A)	Giant Ragweed Control						Yield (bu/A)
		6/8	6/13	6/24	7/8	7/18	9/21	
Untreated		0	0	0	0	0	0	4.5
Weed Free		100	100	100	100	100	100	35.9
PRE/POST I (4 inch weeds)								
Boundary / Flexstar + Fusion + Harmony SG + MSO + 28% N	1.5 pt/a / 16 oz/a + 8 oz/a + 0.125 oz/a + 1% v/v + 2.5% v/v	34	15	99	98	97	97	24.7
PRE/POST II (6 inch weeds)								
Anthem / Roundup PowerMax + N-Pak AMS	10 oz/a / 22 oz/a + 3 qt/a	31	16	94	90	91	88	23.9
Boundary / Touchdown Total + N-Pak AMS	1.5 pt/a / 24 oz/a + 3 qt/a	31	15	92	89	89	87	28.1
Valor SX / Roundup PowerMax + N-Pak AMS	2 oz/a / 22 oz/a + 3 qt/a	55	30	96	94	93	91	30.7
PRE / POST III (6 inch weeds)								
Fierce / Roundup PowerMax + N-Pak AMS	3 oz/a / 22 oz/a + 3 qt/a	62	49	53	87	88	88	24.8
Fierce + Classic / Roundup PowerMax + N-Pak AMS	3 oz/a + 0.33 oz a / 22 oz/a + 3 qt/a	63	51	57	87	89	87	31.4
Optill / Roundup PowerMax + NIS + N-Pak AMS	2 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	90	86	90	96	94	99	26.3
Sonic / Durango DMA + N-Pak AMS	3 oz/a / 24 oz/a + 3 qt/a	83	74	70	93	94	93	31.4
Enlite / Abundit S + N-Pak AMS	2.8 oz/a / 32 oz/a + 3 qt/a	75	61	50	88	90	90	25.5
Enlite / Abundit S + Harmony SG + N-Pak AMS	2.8 oz/a / 32 oz/a + 0.125 oz/a + 3 qt/a	71	57	49	84	87	86	28.2
PRE / POST IV (4 inch weeds)								
Authority First / Roundup PowerMax + N-Pak AMS	6.4 oz/a / 22 oz/a + 3 qt/a	91	88	88	95	95	97	30.3
Prefix / Touchdown Total + N-Pak AMS	1 qt/a / 24 oz/a + 3 qt/a	93	90	86	94	95	99	26.0
Verdict + Outlook / Roundup PowerMax + NIS + N-Pak AMS	5 oz/a + 10 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	93	90	84	94	94	97	31.2
Zidua + Verdict / Roundup PowerMax + NIS + N-Pak AMS	2 oz/a + 5 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	97	94	93	97	96	98	28.4
POST I (4 inch weeds)								
Anthem + Roundup PowerMax + NIS + N-Pak AMS	8 oz/a + 22 oz/a + 0.25% v/v + 3 qt/a			93	91	90	84	23.5
Warrant + Roundup WeatherMax + N-Pak AMS	3 pt/a + 22 oz/a + 3 qt/a			97	94	92	87	28.0
POST I (4 inch weeds)/POST V (4 inch regrowth)								
Roundup WeatherMax + N-Pak AMS / Roundup WeatherMax + N-Pak AMS	22 oz/a + 3 qt/a / 22 oz/a + 3 qt/a			97	97	99	99	32.2
Durango DMA + FirstRate + N-Pak AMS / Durango DMA + N-Pak AMS	24 oz/a + 0.3 oz/a + 3 qt/a / 24 oz/a + 3 qt/a			97	98	98	99	29.8
Flexstar GT + N-Pak AMS / Touchdown Total + N-Pak AMS	3.5 pt/a + 3 qt/a / 24 oz/a + 3 qt/a			92	96	96	99	30.2
Synchrony + Abundit S + N-Pak AMS / Abundit S + N-Pak AMS	0.375 oz/a + 32 oz/a + 3 qt/a / 32 oz/a + 3 qt/a			98	97	98	99	23.6
Roundup PowerMax + Resource + N-Pak AMS / Roundup PowerMax + N-Pak AMS	22 oz/a + 2 oz/a + 3 qt/a / 22 oz/a + 3 qt/a			87	95	94	97	25.0
POST II (6 inch weeds)								
Roundup WeatherMax + N-Pak AMS	22 oz/a + 3 qt/a			90	89	90	83	31.4
	LSD (P=0.10)	3.4	4.1	4.1	2.5	2.4	3.5	5.7

Table 2. Performance of herbicide systems for common lambsquarters control in soybean and grain yield at 13% at Rochester, MN, in 2011.

Treatment	Rate (rate/A)	Common Lambsquarters Control						Yield (bu/A)
		6/8	6/13	6/24	7/8	7/18	9/21	
Untreated		0	0	0	0	0	0	4.5
Weed Free		100	100	100	100	100	100	35.9
PRE/POST I (4 inch weeds)								
Boundary / Flexstar + Fusion + Harmony SG + MSO + 28% N	1.5 pt/a / 16 oz/a + 8 oz/a + 0.125 oz/a + 1% v/v + 2.5% v/v	99	99	99	99	99	98	24.7
PRE/POST II (6 inch weeds)								
Anthem / Roundup PowerMax + N-Pak AMS	10 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	98	97	23.9
Boundary / Touchdown Total + N-Pak AMS	1.5 pt/a / 24 oz/a + 3 qt/a	99	99	99	98	96	95	28.1
Valor SX / Roundup PowerMax + N-Pak AMS	2 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	30.7
PRE / POST III (6 inch weeds)								
Fierce / Roundup PowerMax + N-Pak AMS	3 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	24.8
Fierce + Classic / Roundup PowerMax + N-Pak AMS	3 oz/a + 0.33 oz a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	31.4
Optill / Roundup PowerMax + NIS + N-Pak AMS	2 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	99	99	26.3
Sonic / Durango DMA + N-Pak AMS	3 oz/a / 24 oz/a + 3 qt/a	99	99	99	99	99	99	31.4
Enlite / Abundit S + N-Pak AMS	2.8 oz/a / 32 oz/a + 3 qt/a	99	99	99	99	99	99	25.5
Enlite / Abundit S + Harmony SG + N-Pak AMS	2.8 oz/a / 32 oz/a + 0.125 oz/a + 3 qt/a	99	99	99	99	99	99	28.2
PRE / POST IV (4 inch weeds)								
Authority First / Roundup PowerMax + N-Pak AMS	6.4 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	30.3
Prefix / Touchdown Total + N-Pak AMS	1 qt/a / 24 oz/a + 3 qt/a	99	99	99	99	99	99	26.0
Verdict + Outlook / Roundup PowerMax + NIS + N-Pak AMS	5 oz/a + 10 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	99	99	31.2
Zidua + Verdict / Roundup PowerMax + NIS + N-Pak AMS	2 oz/a + 5 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	99	99	28.4
POST I (4 inch weeds)								
Anthem + Roundup PowerMax + NIS + N-Pak AMS	8 oz/a + 22 oz/a + 0.25% v/v + 3 qt/a			99	95	93	83	23.5
Warrant + Roundup WeatherMax + N-Pak AMS	3 pt/a + 22 oz/a + 3 qt/a			88	89	84	75	28.0
POST I (4 inch weeds)/POST V (4 inch regrowth)								
Roundup WeatherMax + N-Pak AMS / Roundup WeatherMax + N-Pak AMS	22 oz/a + 3 qt/a / 22 oz/a + 3 qt/a			98	99	99	99	32.2
Durango DMA + FirstRate + N-Pak AMS / Durango DMA + N-Pak AMS	24 oz/a + 0.3 oz/a + 3 qt/a / 24 oz/a + 3 qt/a			98	99	99	99	29.8
Flexstar GT + N-Pak AMS / Touchdown Total + N-Pak AMS	3.5 pt/a + 3 qt/a / 24 oz/a + 3 qt/a			99	98	98	99	30.2
Synchrony + Abundit S + N-Pak AMS / Abundit S + N-Pak AMS	0.375 oz/a + 32 oz/a + 3 qt/a / 32 oz/a + 3 qt/a			98	98	99	99	23.6
Roundup PowerMax + Resource + N-Pak AMS / Roundup PowerMax + N-Pak AMS	22 oz/a + 2 oz/a + 3 qt/a / 22 oz/a + 3 qt/a			99	98	99	99	25.0
POST II (6 inch weeds)								
Roundup WeatherMax + N-Pak AMS	22 oz/a + 3 qt/a			99	96	94	87	31.4
	LSD (P=0.10)	0	0.3	1.4	1.5	1.5	2.2	5.7

Table 3. Performance of herbicide systems for common waterhemp control in soybean and grain yield at 13% at Rochester, MN, in 2011.

Treatment	Rate (rate/A)	Common Waterhemp Control						Yield (bu/A)
		6/8	6/13	6/24	7/8	7/18	9/21	
Untreated		0	0	0	0	0	0	4.5
Weed Free		100	100	100	100	100	100	35.9
PRE/POST I (4 inch weeds)								
Boundary / Flexstar + Fusion + Harmony SG + MSO + 28% N	1.5 pt/a / 16 oz/a + 8 oz/a + 0.125 oz/a + 1% v/v + 2.5% v/v	99	99	99	99	99	99	24.7
PRE/POST II (6 inch weeds)								
Anthem / Roundup PowerMax + N-Pak AMS	10 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	23.9
Boundary / Touchdown Total + N-Pak AMS	1.5 pt/a / 24 oz/a + 3 qt/a	99	99	99	99	97	98	28.1
Valor SX / Roundup PowerMax + N-Pak AMS	2 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	30.7
PRE / POST III (6 inch weeds)								
Fierce / Roundup PowerMax + N-Pak AMS	3 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	24.8
Fierce + Classic / Roundup PowerMax + N-Pak AMS	3 oz/a + 0.33 oz a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	31.4
Optill / Roundup PowerMax + NIS + N-Pak AMS	2 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	99	99	98	99	97	98	26.3
Sonic / Durango DMA + N-Pak AMS	3 oz/a / 24 oz/a + 3 qt/a	99	99	99	99	99	98	31.4
Enlite / Abundit S + N-Pak AMS	2.8 oz/a / 32 oz/a + 3 qt/a	99	99	99	99	99	99	25.5
Enlite / Abundit S + Harmony SG + N-Pak AMS	2.8 oz/a / 32 oz/a + 0.125 oz/a + 3 qt/a	99	99	99	99	99	99	28.2
PRE / POST IV (4 inch weeds)								
Authority First / Roundup PowerMax + N-Pak AMS	6.4 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	30.3
Prefix / Touchdown Total + N-Pak AMS	1 qt/a / 24 oz/a + 3 qt/a	99	99	99	99	99	99	26.0
Verdict + Outlook / Roundup PowerMax + NIS + N-Pak AMS	5 oz/a + 10 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	99	99	31.2
Zidua + Verdict / Roundup PowerMax + NIS + N-Pak AMS	2 oz/a + 5 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	99	99	28.4
POST I (4 inch weeds)								
Anthem + Roundup PowerMax + NIS + N-Pak AMS	8 oz/a + 22 oz/a + 0.25% v/v + 3 qt/a			98	92	90	79	23.5
Warrant + Roundup WeatherMax + N-Pak AMS	3 pt/a + 22 oz/a + 3 qt/a			99	99	96	93	28.0
POST I (4 inch weeds)/POST V (4 inch regrowth)								
Roundup WeatherMax + N-Pak AMS / Roundup WeatherMax + N-Pak AMS	22 oz/a + 3 qt/a / 22 oz/a + 3 qt/a			99	99	99	99	32.2
Durango DMA + FirstRate + N-Pak AMS / Durango DMA + N-Pak AMS	24 oz/a + 0.3 oz/a + 3 qt/a / 24 oz/a + 3 qt/a			99	99	99	99	29.8
Flexstar GT + N-Pak AMS / Touchdown Total + N-Pak AMS	3.5 pt/a + 3 qt/a / 24 oz/a + 3 qt/a			98	98	99	99	30.2
Synchrony + Abundit S + N-Pak AMS / Abundit S + N-Pak AMS	0.375 oz/a + 32 oz/a + 3 qt/a / 32 oz/a + 3 qt/a			99	99	99	99	23.6
Roundup PowerMax + Resource + N-Pak AMS / Roundup PowerMax + N-Pak AMS	22 oz/a + 2 oz/a + 3 qt/a / 22 oz/a + 3 qt/a			98	98	99	99	25.0
POST II (6 inch weeds)								
Roundup WeatherMax + N-Pak AMS	22 oz/a + 3 qt/a			99	93	92	83	31.4
	LSD (P=0.10)	0.1	0.2	0.5	1.5	2.0	3.0	5.7

Table 4. Performance of herbicide systems for giant foxtail control in soybean and grain yield at 13% at Rochester, MN, in 2011.

Treatment	Rate (rate/A)	Giant Foxtail Control						Yield (bu/A)
		6/8	6/13	6/24	7/8	7/18	9/21	
Untreated		0	0	0	0	0	0	4.5
Weed Free		100	100	100	100	100	100	35.9
PRE/POST I (4 inch weeds)								
Boundary /	1.5 pt/a /	99	99	99	99	98	99	24.7
Flexstar + Fusion + Harmony SG + MSO + 28% N	16 oz/a + 8 oz/a + 0.125 oz/a + 1% v/v + 2.5% v/v							
PRE/POST II (6 inch weeds)								
Anthem / Roundup PowerMax + N-Pak AMS	10 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	98	99	23.9
Boundary / Touchdown Total + N-Pak AMS	1.5 pt/a / 24 oz/a + 3 qt/a	99	99	99	99	97	99	28.1
Valor SX / Roundup PowerMax + N-Pak AMS	2 oz/a / 22 oz/a + 3 qt/a	94	75	99	99	97	99	30.7
PRE / POST III (6 inch weeds)								
Fierce / Roundup PowerMax + N-Pak AMS	3 oz/a / 22 oz/a + 3 qt/a	99	96	96	99	99	99	24.8
Fierce + Classic / Roundup PowerMax + N-Pak AMS	3 oz/a + 0.33 oz a / 22 oz/a + 3 qt/a	99	97	99	99	99	99	31.4
Optill / Roundup PowerMax + NIS + N-Pak AMS	2 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	91	68	68	99	97	99	26.3
Sonic / Durango DMA + N-Pak AMS	3 oz/a / 24 oz/a + 3 qt/a	95	79	81	99	98	99	31.4
Enlite / Abundit S + N-Pak AMS	2.8 oz/a / 32 oz/a + 3 qt/a	95	78	79	98	97	99	25.5
Enlite / Abundit S + Harmony SG + N-Pak AMS	2.8 oz/a / 32 oz/a + 0.125 oz/a + 3 qt/a	96	73	80	97	96	98	28.2
PRE / POST IV (4 inch weeds)								
Authority First / Roundup PowerMax + N-Pak AMS	6.4 oz/a / 22 oz/a + 3 qt/a	97	88	86	99	99	99	30.3
Prefix / Touchdown Total + N-Pak AMS	1 qt/a / 24 oz/a + 3 qt/a	99	99	99	99	99	99	26.0
Verdict + Outlook / Roundup PowerMax + NIS + N-Pak AMS	5 oz/a + 10 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	99	99	98	99	99	99	31.2
Zidua + Verdict / Roundup PowerMax + NIS + N-Pak AMS	2 oz/a + 5 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	99	99	28.4
POST I (4 inch weeds)								
Anthem + Roundup PowerMax + NIS + N-Pak AMS	8 oz/a + 22 oz/a + 0.25% v/v + 3 qt/a			99	98	96	97	23.5
Warrant + Roundup WeatherMax + N-Pak AMS	3 pt/a + 22 oz/a + 3 qt/a			99	99	98	99	28.0
POST I (4 inch weeds)/POST V (4 inch regrowth)								
Roundup WeatherMax + N-Pak AMS /	22 oz/a + 3 qt/a /			99	98	99	99	32.2
Roundup WeatherMax + N-Pak AMS	22 oz/a + 3 qt/a							
Durango DMA + FirstRate + N-Pak AMS /	24 oz/a + 0.3 oz/a + 3 qt/a /			99	99	99	99	29.8
Durango DMA + N-Pak AMS	24 oz/a + 3 qt/a							
Flexstar GT + N-Pak AMS / Touchdown Total + N-Pak AMS	3.5 pt/a + 3 qt/a / 24 oz/a + 3 qt/a			99	99	99	99	30.2
Synchrony + Abundit S + N-Pak AMS /	0.375 oz/a + 32 oz/a + 3 qt/a /			99	99	99	99	23.6
Abundit S + N-Pak AMS	32 oz/a + 3 qt/a							
Roundup PowerMax + Resource + N-Pak AMS /	22 oz/a + 2 oz/a + 3 qt/a /			99	98	99	99	25.0
Roundup PowerMax + N-Pak AMS	22 oz/a + 3 qt/a							
POST II (6 inch weeds)								
Roundup WeatherMax + N-Pak AMS	22 oz/a + 3 qt/a			99	94	86	88	31.4
	LSD (P=0.10)	1.5	4.3	2.9	1.3	2.8	1.3	5.7

Table 5. Soybean response to herbicide systems and grain yield at 13% at Rochester, MN, in 2011.

Treatment	Rate (rate/A)	6/13	Injury 6/24	6/30 Plant Vigor	Yield
			(%)		(bu/A)
Untreated		0	0	7	4.5
Weed Free		0	0	6.5	35.9
PRE/POST I (4 inch weeds)					
Boundary /	1.5 pt/a /	0	25	5.3	24.7
Flexstar + Fusion + Harmony SG + MSO + 28% N	16 oz/a + 8 oz/a + 0.125 oz/a + 1% v/v + 2.5% v/v				
PRE/POST II (6 inch weeds)					
Anthem / Roundup PowerMax + N-Pak AMS	10 oz/a / 22 oz/a + 3 qt/a	0	6	6.4	23.9
Boundary / Touchdown Total + N-Pak AMS	1.5 pt/a / 24 oz/a + 3 qt/a	0	0	6.6	28.1
Valor SX / Roundup PowerMax + N-Pak AMS	2 oz/a / 22 oz/a + 3 qt/a	0	3	6.8	30.7
PRE / POST III (6 inch weeds)					
Fierce / Roundup PowerMax + N-Pak AMS	3 oz/a / 22 oz/a + 3 qt/a	0	0	6.4	24.8
Fierce + Classic / Roundup PowerMax + N-Pak AMS	3 oz/a + 0.33 oz a / 22 oz/a + 3 qt/a	0	0	6.6	31.4
Optill / Roundup PowerMax + NIS + N-Pak AMS	2 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	16	5	7	26.3
Sonic / Durango DMA + N-Pak AMS	3 oz/a / 24 oz/a + 3 qt/a	0	0	7.5	31.4
Enlite / Abundit S + N-Pak AMS	2.8 oz/a / 32 oz/a + 3 qt/a	0	0	6.8	25.5
Enlite / Abundit S + Harmony SG + N-Pak AMS	2.8 oz/a / 32 oz/a + 0.125 oz/a + 3 qt/a	0	0	6.6	28.2
PRE / POST IV (4 inch weeds)					
Authority First / Roundup PowerMax + N-Pak AMS	6.4 oz/a / 22 oz/a + 3 qt/a	0	0	7.4	30.3
Prefix / Touchdown Total + N-Pak AMS	1 qt/a / 24 oz/a + 3 qt/a	0	0	7.8	26.0
Verdict + Outlook / Roundup PowerMax + NIS + N-Pak AMS	5 oz/a + 10 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	7	4	6.8	31.2
Zidua + Verdict / Roundup PowerMax + NIS + N-Pak AMS	2 oz/a + 5 oz/a / 22 oz/a + 0.25% v/v + 3 qt/a	14	4	6	28.4
POST I (4 inch weeds)					
Anthem + Roundup PowerMax + NIS + N-Pak AMS	8 oz/a + 22 oz/a + 0.25% v/v + 3 qt/a		10	6	23.5
Warrant + Roundup WeatherMax + N-Pak AMS	3 pt/a + 22 oz/a + 3 qt/a		0	6.5	28.0
POST I (4 inch weeds)/POST V (4 inch regrowth)					
Roundup WeatherMax + N-Pak AMS /	22 oz/a + 3 qt/a /		0	6.8	32.2
Roundup WeatherMax + N-Pak AMS	22 oz/a + 3 qt/a				
Durango DMA + FirstRate + N-Pak AMS /	24 oz/a + 0.3 oz/a + 3 qt/a /		0	6.4	29.8
Durango DMA + N-Pak AMS	24 oz/a + 3 qt/a				
Flexstar GT + N-Pak AMS / Touchdown Total + N-Pak AMS	3.5 pt/a + 3 qt/a / 24 oz/a + 3 qt/a		15	6	30.2
Synchrony + Abundit S + N-Pak AMS /	0.375 oz/a + 32 oz/a + 3 qt/a /		14	5.6	23.6
Abundit S + N-Pak AMS	32 oz/a + 3 qt/a				
Roundup PowerMax + Resource + N-Pak AMS /	22 oz/a + 2 oz/a + 3 qt/a /		5	6	25.0
Roundup PowerMax + N-Pak AMS	22 oz/a + 3 qt/a				
POST II (6 inch weeds)					
Roundup WeatherMax + N-Pak AMS	22 oz/a + 3 qt/a		0	6.3	31.4
	LSD (P=0.10)	4.7	4.7	0.6	5.7