

## **2009 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 6.8 and soil test P and K levels of 95 ppm and 225 ppm, respectively. The field was spring disked and field cultivated once prior to planting. The soybean hybrid, Asgrow AG2108, was planted on May 19, 2009 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 15 and 29, July 6, 13, 20 and 28. Application dates, environmental conditions, and weed stages are listed below. The center two rows of each plot were machine harvested on October 20, 2009. (University of Minnesota Extension Regional Office, Rochester)

<b>Date</b>	<b>5/21</b>	<b>6/16</b>	<b>6/22</b>	<b>6/26</b>	<b>7/2</b>	<b>7/13</b>
<b>Treatment</b>	PRE	POST I	POST II	POST III	POST IV	POST V
<b>Temperature (F)</b>						
Air	65	68	90	86	67	75
Soil	66.6	69.3	82	85.1	68.9	79.2
<b>Relative Humidity (%)</b>	52	54	48	37	69	43
<b>Wind (mph)</b>	13	14	12	0	13	6
<b>Soil Moisture</b>	Adequate	Adequate	Excessive	Inadequate	Inadequate	Inadequate
<b>Soybean</b>						
Stage		V1	V2	V3	V4-V5	V6-R1
Height (inch)		3.5	5.0	8.0	8.1	15.2
<b>Giant Ragweed</b>						
Weed density (ft <sup>2</sup> )		5.6	5.6	5.6	5.6	5.6
Height (inch)		4.6	7.0	4.4	4.3	8.7
<b>Common Lambsquarter</b>						
Weed density (ft <sup>2</sup> )		7	7	7	7	7
Height (inch)		1.8	2.5	2.9	1.8	5.0
<b>Common Waterhemp</b>						
Weed density (ft <sup>2</sup> )		1.9	1.9	1.9	1.9	1.9
Height (inch)		1.5	3.0	1.6	3.5	4.1
<b>Giant Foxtail</b>						
Weed density (ft <sup>2</sup> )		0.8	0.8	0.8	0.8	0.8
Height (inch)		3.6	4.5	2.9	7.0	5.9
<b>Velvetleaf</b>						
Weed density (ft <sup>2</sup> )						
Height (inch)			1.9	2.4		3.0
<b>Rainfall after each application</b>						
Week 1	1.93	1.18	0.18	0.18	0.9	0
Week 2	0.82	0.17	0.27	0.99	0.15	1.80
Week 3	1.75	0.89	0.79	0.06	0.60	0.99

**Table 1. Performance of herbicide systems for giant ragweed control in soybean and grain yield at 13% at Rochester, MN, in 2009**

Treatment	Rate (rate/A)	Giant Ragweed Control						Yield (bu/A)	
		6/15	6/29	7/6	7/13	7/20	7/28		
Untreated		0	0	0	0	0	0	3.5	j
Weed Free		100	100	100	100	100	100	33.4	a-e
<b>PRE/POST II</b>									
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	23	98	97	95	97	92	25.9	hi
Authority First / Raptor + Select + COC + 28%N	6.4 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	90	93	88	88	92	87	28.2	ghi
Gangster V + Gangster FR / Raptor + Select + COC + 28%N	2.5 oz/a + 0.5 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	90	93	87	87	92	84	25.4	l
<b>PRE/POST IV</b>									
Authority First / Roundup OriginalMax + N-Pa-K AMS	3.2 oz/a / 22 oz/a + 3 qt/a	89	91	92	97	98	97	35.7	a-d
Authority Assist / Roundup OriginalMax + N-Pa-K AMS	5 oz/a / 22 oz/a + 3 qt/a	63	98	97	96	98	94	34.9	a-d
IntRRo / Roundup WeatherMax + N-Pa-K AMS	2 qt/a / 22 oz/a + 3 qt/a	20	93	97	96	98	96	34.8	a-d
Gangster V + Gangster FR / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.4 oz/a / 22 oz/a + 3 qt/a	92	93	95	97	98	98	36.4	a-b
Prefix / Touchdown Total + N-Pa-K AMS	1 qt/a / 24 oz/a + 3 qt/a	79	83	98	98	99	99	34.6	a-d
Boundary / Touchdown Total + N-Pa-K AMS	1.5 pt/a / 24 oz/a + 3 qt/a	20	97	98	98	99	97	36.6	A
V-10233 / Roundup OriginalMax + N-Pa-K AMS	3 oz/a / 22 oz/a + 3 qt/a	20	84	96	97	98	96	35.9	abc
Valor SX + Python / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.5 oz/a / 22 oz/a + 3 qt/a	35	80	95	94	97	97	34.5	a-d
Valor SX + IntRRo / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 1 pt/a / 22 oz/a + 3 qt/a	30	97	96	98	98	97	35.6	a-d
Sonic / Durango DMA + N-Pa-K AMS	4.5 oz/a / 24 oz/a + 3 qt/a	92	92	95	97	98	99	34.5	a-d
Enlite / Roundup OriginalMax + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 3 qt/a	65	97	97	97	98	97	34.3	a-d
Enlite / Roundup OriginalMax + Harmony SG + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 0.125 oz/a + 3 qt/a	63	96	96	96	98	95	30.3	efg
<b>POST I/POST V</b>									
Roundup WeatherMax + N-Pa-K AMS / Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a / 22 oz/a + 3 qt/a	0	92	90	82	92	93	32.2	def
Durango DMA + FirstRate + N-Pa-K AMS / Durango DMA + N-Pa-K AMS	24 oz/a + 0.3 oz/a + 3 qt/a / 24 oz/a + 3 qt/a	0	97	96	96	98	98	32.4	c-f
Flexstar SG + N-Pa-K AMS / Touchdown Total + N-Pa-K AMS	3 pt/a + 3 qt/a / 24 oz/a + 3 qt/a	0	98	98	97	98	98	32.9	b-f
<b>POST III</b>									
Classic + Harmony SG + Roundup OriginalMax + N-Pa-K AMS	0.33 oz/a + 0.05 oz/a + 22 oz/a + 3 qt/a	0	94	96	96	97	95	27.5	ghi
Roundup OriginalMax + Resource + NIS + N-Pa-K AMS	22 oz/a + 3 oz/a + 0.25% v/v + 3 qt/a	0	82	87	87	95	90	29.8	efg
Roundup OriginalMax + Cadet + NIS + N-Pa-K AMS	22 oz/a + 0.6 oz/a + 0.25% v/v + 3 qt/a	0	80	87	87	95	93	29.3	fgh
Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a	0	97	96	95	97	95	32.7	b-f
<b>LSD (P=0.10)</b>		5	5	2	2	1	3	3.6	

**Table 2. Performance of herbicide systems for common lambsquarters control in soybean and grain yield at 13% at Rochester, MN, in 2009**

Treatment	Rate (rate/A)	Common Lambsquarters Control (% Control)						Yield (bu/A)	
		6/15	6/29	7/6	7/13	7/20	7/28		
Untreated		0	0	0	0	0	0	3.5	j
Weed Free		100	100	100	100	100	100	33.4	a-e
<b>PRE/POST II</b>									
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	25.9	hi
Authority First / Raptor + Select + COC + 28%N	6.4 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	99	99	99	99	99	99	28.2	ghi
Gangster V + Gangster FR / Raptor + Select + COC + 28%N	2.5 oz/a + 0.5 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	99	94	99	99	99	99	25.4	l
<b>PRE/POST IV</b>									
Authority First / Roundup OriginalMax + N-Pa-K AMS	3.2 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	35.7	a-d
Authority Assist / Roundup OriginalMax + N-Pa-K AMS	5 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	34.9	a-d
IntRRo / Roundup WeatherMax + N-Pa-K AMS	2 qt/a / 22 oz/a + 3 qt/a	69	97	99	98	98	98	34.8	a-d
Gangster V + Gangster FR / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.4 oz/a / 22 oz/a + 3 qt/a	99	92	99	99	99	99	36.4	a-b
Prefix / Touchdown Total + N-Pa-K AMS	1 qt/a / 24 oz/a + 3 qt/a	90	93	99	99	99	99	34.6	a-d
Boundary / Touchdown Total + N-Pa-K AMS	1.5 pt/a / 24 oz/a + 3 qt/a	99	99	99	99	99	98	36.6	A
V-10233 / Roundup OriginalMax + N-Pa-K AMS	3 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	35.9	abc
Valor SX + Python / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.5 oz/a / 22 oz/a + 3 qt/a	99	99	99	98	99	98	34.5	a-d
Valor SX + IntRRo / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 1 pt/a / 22 oz/a + 3 qt/a	92	99	99	99	99	99	35.6	a-d
Sonic / Durango DMA + N-Pa-K AMS	4.5 oz/a / 24 oz/a + 3 qt/a	99	99	99	99	99	99	34.5	a-d
Enlite / Roundup OriginalMax + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 3 qt/a	97	99	99	99	99	99	34.3	a-d
Enlite / Roundup OriginalMax + Harmony SG + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 0.125 oz/a + 3 qt/a	99	99	99	99	99	99	30.3	efg
<b>POST I/POST V</b>									
Roundup WeatherMax + N-Pa-K AMS / Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a / 22 oz/a + 3 qt/a	0	89	91	84	89	97	32.2	def
Durango DMA + FirstRate + N-Pa-K AMS / Durango DMA + N-Pa-K AMS	24 oz/a + 0.3 oz/a + 3 qt/a / 24 oz/a + 3 qt/a	0	81	85	79	87	95	32.4	c-f
Flexstar SG + N-Pa-K AMS / Touchdown Total + N-Pa-K AMS	3 pt/a + 3 qt/a / 24 oz/a + 3 qt/a	0	95	93	88	94	99	32.9	b-f
<b>POST III</b>									
Classic + Harmony SG + Roundup OriginalMax + N-Pa-K AMS	0.33 oz/a + 0.05 oz/a + 22 oz/a + 3 qt/a	0	91	95	89	90	93	27.5	ghi
Roundup OriginalMax + Resource + NIS + N-Pa-K AMS	22 oz/a + 3 oz/a + 0.25% v/v + 3 qt/a	0	91	92	91	90	94	29.8	efg
Roundup OriginalMax + Cadet + NIS + N-Pa-K AMS	22 oz/a + 0.6 oz/a + 0.25% v/v + 3 qt/a	0	94	95	89	90	93	29.3	fgh
Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a	0	95	96	92	94	94	32.7	b-f
<b>LSD (P=0.10)</b>		3	4	2	2	3	2	3.6	

**Table 3. Performance of herbicide systems for common waterhemp control in soybean and grain yield at 13% at Rochester, MN, in 2009**

Treatment	Rate (rate/A)	Common Waterhemp Control (% Control)						Yield (bu/A)	
		6/15	6/29	7/6	7/13	7/20	7/28		
Untreated		0	0	0	0	0	0	3.5	j
Weed Free		100	100	100	100	100	100	33.4	a-e
<b>PRE/POST II</b>									
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	25.9	hi
Authority First / Raptor + Select + COC + 28%N	6.4 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	99	99	99	99	99	99	28.2	ghi
Gangster V + Gangster FR / Raptor + Select + COC + 28%N	2.5 oz/a + 0.5 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	99	96	99	99	99	98	25.4	l
<b>PRE/POST IV</b>									
Authority First / Roundup OriginalMax + N-Pa-K AMS	3.2 oz/a / 22 oz/a + 3 qt/a	99	97	99	99	99	99	35.7	a-d
Authority Assist / Roundup OriginalMax + N-Pa-K AMS	5 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	34.9	a-d
IntRRo / Roundup WeatherMax + N-Pa-K AMS	2 qt/a / 22 oz/a + 3 qt/a	92	99	99	98	97	97	34.8	a-d
Gangster V + Gangster FR / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.4 oz/a / 22 oz/a + 3 qt/a	99	91	99	99	99	99	36.4	a-b
Prefix / Touchdown Total + N-Pa-K AMS	1 qt/a / 24 oz/a + 3 qt/a	98	99	99	99	99	99	34.6	a-d
Boundary / Touchdown Total + N-Pa-K AMS	1.5 pt/a / 24 oz/a + 3 qt/a	99	99	99	99	99	99	36.6	A
V-10233 / Roundup OriginalMax + N-Pa-K AMS	3 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	35.9	abc
Valor SX + Python / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.5 oz/a / 22 oz/a + 3 qt/a	99	99	99	98	99	99	34.5	a-d
Valor SX + IntRRo / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 1 pt/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	35.6	a-d
Sonic / Durango DMA + N-Pa-K AMS	4.5 oz/a / 24 oz/a + 3 qt/a	99	97	99	99	99	99	34.5	a-d
Enlite / Roundup OriginalMax + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	34.3	a-d
Enlite / Roundup OriginalMax + Harmony SG + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 0.125 oz/a + 3 qt/a	98	99	99	99	99	99	30.3	efg
<b>POST I/POST V</b>									
Roundup WeatherMax + N-Pa-K AMS / Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a / 22 oz/a + 3 qt/a	0	89	88	83	97	99	32.2	def
Durango DMA + FirstRate + N-Pa-K AMS / Durango DMA + N-Pa-K AMS	24 oz/a + 0.3 oz/a + 3 qt/a / 24 oz/a + 3 qt/a	0	95	93	88	98	99	32.4	c-f
Flexstar SG + N-Pa-K AMS / Touchdown Total + N-Pa-K AMS	3 pt/a + 3 qt/a / 24 oz/a + 3 qt/a	0	98	99	99	99	99	32.9	b-f
<b>POST III</b>									
Classic + Harmony SG + Roundup OriginalMax + N-Pa-K AMS	0.33 oz/a + 0.05 oz/a + 22 oz/a + 3 qt/a	0	98	98	97	97	97	27.5	ghi
Roundup OriginalMax + Resource + NIS + N-Pa-K AMS	22 oz/a + 3 oz/a + 0.25% v/v + 3 qt/a	0	95	97	93	94	93	29.8	efg
Roundup OriginalMax + Cadet + NIS + N-Pa-K AMS	22 oz/a + 0.6 oz/a + 0.25% v/v + 3 qt/a	0	97	97	90	94	92	29.3	fgh
Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a	0	98	97	93	96	93	32.7	b-f
<b>LSD (P=0.10)</b>		3	3	1	2	1	2	3.6	

**Table 4. Performance of herbicide systems for giant foxtail control in soybean and grain yield at 13% at Rochester, MN, in 2009**

Treatment	Rate (rate/A)	Giant Foxtail Control (% Control)						Yield (bu/A)	
		6/15	6/29	7/6	7/13	7/20	7/28		
Untreated		0	0	0	0	0	0	3.5	j
Weed Free		100	100	100	100	100	100	33.4	a-e
<b>PRE/POST II</b>									
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	25.9	hi
Authority First / Raptor + Select + COC + 28%N	6.4 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	90	87	90	94	97	99	28.2	ghi
Gangster V + Gangster FR / Raptor + Select + COC + 28%N	2.5 oz/a + 0.5 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	90	88	90	93	95	95	25.4	l
<b>PRE/POST IV</b>									
Authority First / Roundup OriginalMax + N-Pa-K AMS	3.2 oz/a / 22 oz/a + 3 qt/a	75	80	95	99	99	99	35.7	a-d
Authority Assist / Roundup OriginalMax + N-Pa-K AMS	5 oz/a / 22 oz/a + 3 qt/a	81	99	99	98	98	98	34.9	a-d
IntRRo / Roundup WeatherMax + N-Pa-K AMS	2 qt/a / 22 oz/a + 3 qt/a	99	99	99	98	98	98	34.8	a-d
Gangster V + Gangster FR / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.4 oz/a / 22 oz/a + 3 qt/a	86	91	96	99	99	99	36.4	a-b
Prefix / Touchdown Total + N-Pa-K AMS	1 qt/a / 24 oz/a + 3 qt/a	99	99	99	99	99	99	34.6	a-d
Boundary / Touchdown Total + N-Pa-K AMS	1.5 pt/a / 24 oz/a + 3 qt/a	99	99	99	99	99	99	36.6	A
V-10233 / Roundup OriginalMax + N-Pa-K AMS	3 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	99	35.9	abc
Valor SX + Python / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.5 oz/a / 22 oz/a + 3 qt/a	86	94	99	99	99	99	34.5	a-d
Valor SX + IntRRo / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 1 pt/a / 22 oz/a + 3 qt/a	94	99	99	99	99	98	35.6	a-d
Sonic / Durango DMA + N-Pa-K AMS	4.5 oz/a / 24 oz/a + 3 qt/a	78	88	95	99	99	99	34.5	a-d
Enlite / Roundup OriginalMax + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 3 qt/a	80	99	99	96	98	98	34.3	a-d
Enlite / Roundup OriginalMax + Harmony SG + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 0.125 oz/a + 3 qt/a	86	99	99	98	99	99	30.3	efg
<b>POST I/POST V</b>									
Roundup WeatherMax + N-Pa-K AMS / Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a / 22 oz/a + 3 qt/a	0	99	93	87	96	99	32.2	def
Durango DMA + FirstRate + N-Pa-K AMS / Durango DMA + N-Pa-K AMS	24 oz/a + 0.3 oz/a + 3 qt/a / 24 oz/a + 3 qt/a	0	99	98	93	98	99	32.4	c-f
Flexstar SG + N-Pa-K AMS / Touchdown Total + N-Pa-K AMS	3 pt/a + 3 qt/a / 24 oz/a + 3 qt/a	0	99	99	98	99	99	32.9	b-f
<b>POST III</b>									
Classic + Harmony SG + Roundup OriginalMax + N-Pa-K AMS	0.33 oz/a + 0.05 oz/a + 22 oz/a + 3 qt/a	0	99	99	98	99	99	27.5	ghi
Roundup OriginalMax + Resource + NIS + N-Pa-K AMS	22 oz/a + 3 oz/a + 0.25% v/v + 3 qt/a	0	99	99	99	99	99	29.8	efg
Roundup OriginalMax + Cadet + NIS + N-Pa-K AMS	22 oz/a + 0.6 oz/a + 0.25% v/v + 3 qt/a	0	99	99	99	99	99	29.3	fgh
Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a	0	99	99	99	99	99	32.7	b-f
<b>LSD (P=0.10)</b>		6	3	1	2	1	2	3.6	

**Table 5. Performance of herbicide systems for velvetleaf control in soybean and grain yield at 13% at Rochester, MN, in 2009**

Treatment	Rate (rate/A)	Velvetleaf Control (% Control)					Yield (bu/A)
		6/29	7/6	7/13	7/20	7/28	
Untreated		0	0	0	0	0	3.5 j
Weed Free		100	100	100	100	100	33.4 a-e
<b>PRE/POST II</b>							
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	25.9 hi
Authority First / Raptor + Select + COC + 28%N	6.4 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	99	99	99	99	99	28.2 ghi
Gangster V + Gangster FR / Raptor + Select + COC + 28%N	2.5 oz/a + 0.5 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	96	99	99	99	99	25.4 l
<b>PRE/POST IV</b>							
Authority First / Roundup OriginalMax + N-Pa-K AMS	3.2 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	35.7 a-d
Authority Assist / Roundup OriginalMax + N-Pa-K AMS	5 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	34.9 a-d
IntRRo / Roundup WeatherMax + N-Pa-K AMS	2 qt/a / 22 oz/a + 3 qt/a	98	99	99	99	99	34.8 a-d
Gangster V + Gangster FR / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.4 oz/a / 22 oz/a + 3 qt/a	98	98	99	99	99	36.4 a-b
Prefix / Touchdown Total + N-Pa-K AMS	1 qt/a / 24 oz/a + 3 qt/a	97	96	97	98	98	34.6 a-d
Boundary / Touchdown Total + N-Pa-K AMS	1.5 pt/a / 24 oz/a + 3 qt/a	99	99	99	99	99	36.6 A
V-10233 / Roundup OriginalMax + N-Pa-K AMS	3 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	35.9 abc
Valor SX + Python / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.5 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	34.5 a-d
Valor SX + IntRRo / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 1 pt/a / 22 oz/a + 3 qt/a	99	99	99	99	99	35.6 a-d
Sonic / Durango DMA + N-Pa-K AMS	4.5 oz/a / 24 oz/a + 3 qt/a	99	98	99	99	99	34.5 a-d
Enlite / Roundup OriginalMax + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 3 qt/a	99	99	99	99	99	34.3 a-d
Enlite / Roundup OriginalMax + Harmony SG + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 0.125 oz/a + 3 qt/a	99	99	99	99	99	30.3 efg
<b>POST I/POST V</b>							
Roundup WeatherMax + N-Pa-K AMS / Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a / 22 oz/a + 3 qt/a	98	98	92	98	99	32.2 def
Durango DMA + FirstRate + N-Pa-K AMS / Durango DMA + N-Pa-K AMS	24 oz/a + 0.3 oz/a + 3 qt/a / 24 oz/a + 3 qt/a	99	99	99	99	99	32.4 c-f
Flexstar SG + N-Pa-K AMS / Touchdown Total + N-Pa-K AMS	3 pt/a + 3 qt/a / 24 oz/a + 3 qt/a	99	99	95	99	99	32.9 b-f
<b>POST III</b>							
Classic + Harmony SG + Roundup OriginalMax + N-Pa-K AMS	0.33 oz/a + 0.05 oz/a + 22 oz/a + 3 qt/a	94	99	96	99	99	27.5 ghi
Roundup OriginalMax + Resource + NIS + N-Pa-K AMS	22 oz/a + 3 oz/a + 0.25% v/v + 3 qt/a	99	99	97	98	98	29.8 efg
Roundup OriginalMax + Cadet + NIS + N-Pa-K AMS	22 oz/a + 0.6 oz/a + 0.25% v/v + 3 qt/a	99	99	99	99	99	29.3 fgh
Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a	96	99	97	99	99	32.7 b-f
<b>LSD (P=0.10)</b>		2	1	3	1	1	3.6

**Table 6. Soybean response to herbicide systems and grain yield at 13% at Rochester, MN, in 2009**

Treatment	Rate (rate/A)	Injury		Yield (bu/A)
		6/29	7/6	
		Injury (%)		
Untreated		0	0	3.5 j
Weed Free		0	0	33.4 a-e
<b>PRE/POST II</b>				
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	60	25	25.9 hi
Authority First / Raptor + Select + COC + 28%N	6.4 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	1	25	28.2 ghi
Gangster V + Gangster FR / Raptor + Select + COC + 28%N	2.5 oz/a + 0.5 oz/a / 4 oz/a + 6 oz/a + 1% v/v + 2.5% v/v	6	26	25.4 l
<b>PRE/POST IV</b>				
Authority First / Roundup OriginalMax + N-Pa-K AMS	3.2 oz/a / 22 oz/a + 3 qt/a	0	3	35.7 a-d
Authority Assist / Roundup OriginalMax + N-Pa-K AMS	5 oz/a / 22 oz/a + 3 qt/a	3	0	34.9 a-d
IntRRo / Roundup WeatherMax + N-Pa-K AMS	2 qt/a / 22 oz/a + 3 qt/a	0	3	34.8 a-d
Gangster V + Gangster FR / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.4 oz/a / 22 oz/a + 3 qt/a	4	6	36.4 a-b
Prefix / Touchdown Total + N-Pa-K AMS	1 qt/a / 24 oz/a + 3 qt/a	9	0	34.6 a-d
Boundary / Touchdown Total + N-Pa-K AMS	1.5 pt/a / 24 oz/a + 3 qt/a	0	1	36.6 A
V-10233 / Roundup OriginalMax + N-Pa-K AMS	3 oz/a / 22 oz/a + 3 qt/a	4	0	35.9 abc
Valor SX + Python / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 0.5 oz/a / 22 oz/a + 3 qt/a	0	4	34.5 a-d
Valor SX + IntRRo / Roundup OriginalMax + N-Pa-K AMS	2 oz/a + 1 pt/a / 22 oz/a + 3 qt/a	6	3	35.6 a-d
Sonic / Durango DMA + N-Pa-K AMS	4.5 oz/a / 24 oz/a + 3 qt/a	0	1	34.5 a-d
Enlite / Roundup OriginalMax + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 3 qt/a	4	4	34.3 a-d
Enlite / Roundup OriginalMax + Harmony SG + N-Pa-K AMS	2.8 oz/a / 22 oz/a + 0.125 oz/a + 3 qt/a	40	24	30.3 efg
<b>POST I/POST V</b>				
Roundup WeatherMax + N-Pa-K AMS / Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a / 22 oz/a + 3 qt/a	3	0	32.2 def
Durango DMA + FirstRate + N-Pa-K AMS / Durango DMA + N-Pa-K AMS	24 oz/a + 0.3 oz/a + 3 qt/a / 24 oz/a + 3 qt/a	9	0	32.4 c-f
Flexstar SG + N-Pa-K AMS / Touchdown Total + N-Pa-K AMS	3 pt/a + 3 qt/a / 24 oz/a + 3 qt/a	23	0	32.9 b-f
<b>POST III</b>				
Classic + Harmony SG + Roundup OriginalMax + N-Pa-K AMS	0.33 oz/a + 0.05 oz/a + 22 oz/a + 3 qt/a	39	25	27.5 ghi
Roundup OriginalMax + Resource + NIS + N-Pa-K AMS	22 oz/a + 3 oz/a + 0.25% v/v + 3 qt/a	30	10	29.8 efg
Roundup OriginalMax + Cadet + NIS + N-Pa-K AMS	22 oz/a + 0.6 oz/a + 0.25% v/v + 3 qt/a	33	10	29.3 fgh
Roundup WeatherMax + N-Pa-K AMS	22 oz/a + 3 qt/a	5	0	32.7 b-f
<b>LSD (P=0.10)</b>		<b>4</b>	<b>2</b>	<b>3.6</b>

1. Means followed by the same letter do not significantly differ (P=.10, LSD)