

## **Evaluation of the performance of weed control with an RR and STS stacked soybean system at Potsdam, MN in 2005.**

Breitenbach, Fritz R., Lisa M. Behnken, Angela L. White, and Matthew M. White

The objective of this trial was to evaluate weed control with an RR and STS stacked soybean system in southeastern Minnesota. The research site was a Port Byron silt loam with a pH test of 6.7 and soil test P and K levels of 65 ppm and 273 ppm, respectively. The previous crop was corn. The field was field cultivated twice prior to planting. The soybean hybrid, Garst 1827RR/STS, was planted on May 24, 2005 at a depth of 1.5 inches in 30-inch rows at 150,000 seeds/A. A randomized complete block design with four replications was used. Postemergence (POST I) 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 July 8, July 14, July 29 and September 30. Application dates, environmental conditions, and crop and weed stages are listed below.

Date	July 1
Treatment	POST I
Temperature (F)	
Air	68
Relative humidity (%)	58
Wind (mph)	7
Soil moisture	Dry
Soybean	
stage	V5
height (inch)	10
Wild proso millet	
weed density (ft <sup>2</sup> )	10.0
height (inch)	9.0
Common lambsquarters	
weed density (ft <sup>2</sup> )	2.4
height (inch)	2.8
Velvetleaf	
weed density (ft <sup>2</sup> )	0.6
height (inch)	7.8
Rainfall after application (inch)	
week 1	0.07
week 2	0
week 3	1.54

### **CONCLUSIONS**

Very slight injury was detected with the Harmony GT, Classic, Harmony GT + Classic, Classic + Select, and with Roundup WeatherMax treatments applied alone or in a tank mix with Harmony GT and/or Classic. Extreme treatments had a significantly higher percent of injury. Extreme injury increased significantly when tank mixed with either Harmony GT or Classic and injury was most pronounced when tank mixed with Harmony GT. However, soybean yield was not impacted by crop injury.

Significantly lower wild proso millet control was achieved with the Harmony GT + Classic + Select treatment on all ratings.

Common lambsquarters control was significantly lower in the Harmony GT + Classic + Select treatment on the July 8 and July 14 rating dates.

Significantly reduced common lambsquarters control was also observed in the Extreme treatment on the July 8 rating. Common lambsquarters control with Extreme increased significantly when tank mixed with Harmony GT compared to Extreme applied alone or tank mixed with Classic. The addition of Harmony GT and/or Classic to Roundup WeatherMax did not significantly improve common lambsquarters control.

All treatments provided excellent velvetleaf control on the July 14 and 29 rating dates. Early season weed control differences did not result in differences in soybean yields. (University of Minnesota Extension Service, Regional Center, Rochester)

**Table. Performance of weed control with an RR and STS stacked soybean system on July 8, July 14 and July 29 at Potsdam, MN in 2005.**

Treatment <sup>a</sup>	Rate	Injury	Wild proso millet control			Common lambsquarters control			Velvetleaf control			Soybean yield <sup>b</sup>
			7/8	7/14	7/29	7/7	7/24	7/29	7/8	7/14	7/29	
	(lb/A)	(%)	(%)			(%)			(%)			(bu/A)
<b>POST I</b>												
Roundup WeatherMax + AMS	22 oz + 3 lb	5	99	99	98	97	96	97	98	99	99	56
Roundup WeatherMax + Harmony GT + AMS	22 oz + 0.08 oz + 3 lb	5	99	99	99	97	96	96	98	99	99	57
Roundup WeatherMax + Harmony GT + AMS	22 oz + 0.17 oz + 3 lb	5	99	99	99	98	94	94	97	99	99	57
Roundup WeatherMax + Harmony GT + AMS	22 oz+ 0.33 oz + 3 lb	5	99	99	99	98	98	99	98	99	99	55
Roundup WeatherMax + Classic + AMS	22 oz+ 0.33 oz + 3 lb	5	99	99	99	96	97	97	98	99	99	57
Roundup WeatherMax + Harmony GT + Classic + AMS	22 oz + 0.33 oz + 0.33 oz + 3 lb	5	99	99	99	96	96	98	99	99	99	59
Roundup WeatherMax + Harmony GT + Classic + AMS	22 oz + 0.035 oz + 0.33 oz + 3 lb	5	99	99	98	98	93	96	97	99	98	59
Harmony GT + Classic + Select + AMS + COC	0.33 oz + 0.33 oz + 8 oz + 3 lb + 1%	5	70	80	90	70	74	91	70	97	99	60
Extreme + Harmony GT + NIS + AMS	3 pt + 0.33 oz + 0.25% + 3 lb	34	99	99	99	97	97	98	98	98	99	56
Extreme + Classic + NIS + AMS	3 pt + 0.33 oz + 0.25% + 3 lb	25	99	99	99	96	86	94	99	99	99	58
Extreme + NIS + AMS	3 pt + 0.25% + 3 lb	16	98	99	99	93	86	93	98	99	99	58
Untreated Check		0	0	0	0	0	0	0	0	0	0	30
LSD (P = 0.10)		1	1	2	2	2	3	3	2	1	1	6

a. AMS = spray grade ammonium sulfate; COC = crop oil concentrate, Helena; NIS = AGRI-DEX non-ionic surfactant, Helena.

b. Yield at 13% moisture.