

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 containing 3.2% organic matter 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 chisel plowed and field cultivated twice prior to planting. The soybean variety, 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)	9
Soil moisture	Dry
Soybean	
stage	V5
height (inch)	10
Wild proso millet	
weed density (ft ²)	10.0
height (inch)	9.0
Common lambsquarters	
weed density (ft ²)	2.4
height (inch)	2.8
Velvetleaf	
weed density (ft ²)	0.6
height (inch)	7.8
Rainfall after application (inch)	
week 1	0.07
week 2	0
week 3	1.54

Very slight injury was detected with the thifensulfuron, chlorimuron, thifensulfuron + chlorimuron, and chlorimuron + clethodim treatments, and with glyphosate treatments applied alone or in a tank mix with thifensulfuron and/or chlorimuron. Imazethapyr & glyphosate treatments had a significantly higher percent of injury. Imazethapyr & glyphosate injury increased significantly when tank mixed with either thifensulfuron or chlorimuron and injury was most pronounced when tank mixed with thifensulfuron. However, soybean yield was not impacted by crop injury.

Significantly lower wild proso millet control was achieved with the thifensulfuron + chlorimuron + clethodim treatment on all ratings.

Common lambsquarters control was significantly lower in the thifensulfuron + chlorimuron + clethodim treatment on the July 8 and July 14 rating dates. Significantly reduced common lambsquarters control was also observed in the imazethapyr & glyphosate treatment on the July 8 rating. Common lambsquarters control with imazethapyr & glyphosate increased significantly when tank mixed with thifensulfuron compared to imazethapyr & glyphosate applied alone or tank mixed with chlorimuron. The addition of thifensulfuron and/or chlorimuron to glyphosate 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 an RR and STS stacked soybean system for weed control in soybean on July 8, July 14 and July 29 at Potsdam, MN in 2005. (Breitenbach, Behnken, White, and White).

Treatment ^a	Rate	Injury	PANMI control			CHEAL control			ABUTH control			Soybean yield ^b
			7/8	7/14	7/29	7/7	7/24	7/29	7/8	7/14	7/29	
	(lb/A)	(%)	(%)			(%)			(%)			(bu/A)
POST I												
Glyphosate + AMS	0.77 + 3	5	99	99	98	97	96	97	98	99	99	56
Glyphosate + thifensulfuron + AMS	0.77 + 0.004 + 3	5	99	99	99	97	96	96	98	99	99	57
Glyphosate + thifensulfuron + AMS	0.77 + 0.008 + 3	5	99	99	99	98	94	94	97	99	99	57
Glyphosate + thifensulfuron + AMS	0.77 + 0.016 + 3	5	99	99	99	98	98	99	98	99	99	55
Glyphosate + chlorimuron + AMS	0.77 + 0.005 + 3	5	99	99	99	96	97	97	98	99	99	57
Glyphosate + thifensulfuron + chlorimuron + AMS	0.77 + 0.016 + 0.005 + 3	5	99	99	99	96	96	98	99	99	99	59
Glyphosate + thifensulfuron + chlorimuron + AMS	0.77 + 0.035 + 0.005 + 3	5	99	99	98	98	93	96	97	99	98	59
Thifensulfuron + chlorimuron + clethodim + AMS + COC	0.016 + 0.005 + 0.125 + 3 + 1%	5	70	80	90	70	74	91	70	97	99	60
Imazethapyr & glyphosate + thifensulfuron + NIS + AMS	0.059 & 0.76 + 0.016 + 0.25% + 3	34	99	99	99	97	97	98	98	98	99	56
Imazethapyr & glyphosate + chlorimuron + NIS + AMS	0.059 & 0.76 + 0.005 + 0.25% + 3	25	99	99	99	96	86	94	99	99	99	58
Imazethapyr & glyphosate + NIS + AMS	0.059 & 0.76 + 0.25% + 3	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.