

Evaluation of Targa for control of volunteer glyphosate resistant corn in soybean at Rochester, Minnesota in 2005.

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

The objective of this trial was to evaluate the performance of Targa for control of volunteer glyphosate resistant corn in soybean in southeastern Minnesota. The research site was a Lawler loam series containing 3.2% organic matter with a pH of 6.8 and soil test P and K levels of 52 ppm and 154 ppm, respectively. The previous crop was corn. The field was chisel plowed in the fall, spring disked and field cultivated twice before planting. The soybean variety, AgVenture PS 4192 RR, was planted on May 27, 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. 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 plots were taken on June 22, June 30, and July 6. Application dates, environmental conditions, and crop and weed stages are listed below.

Date	May 27	June 16
Treatment	PRE	POST
Temperature (F)		
air	52	74
soil	59	70
Relative humidity (%)	80	44
Wind (mph)	16	6
Soil Moisture	adequate	adequate
Cloud cover (%)	100	10
Soybean		
stage	seeded	V1
height (inch)	--	4.2
Giant Foxtail		
weed density (ft ²)	--	moderate
height (inch)	--	3.8
Corn		
weed density (ft ²)	--	moderate
height (inch)	--	6.8
Rainfall after application (inch)		
week 1	0.25	0.15
week 2	1.71	2.04
week 3	0.54	0.70

CONCLUSIONS

Targa caused injury to soybean at both rates, 5 oz/A and 10 oz/A, compared to no injury from the other treatments. Injury increased from 10% to 25% as rate of Targa increased from 5 oz/A to 10 oz/A. Control of giant foxtail was similar among treatments with PRE applications of FirstRate followed by POST applications of Targa or Select. Targa + Roundup WeatherMax provided the best giant foxtail control on June 22, 100% compared to 64% for all other treatments. However, by July 7, the FirstRate + Targa or Select resulted in similar control. Control of volunteer glyphosate resistant corn was similar for Targa at 10 oz/A, and Select, 85 and 88%, respectively, and greater than Targa at 5.0 oz/A, June 22 rating. By the June 30 and July 6 rating dates, all Targa and Select treatments achieved 100% control of the volunteer glyphosate resistant corn. (University of Minnesota Extension Service, Regional Center, Rochester, MN)

Table. Performance of Targa for control of volunteer glyphosate resistant corn in soybean on June 22, June 30, and July 6 at Rochester, MN in 2005.

Treatment ^a	Rate	Injury	Giant foxtail control			Glyphosate resistant corn control		
			6/22	6/30	7/6	6/22	6/30	7/6
	(rate/A)	(%)	(%)			(%)		
<u>Preemergence</u>								
FirstRate	0.6 oz	0	64	57	69	6	56	53
<u>Preemergence / Postemergence</u>								
FirstRate / Targa + COC + AMS	0.6 oz / 5 oz + 1% + 2 lb	10	64	92	94	68	100	100
FirstRate / Targa + COC + AMS	0.6 oz / 10 oz + 1% + 2 lb	25	64	92	97	85	100	100
FirstRate / Select + COC + AMS	0.6 oz / 8 oz + 1% + 2 lb	0	64	92	95	88	100	100
<u>Postemergence</u>								
Targa + Roundup WeatherMax + NIS + AMS	5 oz + 22 oz + 0.125% + 2 lb	0	100	97	95	69	100	100
Untreated		0	0	0	0	0	0	0
LSD (P=0.10)		0	3	8	8	8	7	3

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