

Weed Control in Reduced Tillage Soybean

Evaluation of atrazine, simazine, and isoxaflutole applied early preplant in glyphosate-resistant soybean. Krausz, Ronald F. and Bryan G. Young. This study was designed to evaluate soybean response to soil applied herbicides in weed-free conditions. The study was conducted on a Weir silt loam with 1.5% organic matter and pH 6.4 at the Belleville Research Center. Fertilizer applied was 50 and 150 lb/A P₂O₅ and K₂O, respectively, to an area that had been cropped to corn in 2001. Bergmann-Taylor brand 'B-T 369CR' glyphosate-resistant soybean was planted 1.0 inch deep at 75 lb/A into a no-till seedbed on May 30. Plots consisted of four rows with 30 inch row spacing, 28 ft long arranged in a randomized complete block design with 3 replications. The herbicides were broadcast applied with a CO₂ pressurized sprayer using 8002 flat fan tips at 40 PSI in 20 GPA water. Application timings were early preplant 30 days prior to planned planting date (EPP30), preemergence (PRE) and soybean stage V4 (V4). Monthly rainfall in inches was 2.7, 3.9, 3.5, 3.5, 2.0, 1.2, 3.9, 4.9, 6.6, 1.7, 3.7 and 3.6 in September, October, November, December, January, February, March, April, May, June, July and August, respectively. The study was weed-free.

Application information is listed below.

Date	Apr-15-02	May-31-02	Jun-27-02
Treatment	EPP30	PRE	V4
Air temperature (F)	74	86	78
Relative humidity (%)	74	52	70
Soil moisture	wet	normal	normal

soybean	
leaf no.	V3
height (inch)	6-8

Atrazine, simazine, and isoxaflutole applied 30 days early preplant caused no soybean stand reduction or necrosis regardless of rate. There was no difference in soybean grain yield due to herbicide or herbicide rate. Soybean grain yield ranged from 41 to 44 bu/A. (Dept. of Plant, Soil and General Agriculture, Southern Illinois University, Carbondale).

Table. Evaluation of atrazine, princep, and isoxaflutole applied early preplant in glyphosate-resistant soybean. (Krausz and Young)

Treatment	Application		Soybean yield bu/A	Soybean, days after planting ^a					
	Rate (lb/A)	Time		Stand reduction			Necrosis		
				14 %	28 %	56 %	14 %	28 %	56 %
Glyphosate/glyphosate/glyphosate+handweed	0.75/0.75/0.75	EPP30/PRE/V4		0	0	0	0	0	0
Glyphosate+atrazine/glyphosate/glyphosate+handweed	0.75+1.0/0.75/0.75	EPP30/PRE/V4		0	0	0	0	0	0
Glyphosate+atrazine/glyphosate/glyphosate+handweed	0.75+2.0/0.75/0.75	EPP30/PRE/V4		0	0	0	0	0	0
Glyphosate+simazine/glyphosate/glyphosate+handweed	0.75+1.0/0.75/0.75	EPP30/PRE/V4		0	0	0	0	0	0
Glyphosate+simazine/glyphosate/glyphosate+handweed	0.75+2.0/0.75/0.75	EPP30/PRE/V4		0	0	0	0	0	0
Glyphosate+isoxaflutole/glyphosate/glyphosate+handweed	0.75+0.094/0.75/0.75	EPP30/PRE/V4		0	0	0	0	0	0
LSD				0	0	0	0	0	0
P				1.0	1.0	1.0	1.0	1.0	1.0

^aRatings at 14, 28, and 56 days after planting were on Jun-13-02, Jun-27-02, and Jul-25-02, respectively.