

# Reduced Rates of Herbicides in Roundup-Ready Soybeans

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## Objective

To determine if reduced rates of herbicides can provide adequate weed control and show no yield loss in no-tillage soybean utilizing pre-emergence and post-emergence herbicide applications.

## Background

Crop Year:	1997	Soil Test:	N/A
Cooperator:	John Linville	Fertilizer Applied:	N/A
County/Town:	Champaign/ Woodstock	Herbicide:	See Methods
Drainage:	N/A	Variety:	Pioneer 9396 (RR)
Major Soil Type:	Brookston Silty Clay Loam	Planting Rate:	200,000 seeds/A
Previous Crop:	Corn	Planting Date:	May 11, 1997
Tillage:	None	Harvest Date:	October 11, 1997

## Materials and Methods

The plot size for this study was 20 feet wide and 300 feet in length. Each treatment was replicated three times. 2,4-D ester at 1.0 pt/A plus Prime Oil (COC) was added to treatments 1-7 and applied alone to treatment 8 to control existing weeds 23 days prior to planting. The 1X Canopy rate was 6.0 oz/A and 1X Squadron rate was 3.0 pt/A. The post-emergence application of Roundup Ultra at 1X rate was 1.5 pt/A and applied based upon the broadleaf weed height listed in the table. Annual grass height was 2.0" for 1/4X rate, 3.5" for 1/2X rate, and 6.5" for 1X rate

## Results

Treatment	Product and Rate <sup>1</sup>	Treatment Timing		Weed Control (% on August 4, 1997)			Soybean Yield	Treatment Cost <sup>2</sup>
		Height (in.)	DAP	An. Gr.	Corn	Velv.	(bu/A)	(\$/A)
1	Canopy (EPP) 1/2X (POST) 1/4X	<1	-23 40	89	89	94	67	\$23.78
2	Canopy (EPP) 1/2X (POST) 1/2X	<2	-23 47	94	99	99	63	\$26.00
3	Canopy (EPP) 1/2X (POST) 1X	3-5	-23 57	100	100	96	66	\$30.44
4	Squadron (EPP) 1/2X (POST) 1/4X	<1	-23 40	86	90	83	69	\$28.72
5	Squadron (EPP) 1/2X (POST) 1/2X	<2	-23 47	97	100	96	67	\$30.94
6	Squadron (EPP) 1/2X (POST) 1X	3-5	-23 57	99	100	83	67	\$35.38
7	Squadron (EPP) 1X		-23	84	20	83	66	\$29.16
8	Roundup (POST) 1X	3-5	51	97	100	99	66	\$23.21
LSD (0.05%)				5	2	10	NS	

1. Abbreviations: Height = annual grass height, DAP = days after planting, An. Gr. = annual grass (giant foxtail, barnyardgrass, and fall panicum), Vol. Corn = volunteer corn, Velv. = velvetleaf, bu/A = bushels per acre, EPP = early pre-plant application, POST = post-emergence application, LSD = least significant difference, NS = no significant difference

2 Treatment cost = cost of all herbicides and additives (including burndown), application cost at \$2.00/A/application, and Roundup-Ready technology fee of \$7.50/A.

## Summary and Notes

The weed pressure in this study was light to moderate. In treatments 4 and 6, some velvetleaf plants were nearly two times taller than were targeted at time of application because the lower control provided by Squadron and Roundup was less effective on these plants. The reduced annual grass control in treatments 1 and 4 is due to the lack of rapid soybean canopy closure after application, because the soybeans were only at the second trifoliate at application.

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