

## Evaluation of Roundup Ready Soybean Tolerance to Touchdown, Touchdown 5, and Roundup Ultra.

00-WF-NEMN-70

**OBJECTIVE:** Evaluate tolerance of Roundup Ready soybean to various formulations of glyphosate applied at two rates and two timings.

**SUMMARY:** Squadron caused 10% height reduction but caused no chlorosis. Touchdown 5, Touchdown, and Roundup Ultra applied at the V4 growth stage, caused no chlorosis regardless of rate. These herbicides applied at the R1 growth stage, caused chlorosis at 14 and 28 days after treatment (DAT), with chlorosis increasing as rate increased. Touchdown 5 applied at the V4 and R1 growth stage, caused 4 to 10% and 8 to 13% white speckling of leaves 14 DAT, respectively, with speckling increasing as rate increased. Touchdown 5, Touchdown, and Roundup Ultra caused no injury 56 DAT. There were no differences in soybean height, soybean maturity, or yield due to herbicide treatment. Yield ranged from 41 to 50 bu/A.

### HERBICIDES

ROUNDUP ULTRA 3 SL  
SQUADRON 2.33 EC  
TOUCHDOWN 3 SL  
TOUCHDOWN 5 5 SL

### WEEDS

CROP TOLERANCE ONLY

### CROP

SOYBEAN

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Evaluation of Roundup Ready Soybean Tolerance to Touchdown, Touchdown 5, and Roundup Ultra.

Project Code: 00-WF-NEMN-70 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

Weed Code

1. NA CROP TOLERANCE ONLY

Crop 1: GLXMA SOYBEAN Variety: P94B01 RR  
 Planting Method: SEEDED Planting Date: May-18-00  
 Rate: 75 LB/A Depth: 1.0 IN  
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 25 FT Reps: 3  
 Tillage Type: REDUCED-TILL Study Design: RCB  
 Previous Crop, Year: ZEAMX, 1999 Fertilizer applied: N 0 LB/A, P<sub>2</sub>O<sub>5</sub> 50 LB/A, K<sub>2</sub>O 150 LB/A

Texture: SILT LOAM % OM: 1.9 pH: 6.2 CEC: 11  
 P<sub>1</sub>: 58 LB/A, K: 254 LB/A

APPLICATION DESCRIPTION

	A	B	C
Application Date:	May-18-00	Jun-23-00	Jul-7-00
Time of Day:	6:00	8:30	10:00
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PPI	V4	R1
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	80 F	76 F	74 F
% Relative Humidity:	80	96	52
Wind Velocity, Unit:	5 MPH	0 MPH	3 MPH
Soil Moisture:	DRY		DRY

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	NA	GLXMA V4	GLXMA R1-V8
Height, Unit:	NA	7-8 IN	14-18 IN

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	NA		

APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	CO <sub>2</sub> SPRAY	CO <sub>2</sub> SPRAY	CO <sub>2</sub> SPRAY
Operating Pressure:	40 PSI	40 PSI	40 PSI
Nozzle Type:	FLAT FAN	FLAT FAN	FLAT FAN
Nozzle Size:	8002	8002	8002
Boom Length, Unit:	10 FT	10 FT	10 FT
Incorporation Equip.:	FC2X+CM		
Incorp. Depth, Unit:	2-4 IN		
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA

NOTES:

Harvested Oct-04-00, (2) 30 inch rows by 22 ft.

TABLE. EVALUATION OF ROUNDUP READY SOYBEAN TOLERANCE TO TOUCHDOWN, TOUCHDOWN 5, AND ROUNDUP ULTRA. PROJECT CODE:00-WF-NEMN-70

TREATMENT	FORM.	RATE	UNIT	PROD	RATE	APPL TIME	APPL CODE	YIELD	GLXMA, DAYS AFTER TREATMENT									MATURITY	HEIGHT		
									HEIGHT REDUCTION			CHLOROSIS			WHITE SPECKLE					DAP	INCH
									14	28	56	14	28	56	14	28	56				
									%	%	%	%	%	%	%	%	%				
1 NO HERBICIDE 1 HANDWEED								48	0	0	0	0	0	0	0	0	0	130	38		
2 SQUADRON	2.33	EC	0.87	LB A/A	3.0	PT/A	PPI A	43	10	10	10	0	0	0	0	0	0	130	39		
3 SQUADRON 3 TOUCHDOWN 5	2.33 5	EC SL	0.87 2.0	LB A/A LB A/A	3.0 3.2	PT/A PT/A	PPI A V4 B	46	10	10	10	0	0	0	4	0	0	130	40		
4 SQUADRON 4 TOUCHDOWN	2.33 3	EC SL	0.87 1.5	LB A/A LB AE/A	3.0 4.0	PT/A PT/A	PPI A V4 B	46	10	10	10	0	0	0	0	0	0	130	38		
5 SQUADRON 5 ROUNDUP ULTRA	2.33 3	EC SL	0.87 1.5	LB A/A LB AE/A	3.0 4.0	PT/A PT/A	PPI A V4 B	43	10	10	10	0	0	0	0	0	0	130	37		
6 SQUADRON 6 TOUCHDOWN 5	2.33 5	EC SL	0.87 4.0	LB A/A LB A/A	3.0 6.4	PT/A PT/A	PPI A V4 B	50	10	10	10	0	0	0	10	0	0	130	38		
7 SQUADRON 7 TOUCHDOWN	2.33 3	EC SL	0.87 3.0	LB A/A LB AE/A	3.0 8.0	PT/A PT/A	PPI A V4 B	47	10	10	10	0	0	0	0	0	0	130	38		
8 SQUADRON 8 ROUNDUP ULTRA	2.33 3	EC SL	0.87 3.0	LB A/A LB AE/A	3.0 8.0	PT/A PT/A	PPI A V4 B	50	10	10	10	0	0	0	0	0	0	130	40		
9 SQUADRON 9 TOUCHDOWN 5	2.33 5	EC SL	0.87 2.0	LB A/A LB A/A	3.0 3.2	PT/A PT/A	PPI A R1 C	41	10	10	10	6	3	0	8	0	0	130	38		
10 SQUADRON 10 TOUCHDOWN	2.33 3	EC SL	0.87 1.5	LB A/A LB AE/A	3.0 4.0	PT/A PT/A	PPI A R1 C	47	10	10	10	0	2	0	0	0	0	130	38		
11 SQUADRON 11 ROUNDUP ULTRA	2.33 3	EC SL	0.87 1.5	LB A/A LB AE/A	3.0 4.0	PT/A PT/A	PPI A R1 C	42	10	10	10	2	2	0	0	0	0	130	38		
12 SQUADRON 12 TOUCHDOWN 5	2.33 5	EC SL	0.87 4.0	LB A/A LB A/A	3.0 6.4	PT/A PT/A	PPI A R1 C	41	10	10	10	10	8	0	13	0	0	130	37		
13 SQUADRON 13 TOUCHDOWN	2.33 3	EC SL	0.87 3.0	LB A/A LB AE/A	3.0 8.0	PT/A PT/A	PPI A R1 C	43	10	10	10	10	13	0	0	0	0	130	37		
14 SQUADRON 14 ROUNDUP ULTRA	2.33 3	EC SL	0.87 3.0	LB A/A LB AE/A	3.0 8.0	PT/A PT/A	PPI A R1 C	42	10	10	10	10	12	0	0	0	0	130	38		
LSD								7	0	0	0	2	2	0	2	0	0	0	3		
P								0.06	1.0	1.0	1.0	0.01	0.01	1.0	0.01	1.0	1.0	1.0	0.7		

1. PROTOCOL: SIU - RFK.  
 2. RATING DATES:  
 14 DAYS AFTER V4 AND R1 APPLICATIONS ON JUL-7-00 AND JUL-21-00, RESPECTIVELY.  
 28 DAYS AFTER V4 AND R1 APPLICATIONS ON JUL-21-00 AND AUG-4-00, RESPECTIVELY.