

## Evaluation of Glyphosate-Tolerant Soybean Tolerance to Touchdown 5.

00-WF-NEM-170

**OBJECTIVE:** To evaluate the tolerance of Roundup Ready soybean to Touchdown 5 and Roundup Ultra applied at several rates and two growth stages.

**SUMMARY:** Squadron caused 10% height reduction but caused no chlorosis. Touchdown 5 and Roundup Ultra applied at the V4 growth stage, caused no chlorosis, regardless of rate. Touchdown 5 and Roundup Ultra 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 of soybean, caused 1 to 10% and 3 to 16% white speckling of leaves 14 DAT, respectively, with speckling increasing as rate increased. No injury was evident by 56 DAT with Touchdown 5 or Roundup Ultra. There were no differences in soybean height, soybean maturity, or yield due to herbicide treatment. Soybean yield ranged from 51 to 60 bu/A.

### HERBICIDES

ROUNDUP ULTRA 3 SL  
SQUADRON 2.33 EC  
TOUCHDOWN 5 5 SL

### WEEDS

CROP TOLERANCE ONLY

### CROP

SOYBEAN

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SOUTHERN ILLINOIS UNIVERSITY

## Evaluation of Glyphosate-Tolerant Soybean Tolerance to Touchdown 5.

Project Code: 00-WF-NEM-170 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:	4
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	9:00
Application Method:	SPRAY	SPRAY	SPRAY
Application Timing:	PPI	V4	R1
Applic. Placement:	BROSOI	BROFOL	BROFOL
Air Temp., Unit:	80 F	76 F	72 F
% Relative Humidity:	80	94	90
Wind Velocity, Unit:	5 MPH	1-2 MPH	3 MPH
Soil Moisture:	DRY	NORMAL	DRY

## CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	NA	GLXMA V4	GLXMA R1-V8
Height, Unit:	NA	8-10 IN	14-18 IN

## WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code:	NA	NA	NA

## APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	CO <sub>2</sub> SPRAY	CO <sub>2</sub> SPRAYER	CO <sub>2</sub> SPRAYER
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:	21.78 GPA	21.78 GPA	21.78 GPA

## NOTES:

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

TABLE. EVALUATION OF GLYPHOSATE-TOLERANT SOYBEAN TOLERANCE TO TOUCHDOWN 5. PROJECT CODE:00-WF-NEM-170

										GLXMA, DAYS AFTER TREATMENT								
TREATMENT	FORM.	RATE	UNIT	PROD	RATE	TIME	APPL CODE	YIELD	HEIGHT REDUCTION			CHLOROSIS			WHITE SPECKLE			
									14	28	56	14	28	56	14	28	56	
									BU/A	%	%	%	%	%	%	%	%	%
1 NO HERBICIDE 1 HANDWEED 1 CULTIVATE								56	0	0	0	0	0	0	0	0	0	
2 SQUADRON 2 CULTIVATE	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI	A	53	10	10	10	0	0	0	0	0	0	
3 SQUADRON 3 TOUCHDOWN 5 3 CULTIVATE	2.33 EC 5 SL	0.87 0.75	LB A/A LB A/A	3.0 1.2	PT/A PT/A	PPI V4	A B	60	10	10	10	0	0	0	1	0	0	
4 SQUADRON 4 TOUCHDOWN 5 4 CULTIVATE	2.33 EC 5 SL	0.87 1.0	LB A/A LB A/A	3.0 1.6	PT/A PT/A	PPI V4	A B	57	10	10	10	0	0	0	1	0	0	
5 SQUADRON 5 ROUNDUP ULTRA 5 CULTIVATE	2.33 EC 3 SL	0.87 0.75	LB A/A LB AE/A	3.0 2.0	PT/A PT/A	PPI V4	A B	55	10	10	10	0	0	0	0	0	0	
6 SQUADRON 6 TOUCHDOWN 5 6 CULTIVATE	2.33 EC 5 SL	0.87 1.5	LB A/A LB A/A	3.0 2.4	PT/A PT/A	PPI V4	A B	53	10	10	10	0	0	0	4	0	0	
7 SQUADRON 7 ROUNDUP ULTRA 7 CULTIVATE	2.33 EC 3 SL	0.87 1.125	LB A/A LB AE/A	3.0 3.0	PT/A PT/A	PPI V4	A B	55	10	10	10	0	0	0	0	0	0	
8 SQUADRON 8 TOUCHDOWN 5 8 CULTIVATE	2.33 EC 5 SL	0.87 2.0	LB A/A LB A/A	3.0 3.2	PT/A PT/A	PPI V4	A B	54	10	10	10	0	0	0	6	0	0	
9 SQUADRON 9 ROUNDUP ULTRA 9 CULTIVATE	2.33 EC 3 SL	0.87 1.5	LB A/A LB AE/A	3.0 4.0	PT/A PT/A	PPI V4	A B	51	10	10	10	0	0	0	0	0	0	
10 SQUADRON 10 TOUCHDOWN 5 10 CULTIVATE	2.33 EC 5 SL	0.87 3.0	LB A/A LB A/A	3.0 4.8	PT/A PT/A	PPI V4	A B	53	10	10	10	0	0	0	8	0	0	
11 SQUADRON 11 ROUNDUP ULTRA 11 CULTIVATE	2.33 EC 3 SL	0.87 2.25	LB A/A LB AE/A	3.0 6.0	PT/A PT/A	PPI V4	A B	53	10	10	10	0	0	0	0	0	0	
12 SQUADRON 12 TOUCHDOWN 5 12 CULTIVATE	2.33 EC 5 SL	0.87 4.0	LB A/A LB A/A	3.0 6.4	PT/A PT/A	PPI V4	A B	53	10	10	10	0	0	0	10	0	0	
13 SQUADRON 13 ROUNDUP ULTRA 13 CULTIVATE	2.33 EC 3 SL	0.87 3.0	LB A/A LB AE/A	3.0 8.0	PT/A PT/A	PPI V4	A B	53	10	10	10	0	0	0	0	0	0	
14 SQUADRON 14 TOUCHDOWN 5 14 CULTIVATE	2.33 EC 5 SL	0.87 0.75	LB A/A LB A/A	3.0 1.2	PT/A PT/A	PPI R1	A C	54	10	10	10	0	0	0	3	0	0	

(CONTINUED)

TABLE. EVALUATION OF GLYPHOSATE-TOLERANT SOYBEAN TOLERANCE TO TOUCHDOWN 5. PROJECT CODE:00-WF-NEM-170 (CONTINUED)

TREATMENT	FORM.	RATE	UNIT	PROD RATE	APPL TIME	APPL CODE	YIELD	GLXMA, DAYS AFTER TREATMENT								
								HEIGHT REDUCTION			CHLOROSIS			WHITE SPECKLE		
								14	28	56	14	28	56	14	28	56
							BU/A	%	%	%	%	%	%	%	%	%
15 SQUADRON	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI A	57	10	10	10	0	0	0	4	0	0
15 TOUCHDOWN 5	5 SL	1.0	LB A/A	1.6	PT/A	R1 C										
15 CULTIVATE																
16 SQUADRON	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI A	54	10	10	10	2	2	0	0	0	0
16 ROUNDUP ULTRA	3 SL	0.75	LB AE/A	2.0	PT/A	R1 C										
16 CULTIVATE																
17 SQUADRON	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI A	52	10	10	10	2	2	0	5	0	0
17 TOUCHDOWN 5	5 SL	1.5	LB A/A	2.4	PT/A	R1 C										
17 CULTIVATE																
18 SQUADRON	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI A	53	10	10	10	1	0	0	0	0	0
18 ROUNDUP ULTRA	3 SL	1.125	LB AE/A	3.0	PT/A	R1 C										
18 CULTIVATE																
19 SQUADRON	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI A	55	10	10	10	2	2	0	10	0	0
19 TOUCHDOWN 5	5 SL	2.0	LB A/A	3.2	PT/A	R1 C										
19 CULTIVATE																
20 SQUADRON	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI A	53	10	10	10	2	2	0	0	0	0
20 ROUNDUP ULTRA	3 SL	1.5	LB AE/A	4.0	PT/A	R1 C										
20 CULTIVATE																
21 SQUADRON	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI A	53	10	10	10	5	9	0	15	0	0
21 TOUCHDOWN 5	5 SL	3.0	LB A/A	4.8	PT/A	R1 C										
21 CULTIVATE																
22 SQUADRON	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI A	53	10	10	10	4	9	0	0	0	0
22 ROUNDUP ULTRA	3 SL	2.25	LB AE/A	6.0	PT/A	R1 C										
22 CULTIVATE																
23 SQUADRON	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI A	52	10	10	10	10	14	0	16	0	0
23 TOUCHDOWN 5	5 SL	4.0	LB A/A	6.4	PT/A	R1 C										
23 CULTIVATE																
24 SQUADRON	2.33 EC	0.87	LB A/A	3.0	PT/A	PPI A	52	10	10	10	10	15	0	0	0	0
24 ROUNDUP ULTRA	3 SL	3.0	LB AE/A	8.0	PT/A	R1 C										
24 CULTIVATE																
LSD							6	0	0	0	0.7	1	0	2	0	0
P							0.5	1.0	1.0	1.0	0.01	0.01	1.0	0.01	1.0	1.0

1. PROTOCOL: SIU/RFK.

2. RATING DATES:

14 DAYS AFTER V4 AND R1 APPLICATIONS ON 7-7-00 AND 7-21-00, RESPECTIVELY

28 DAYS AFTER V4 AND R1 APPLICATIONS ON 7-21-00 AND 8-4-00, RESPECTIVELY