

Evaluation of Roundup Ready Soybean Tolerance to Formulations of Glyphosate.

Project Code: 05-4-E120 Location: Belleville Research Center
 Investigator: Bryan Young

Investigator: Bryan Young, Associate Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
Trial Status: Final **Updated:** 11-14-05

Objective:

Determine crop safety of various glyphosate formulations on Roundup Ready soybeans.

Weed Code Common Name Scientific Name
 1. NA crop tolerance only

Crop 1: GLXMA soybean **Variety:** Asgrow 4403 RR
Planting Method: Seeded **Planting Date:** 5-12-05
Rate: 75 lb/A **Depth:** 1.0 IN
Row Spacing: 30 IN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 26 FT **Reps:** 4
Tillage Type: Reduced-Till **Study Design:** Randomized complete block
Previous Crop, Year: NONE , 2004

Field Prep./Maintenance: N 0 LB/A, P205 50 LB/A, K20 150 LB/A

Soil Name: Weir **% OM:** 1.6 **pH:** 6 **CEC:** 7
Texture: Silt loam **Fert. Level:** P1: 85 LB/A, K: 323 LB/A

APPLICATION DESCRIPTION

	A	B
Application Date:	07-07-05	07-11-05
Time of Day:	14:00	9:30
Application Method:	Spray	Spray
Application Timing:	R1	R2
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	86 F	73 F
% Relative Humidity:	36	96
Wind Velocity, Unit:	4 MPH	5 MPH
Soil Moisture:	NORMAL	BELNOR

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA R1	GLXMA R2
Height, Unit:	11-12 IN	11-13 IN

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan
Nozzle Size:	TT 110015	TT 110015
Boom Length, Unit:	7.5 FT	7.5 FT
Spray Volume, Unit:	10 GPA	10 GPA

NOTES:

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Weed Code
 Crop Code
 Rating Data Type
 Rating Unit
 Rating Date
 Trt-Eval Interval

GLXMA GLXMA GLXMA GLXMA GLXMA
 Yield Injury Injury Injury Injury
 bu/A Percent Percent Percent Percent
 10-05-05 08-04-05 08-08-05
 7 DAT 14 DAT 28 DA-A 28 DA-B

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	GLXMA Yield	GLXMA Injury	GLXMA Injury	GLXMA Injury	GLXMA Injury
1	NONTREATED									47	0	0	0	0
2	TOUCHDOWN TOTAL	4.17	SC	0.75	lb ae/a	23	fl oz/a	R1	A	48	0	0	0	0
3	ROUNDUP W-MAX	4.5	SL	0.75	lb ae/a	21.3	fl oz/a	R1	A	52	0	0	0	0
4	CLEAROUT 41 PLUS	3	L	0.75	lb ae/a	32	fl oz/a	R1	A	45	0	0	0	0
5	ROUNDUP ORIGINAL	3	SL	0.75	lb ae/a	32	fl oz/a	R1	A	49	0	0	0	0
5	ACTIVATOR 90	100	LIQ	0.5	% v/v	0.5	% v/v	R1	A					
6	TOUCHDOWN TOTAL	4.17	SC	1.13	lb ae/a	34.7	fl oz/a	R1	A	55	0	0	0	0
7	ROUNDUP W-MAX	4.5	SL	1.13	lb ae/a	32	fl oz/a	R1	A	47	0	0	0	0
8	CLEAROUT 41 PLUS	3	L	1.13	lb ae/a	48	fl oz/a	R1	A	47	0	0	0	0
9	ROUNDUP ORIGINAL	3	SL	1.13	lb ae/a	48	fl oz/a	R1	A	46	0	0	0	0
9	ACTIVATOR 90	100	LIQ	0.5	% v/v	0.5	% v/v	R1	A					
10	TOUCHDOWN TOTAL	4.17	SC	1.5	lb ae/a	46	fl oz/a	R1	A	46	0	0	0	0
11	ROUNDUP W-MAX	4.5	SL	1.5	lb ae/a	42.7	fl oz/a	R1	A	49	0	0	0	0
12	CLEAROUT 41 PLUS	3	L	1.5	lb ae/a	64	fl oz/a	R1	A	57	0	0	0	0
13	ROUNDUP ORIGINAL	3	SL	1.5	lb ae/a	64	fl oz/a	R1	A	46	0	0	0	0
13	ACTIVATOR 90	100	LIQ	0.5	% v/v	0.5	% v/v	R1	A					
14	TOUCHDOWN TOTAL	4.17	SC	2.25	lb ae/a	69	fl oz/a	R1	A	51	0	0	0	0
15	ROUNDUP W-MAX	4.5	SL	2.25	lb ae/a	64	fl oz/a	R1	A	44	1	3	0	0
16	CLEAROUT 41 PLUS	3	L	2.25	lb ae/a	96	fl oz/a	R1	A	59	0	0	0	0
17	ROUNDUP ORIGINAL	3	SL	2.25	lb ae/a	96	fl oz/a	R1	A	44	4	3	0	0
17	ACTIVATOR 90	100	LIQ	0.5	% v/v	0.5	% v/v	R1	A					
18	TOUCHDOWN TOTAL	4.17	SC	3.0	lb ae/a	92	fl oz/a	R1	A	46	0	0	0	0
19	ROUNDUP W-MAX	4.5	SL	3.0	lb ae/a	85	fl oz/a	R1	A	50	5	6	0	0
20	CLEAROUT 41 PLUS	3	L	3.0	lb ae/a	128	fl oz/a	R1	A	43	3	7	0	0
21	ROUNDUP ORIGINAL	3	SL	3.0	lb ae/a	128	fl oz/a	R1	A	43	10	20	0	0
21	ACTIVATOR 90	100	LIQ	0.5	% v/v	0.5	% v/v	R1	A					
22	ROUNDUP W-MAX	4.5	SL	0.75	lb ae/a	21.3	fl oz/a	R2	B	47	0	0	0	0
23	ROUNDUP W-MAX	4.5	SL	1.5	lb ae/a	42.7	fl oz/a	R2	B	54	0	0	0	0
24	ROUNDUP W-MAX	4.5	SL	3.0	lb ae/a	85	fl oz/a	R2	B	56	2	0	0	0
LSD (P=.05)										13.5	0.9	3.9	0.0	0.0
Replicate F										2.790	1.861	1.204	0.000	0.000
Replicate Prob(F)										0.0469	0.1443	0.3149	1.0000	1.0000
Treatment F										0.908	55.672	10.093	0.000	0.000
Treatment Prob(F)										0.5884	0.0001	0.0001	1.0000	1.0000

Trial Comments

1. Protocol: ISPOB (similar to 04-21N-E320).
2. Ratings: CI 7, 14 and 28 DAT.
3. Yield.
4. Blanket PRE application of Dual II Magnum at 1.27 lbai/A plus Firstrate 0.031 lbai/A was applied 10 ft wide to all plots including the nontreated on 5-13-05 (add Firstrate if necessary for broadleaf control).
5. DAT = Days after either R1 or R2 application. DA-A = Days after R1 application. DA-B = Days after R2 application. Ratings at 7 days after R1 and R2 application were on 7-14-05 and 7-18-05, respectively. Ratings at 14 days after R1 and R2 application were on 7-21-05 and 7-25-05, respectively.
6. At 14 DAT crop injury was percent of yellow flash of plant.
7. Harvested 10-5-05, (2) 30 inch rows by 23 ft..