

Evaluation of Roundup Ready Soybean Tolerance to Formulations of Glyphosate.

Project Code: 04-21N-E320 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: 10-14-04

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: AG 4403 RR
 Planting Method: Seeded Planting Date: 5-12-04
 Rate: 75 lb/A Depth: 1.0 IN
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 30 FT Reps: 4
 Tillage Type: Reduced-Till Study Design: Randomized complete block
 Previous Crop, Year: ZEAMX, 2003

Field Prep./Maintenance: N 0 LB/A, P2O5 50 LB/A, K2O 100 LB/A

Soil Name: Ebbert % OM: 2.7 pH: 6.2 CEC: 14
 Texture: Silt loam Fert. Level: P1: 115 LB/A, K: 500 LB/A

APPLICATION DESCRIPTION

	A	B
Application Date:	7-2-04	7-12-04
Time of Day:	9:00	9:00
Application Method:	Spray	Spray
Application Timing:	R1	R2
Applic. Placement:	BROFOL	BROFOL
Air Temp., Unit:	74 F	76 F
% Relative Humidity:	98	98
Wind Velocity, Unit:	5 MPH	2 MPH
Soil Moisture:	ABONOR	ABONOR

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GLXMA R1	GLXMA R2
Height, Unit:	10-11 IN	24-26 IN

WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code:	NA	NA

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:

Harvested 10-6-04, (2) 30 inch rows x 27 ft.

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Weed Code

Crop Code

Rating Data Type

Rating Unit

Rating Date

Trt-Eval Interval

GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Injur-L1	Injur-L1	Yield-L1	Injur-L2	Injur-L2	Yield-L2	Injur-L3	Injur-L3	Yield-L3
Percent	Percent	bu/A	Percent	Percent	bu/A	Percent	Percent	bu/A
		10-6-04	7-7-04	7-21-04	10-4-04	7-6-04	7-30-04	10-5-04
14 DAT	28 DAT		21 DA-A	35 DA-A		10 DAT	30 DAT	

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	GLXMA Injur-L1	GLXMA Injur-L1	GLXMA Yield-L1	GLXMA Injur-L2	GLXMA Injur-L2	GLXMA Yield-L2	GLXMA Injur-L3	GLXMA Injur-L3	GLXMA Yield-L3
1	NONTREATED									0	0	71	0	0	48	0	0	63
2	TOUCHDOWN TOTAL	4.17	SC	0.75	LB AE/A	23	FL OZ/A	R1	A	0	0	69	0	0	45	0	0	63
3	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	R1	A	0	0	70	0	0	45	0	0	64
4	CLEAROUT 41 PLUS	3	L	0.75	LB AE/A	32	FL OZ/A	R1	A	0	0	76	0	0	46	0	0	66
5	ROUNDUP ORIGINAL	3	SL	0.75	LB AE/A	32	FL OZ/A	R1	A	0	0	72	0	0	43	0	0	63
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	0	0	68	0	0	45	0	0	63
7	ROUNDUP W-MAX	4.5	SL	1.13	LB AE/A	32	FL OZ/A	R1	A	1	0	70	0	0	42	0	0	67
8	CLEAROUT 41 PLUS	3	L	1.13	LB AE/A	48	FL OZ/A	R1	A	0	0	69	0	0	42	0	0	64
9	ROUNDUP ORIGINAL	3	SL	1.13	LB AE/A	48	FL OZ/A	R1	A	0	0	68	0	0	47	1	0	65
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	0	0	68	0	0	49	0	0	63
11	ROUNDUP W-MAX	4.5	SL	1.5	LB AE/A	42.7	FL OZ/A	R1	A	3	1	67	0	0	44	3	0	64
12	CLEAROUT 41 PLUS	3	L	1.5	LB AE/A	64	FL OZ/A	R1	A	3	0	71	0	0	47	0	0	62
13	ROUNDUP ORIGINAL	3	SL	1.5	LB AE/A	64	FL OZ/A	R1	A	5	0	70	0	0	43	3	0	61
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	4	0	73	2	0	47	1	0	64
15	ROUNDUP W-MAX	4.5	SL	2.25	LB AE/A	64	FL OZ/A	R1	A	12	1	69	8	0	47	7	0	62
16	CLEAROUT 41 PLUS	3	L	2.25	LB AE/A	96	FL OZ/A	R1	A	9	2	66	3	0	44	3	0	62
17	ROUNDUP ORIGINAL	3	SL	2.25	LB AE/A	96	FL OZ/A	R1	A	15	4	69	10	0	44	10	0	62
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	10	2	70	5	0	46	3	0	63
19	ROUNDUP W-MAX	4.5	SL	3.0	LB AE/A	85	FL OZ/A	R1	A	19	5	67	28	0	41	13	0	60
20	CLEAROUT 41 PLUS	3	L	3.0	LB AE/A	128	FL OZ/A	R1	A	13	3	72	6	0	45	8	0	62
21	ROUNDUP ORIGINAL	3	SL	3.0	LB AE/A	128	FL OZ/A	R1	A	19	5	66	15	0	48	14	0	63
21	ACTIVATOR 90	100	LIQ	0.5	% V/V	0.5	% V/V	R1	A									
22	NONTREATED									0	0	73	0	0	48	0	0	60
23	ROUNDUP W-MAX	4.5	SL	1.5	LB AE/A	42.7	FL OZ/A	R2	B	7	0	66	1	0	48	3	0	62
24	ROUNDUP W-MAX	4.5	SL	3.0	LB AE/A	85	FL OZ/A	R2	B	15	6	69	28	0	43	9	0	61

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Weed Code	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Crop Code	Injur-L1	Injur-L1	Yield-L1	Injur-L2	Injur-L2	Yield-L2	Injur-L3	Injur-L3	Yield-L3
Rating Data Type	Percent	Percent	bu/A	Percent	Percent	bu/A	Percent	Percent	bu/A
Rating Unit			10-6-04	7-7-04	7-21-04	10-4-04	7-6-04	7-30-04	10-5-04
Rating Date				21 DA-A	35 DA-A		10 DAT	30 DAT	
Trt-Eval Interval	14 DAT	28 DAT							

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code											
LSD (P=.05)				2.4		1.2		6.6		2.9		0.0		5.8		1.6		0.0		2.3
Replicate F				1.745		0.599		0.833		2.518		0.000		7.981		0.063		0.000		11.613
Replicate Prob(F)				0.1659		0.6177		0.4805		0.0917		1.0000		0.0011		0.9790		1.0000		0.0001
Treatment F				57.671		16.493		1.102		68.812		0.000		1.240		60.590		0.000		4.143
Treatment Prob(F)				0.0001		0.0001		0.3660		0.0001		1.0000		0.2628		0.0001		1.0000		0.0001

Trial Comments

1. Protocol: ISPOB.
2. Ratings: C1 14 and 28 DAT.
3. Yield.
4. Blanket PRE application of Dual II Magnum at 1.27 lbai/A applied 10 ft wide to all plots including the nontreated on 5-13-04.
 Blanket POST application of Firstrate at 0.016 lbai/A + COC applied at V1, 10 ft wide to all plots including the nontreated on 6-8-04, to control XANST (common cocklebur).
5. DAT = Days after treatment. L1 = SIU. L2 = WIU. L3 = UI.
6. Ratings at 14 DAT were on 7-15-04 and 7-26-04 for the R1 and R2 applications, respectively.
 Ratings at 28 DAT were on 7-29-04 and 8-9-04 for the R1 and R2 applications, respectively.
7. Harvested 10-6-04, (2) 30 inch rows x 27 ft.