

## Relationship of Manganese and Soybean Yellow Flash with Glyphosate.

Project Code: 04-20A-MME70      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 if manganese is involved in soybean yellow flash from glyphosate applications and if foliar manganese can reduce the injury symptoms.

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

Crop 1:	GLXMA soybean	Variety:	AG 4403 RR
Planting Method:	Seeded	Planting Date:	5-22-04
Rate:	75 lb/A	Depth:	1.0 IN
Row Spacing:	30 IN		

Plot Width, Unit:	10 FT	Plot Length, Unit:	27 FT	Reps:	4
Tillage Type:	Reduced-Till	Study Design:	Randomized complete block		
Previous Crop, Year:	GLXMA, 2003				

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

Soil Name: Ebbert	% OM: 2.6	pH: 6.1	CEC: 13
Texture: Silt loam	Fert. Level: P1: 78 LB/A,	K: 423 LB/A	

## APPLICATION DESCRIPTION

	A	B	C
Application Date:		7-8-04	7-26-04
Time of Day:		13:00	14:00
Application Method:	Spray	Spray	Spray
Application Timing:	V4	R1	R3
Applic. Placement:	BROFOL	BROFOL	BROFOL
Air Temp., Unit:		82 F	76 F
% Relative Humidity:		70	58
Wind Velocity, Unit:		8-10 MPH	5-7 MPH
Soil Moisture:		ABONOR	ABONOR

## CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GLXMA NA	GLXMA R1	GLXMA R3
Height, Unit:	NA NA	18-20 IN	28-30 IN

## APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan
Nozzle Size:	TT 110015	TT 110015	TT 110015
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	12.5 GPA	12.5 GPA	12.5 GPA

## NOTES:

The V4 application was not applied.  
Harvested 10-4-04, (2) 30 inch rows x 24 ft.

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

GLXMA GLXMA GLXMA GLXMA GLXMA  
 Injury Injury Injury Moisture Yield  
 Percent Percent Percent Percent bu/A  
 10-4-04 10-4-04  
 7 DAT 14 DAT 28 DAT

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code					
1	NONTREATED										0	0	0	10.5 65
2	WEED FREE										0	0	0	10.3 66
3	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	V4	A					10.3 65
3	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	V4	A					
4	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	V4	A					10.4 66
4	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	V4	A					
4	MnEDTA (6%)	0.68	L	0.17	LB A/A	1	QT/A	V4	A					
5	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	V4	A					10.3 69
5	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	V4	A					
5	MnSO4-H2O	32.5	WP	0.17	LB A/A	8.4	OZ/A	V4	A					
6	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	V4	A					10.3 66
6	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	V4	A					
6	MnEDTA (6%)	0.68	L	0.17	LB A/A	1	QT/A	V4	A					
6	PX672	100	DRY	1.0	% W/W	8.5	LB/100 GAL	V4	A					
7	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	R1	B		12	4	4	10.4 62
7	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	R1	B					
8	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	R1	B		11	3	3	10.1 67
8	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	R1	B					
8	MnEDTA (6%)	0.68	L	0.17	LB A/A	1	QT/A	R1	B					
9	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	R1	B		10	3	3	10.2 61
9	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	R1	B					
9	MnSO4-H2O	32.5	WP	0.17	LB A/A	8.4	OZ/A	R1	B					
10	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	R1	B		11	4	4	10.1 61
10	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	R1	B					
10	MnEDTA (6%)	0.68	L	0.17	LB A/A	1	QT/A	R1	B					
10	PX-XPN	100	LIQ	1	PT/100 GAL	1	PT/100 GAL	R1	B					
11	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	R3	C		3	0	0	10.3 72
11	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	R3	C					
12	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	R3	C		1	0	0	10.1 66
12	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	R3	C					
12	MnEDTA (6%)	0.68	L	0.17	LB A/A	1	QT/A	R3	C					
13	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	R3	C		2	0	0	10.2 66
13	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	R3	C					
13	MnSO4-H2O	32.5	WP	0.17	LB A/A	8.4	OZ/A	R3	C					
14	ROUNDUP W-MAX	4.5	SL	1.55	LB AE/A	44	FL OZ/A	R3	C		1	0	0	10.1 63
14	AMS	100	DRY	1.0	% W/W	8.5	LB/100 GAL	R3	C					
14	MnEDTA (6%)	0.68	L	0.17	LB A/A	1	QT/A	R3	C					
14	PX-XPN	100	LIQ	1.0	PT/100 GAL	1	PT/100 GAL	R3	C					

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Weed Code					
Crop Code					
Rating Data Type	GLXMA	GLXMA	GLXMA	GLXMA	GLXMA
Rating Unit	Injury	Injury	Injury	Moisture	Yield
Rating Date	Percent	Percent	Percent	Percent	bu/A
Trt-Eval Interval	7 DAT	14 DAT	28 DAT	10-4-04	10-4-04

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code			
LSD (P=.05)								1.4	0.8	1.2	0.29	6.0
Replicate F								1.997	0.331	2.250	3.600	0.048
Replicate Prob(F)								0.1382	0.8029	0.1053	0.0218	0.9859
Treatment F								112.320	42.632	19.989	1.476	1.805
Treatment Prob(F)								0.0001	0.0001	0.0001	0.1706	0.0772

Trial Comments

1. Protocol: SIU-BGY.
2. Ratings: CI 7, 14 and 28 DAT.
3. Yield if injury present.
4. Blanket PRE application of Prowl and Scepter at 0.75 and 0.125 lbai/A, respectively on 5-23-04.
5. DAT = Days after treatment.
6. Ratings at 7 days after the R1 and R3 applications were on 7-15-04 and 8-2-04, respectively.  
 Ratings at 14 days after the R1 and R3 applications were on 7-22-04 and 8-9-04, respectively.  
 Ratings at 28 days after the R1 and R3 applications were on 8-5-04 and 8-23-04, respectively.
7. Harvested 10-4-04, (2) 30 inch rows x 24 ft.