

## AMS Replacements with Glyphosate - Winfield Solutions.

Trial ID: 08-19B-S70      Location: Belleville Res. Center

Investigator: Bryan Young, Professor, Southern Illinois University, bgyoung@siu.edu  
 City State Zip Country: Belleville IL 62221 USA  
 Trial Status: FINAL      Initiation Date: 06-18-08

Objectives: Evaluate the efficacy of glyphosate applied in hard water and with various water conditioning adjuvants compared with the standard ammonium sulfate.

Crop 1: GLXMA Soybean      Variety: AG 4404 RR/STS  
 Planting Method: SEED      Planting Date: 06-18-08  
 Rate, Unit: 75 LB/A      Depth, Unit: 1.0 IN  
 Row Spacing, Unit: 30 IN

Pest 1 Type: W      Code: SETFA      Setaria faberi Herrm.      foxtail, giant  
 Pest 2 Type: W      Code: ABUTH      Abutilon theophrasti Medicus      velvetleaf  
 Pest 3 Type: W      Code: IPOHE      Ipomoea hederacea (L.) jacq.      morningglory, annual

Plot Width, Unit: 10 FT      Site Type: FIELD  
 Plot Length, Unit: 25 FT      Tillage Type: REDUCED-TILL  
 Replications: 3      Study Design: Randomized Complete Block

Prior Crops, Year  
 1. ZEAMD 2007

Field Prep./Maintenance: N 0 LB/A, P205 50 LB/A, K20 100 LB/A

% OM: 2.9      Texture: SILT LOAM  
 pH: 6.2      Soil Name: BETHALTO  
 CEC: 14      Fert. Level: P1 79 LB/A, K 557 LB/A

## Application Description

A  
 Application Date: 07-14-08  
 Time of Day: 11:00  
 Application Method: Spray  
 Application Timing: 6-8"W  
 Application Placement: BROFOL  
 Applied By: TGM  
 Air Temperature, Unit: 84 F  
 % Relative Humidity: 50  
 Wind Velocity, Unit: 1 MPH  
 Dew Presence (Y/N): N  
 Soil Temperature, Unit: 87 F  
 Soil Moisture: ABONOR  
 % Cloud Cover: 0

07-14-08  
 Crop stage at application: V2  
 Height Min, Max (inch): 8 10

## Pest Stage At Each Application

Application Date: 07-14-08  
 Weed Code: SETFA  
 Stage Majority (leaves): 4  
 Stage Min, Max: 1 6  
 Height Majority: 10 IN  
 Height Min, Max: 2 12  
 Density, Unit: 6 FT2  
 Weed Code: ABUTH  
 Stage Majority (leaves): 4  
 Stage Min, Max: 1 5  
 Height Majority: 6 IN  
 Height Min, Max: 2 8  
 Density, Unit: 1 FT2  
 Weed Code: IPOHE  
 Stage Majority (leaves): 6  
 Stage Min, Max: COTY 10  
 Height Majority: 4 IN  
 Height Min, Max: 1 6  
 Density, Unit: 2 FT2

## Application Equipment

Appl. Equipment: CO2 sprayer  
 Operating Pressure: 30 PSI  
 Nozzle Type: Flat fan  
 Nozzle Size: XR 110015  
 Boom Length, Unit: 7.5 FT  
 Spray Volume, Unit: 10 GPA

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										SETFA	SETFA	ABUTH	ABUTH		
										GLXMA	GLXMA	07-28-08	08-11-08		
										07-28-08	08-11-08	07-28-08	08-11-08		
										Injury	Injury	Control	Control		
										Percent	Percent	Percent	Percent		
										14 DA-A	28 DA-A	14 DA-A	28 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	NONTREATED									0 a	0 a	0 b	0 b		
2	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
2	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			78 b	58 e		
3	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
3	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			92 a	94 a		
3	N-PAK AMS	100	SL	5	% v/v	5	% v/v	6-8"W	A						
4	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
4	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			95 a	95 a		
4	CLASS ACT NG	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A						
5	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
5	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			92 a	88 abc		
5	ALLIANCE	100	SL	1.25	% v/v	1.25	% v/v	6-8"W	A						
6	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
6	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			95 a	97 a		
6	AG 07046	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A						
7	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
7	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			92 a	83 a-d		
7	AG 07046	100	SL	1.25	% v/v	1.25	% v/v	6-8"W	A						
8	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
8	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			88 ab	77 cd		
8	PLACEMENT PROPAK	100	SL	1	% v/v	1	% v/v	6-8"W	A						
9	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
9	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			90 ab	72 de		
9	AG 07043	100	SL	1	% v/v	1	% v/v	6-8"W	A						
10	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
10	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			92 a	80 bcd		
10	AG 07089	100	SL	1	% v/v	1	% v/v	6-8"W	A						
11	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
11	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			93 a	93 ab		
11	AG 07090	100	SL	1	% v/v	1	% v/v	6-8"W	A						
12	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
12	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			93 a	96 a		
12	AG 03019	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A						
13	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
13	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			95 a	94 a		
13	AG 08040	100	SL					6-8"W	A						
14	HARD WATER (350 PPM)									0 a	0 a	99 a	99 a		
14	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A			92 a	87 abc		
14	CHOICE	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A						
LSD (P=.05)										0.0	0.0	0.0	0.0	12.2	13.8
Replicate F										0.000	0.000	0.000	0.000	1.871	2.669
Replicate Prob(F)										1.0000	1.0000	1.0000	1.0000	0.1740	0.0883
Treatment F										0.000	0.000	0.000	0.000	34.517	28.917
Treatment Prob(F)										1.0000	1.0000	1.0000	1.0000	0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

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Location: Belleville Res. Center

Pest Code	IPOHE	IPOHE
Crop Code		
Rating Date	07-28-08	08-11-08
Rating Data Type	Control	Control
Rating Unit	Percent	Percent
Rating Timing		
Trt-Eval Interval	14 DA-A	28 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code		
1	NONTREATED									0 d	0 g
2	HARD WATER (350 PPM)									83 c	70 f
2	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
3	HARD WATER (350 PPM)									87 abc	80 cde
3	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
3	N-PAK AMS	100	SL	5	% v/v	5	% v/v	6-8"W	A		
4	HARD WATER (350 PPM)									87 abc	80 cde
4	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
4	CLASS ACT NG	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A		
5	HARD WATER (350 PPM)									87 abc	80 cde
5	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
5	ALLIANCE	100	SL	1.25	% v/v	1.25	% v/v	6-8"W	A		
6	HARD WATER (350 PPM)									88 abc	82 bcd
6	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
6	AG 07046	100	SL	2.5	% v/v	2.5	% v/v	6-8"W	A		
7	HARD WATER (350 PPM)									88 abc	75 ef
7	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
7	AG 07046	100	SL	1.25	% v/v	1.25	% v/v	6-8"W	A		
8	HARD WATER (350 PPM)									83 c	80 cde
8	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
8	PLACEMENT PROPAK	100	SL	1	% v/v	1	% v/v	6-8"W	A		
9	HARD WATER (350 PPM)									83 c	78 de
9	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
9	AG 07043	100	SL	1	% v/v	1	% v/v	6-8"W	A		
10	HARD WATER (350 PPM)									85 bc	77 de
10	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
10	AG 07089	100	SL	1	% v/v	1	% v/v	6-8"W	A		
11	HARD WATER (350 PPM)									90 ab	85 abc
11	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
11	AG 07090	100	SL	1	% v/v	1	% v/v	6-8"W	A		
12	HARD WATER (350 PPM)									90 ab	88 a
12	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
12	AG 03019	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A		
13	HARD WATER (350 PPM)									92 a	86 ab
13	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
13	AG 08040	100	SL					6-8"W	A		
14	HARD WATER (350 PPM)									87 abc	82 bcd
14	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A		
14	CHOICE	100	SL	0.5	% v/v	0.5	% v/v	6-8"W	A		
LSD (P=.05)										6.3	6.2
Replicate F										1.630	5.672
Replicate Prob(F)										0.2153	0.0090
Treatment F										115.125	106.950
Treatment Prob(F)										0.0001	0.0001

Means followed by same letter do not significantly differ (P=.05, LSD)

## Trial Comments

1. Protocol: Winfield Solutions.
2. Ratings: CI/WC at 14 + 28 DAT.
3. Use hard water (350 ppm CaCO3 equivalent).
4. At the Belleville Research Center the above normal rainfall in spring 2008 (no more than four consecutive rain-free days between March 22 and June 15) delayed corn and soybean planting until mid-June.
5. DA-A = Days after 6-8"W application.
6. Not harvested.