

## AMS Replacements for Glyphosate Applications.

Project Code: 07-2A-E55      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:      1-23-08

**Objective:**

Compare loaded glyphosate efficacy in hard water with water conditioners and AMS on Roundup Ready soybean.

Weed Code	Common Name	Scientific Name
1. PANDI	panicum, fall	Panicum dichotomiflorum Michx.
2. AMATA	waterhemp, common	Amaranthus rudis Sauer
3. ABUTH	velvetleaf	Abutilon theophrasti Medicus
4. AMBEL	ragweed, common	Ambrosia artemisiifolia L.

Crop 1:                    GLXMA soybean                    Variety:                    Asgrow 4404 RR/STS  
 Planting Method: Seeded                    Planting Date: 6-3-07  
 Rate:                    75 lb/A                    Depth:                    1.0 IN  
 Row Spacing:                    30 IN

Plot Width, Unit: 10 FT                    Plot Length, Unit: 28 FT                    Reps: 3  
 Tillage Type: Reduced-Till                    Study Design: Randomized complete block  
 Previous Crop, Year: ZEAMX, 2006  
 Field Prep./Maintenance: N 0 LB/A, P205 0 LB/A, K20 0 LB/A

Soil Name: Weir                    % OM: 1.8                    pH: 6                    CEC: 7  
 Texture: Silt loam                    Fert. Level: P1: 90 LB/A, K: 419 LB/A

**APPLICATION DESCRIPTION**

**A**  
 Application Date: 6-27-07  
 Time of Day: 10:00  
 Application Method: Spray  
 Application Timing: 6-8"W  
 Applic. Placement: BROFOL  
 Air Temp., Unit: 86 F  
 % Relative Humidity: 88  
 Wind Velocity, Unit: 0 MPH  
 Dew Presence (Y/N): N  
 Soil Moisture: ABONOR  
 % Cloud Cover: 100

**CROP STAGE AT EACH APPLICATION**

**A**  
 Crop 1 Code, Stage: GLXMA V2-V3  
 Height, Unit: 8 IN

**WEED STAGE AT EACH APPLICATION**

**A**  
 Weed 1 Code: PANDI  
 Stage(leaves): 3-5  
 Height(inches): 4-8  
 Density: Medium  
 Weed 2 Code: AMATA  
 Stage(leaves): 4-18  
 Height(inches): 2-7  
 Density: Medium  
 Weed 3 Code: ABUTH  
 Stage(leaves): 3-7  
 Height(inches): 2-8  
 Density: Medium  
 Weed 4 Code: AMBEL  
 Stage(leaves): 4-10  
 Height(inches): 3-7  
 Density: High

**APPLICATION EQUIPMENT**

**A**  
 Appl. Equipment: CO2 sprayer  
 Operating Pressure: 40 PSI  
 Nozzle Type: Flat fan  
 Nozzle Size: XR 8002  
 Boom Length, Unit: 7.5 FT  
 Spray Volume, Unit: 15 GPA

**NOTES:**

AMS Replacements for Glyphosate Applications.

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Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	GLXMA Injury Percent	GLXMA Injury Percent	PANDI Control Percent	PANDI Control Percent	AMATA Control Percent	AMATA Control Percent	ABUTH Control Percent	ABUTH Control Percent	AMBEL Control Percent	AMBEL Control Percent				
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code										
1	NONTREATED																		
2	HARD WATER (350 PPM) 2 ROUNDUP W-MAX 2 AMS	4.5 100	SL DRY	0.387 1.0	lb ae/a % w/w	11 8.5	fl oz/a lb/100 gal	6-8"W 6-8"W	A A	0 a	0 a	86 c	87 a	93 ab	78 ab	92 ab	78 ab	95 a	85 a
3	HARD WATER (350 PPM) 3 ROUNDUP W-MAX 3 AMS	4.5 100	SL DRY	0.387 2.0	lb ae/a % w/w	11 17	fl oz/a lb/100 gal	6-8"W 6-8"W	A A	0 a	0 a	91 a	80 b	95 a	78 ab	95 a	78 ab	96 a	80 ab
4	HARD WATER (350 PPM) 4 ROUNDUP W-MAX 4 PX 400	4.5 100	SL LIQ	0.387 0.5	lb ae/a % v/v	11 0.5	fl oz/a % v/v	6-8"W 6-8"W	A A	0 a	0 a	80 d	70 c	79 d	50 c	93 ab	83 a	95 a	73 ab
5	HARD WATER (350 PPM) 5 ROUNDUP W-MAX 5 PX 07TN	4.5 100	SL LIQ	0.387 0.5	lb ae/a % v/v	11 0.5	fl oz/a % v/v	6-8"W 6-8"W	A A	0 a	0 a	85 c	80 b	86 c	65 b	88 bc	73 bc	88 c	72 b
6	HARD WATER (350 PPM) 6 ROUNDUP W-MAX 6 PL 712	4.5 100	SL LIQ	0.387 0.5	lb ae/a % v/v	11 0.5	fl oz/a % v/v	6-8"W 6-8"W	A A	0 a	0 a	87 bc	85 ab	89 bc	78 ab	85 cd	68 cd	92 b	80 ab
7	HARD WATER (350 PPM) 7 ROUNDUP W-MAX 7 CITRON	4.5 100	SL DRY	0.387 0.264	lb ae/a % w/w	11 2.2	fl oz/a lb/100 gal	6-8"W 6-8"W	A A	0 a	0 a	86 c	85 ab	93 ab	78 ab	91 ab	80 ab	96 a	76 ab
8	HARD WATER (350 PPM) 8 ROUNDUP W-MAX 8 CITRON H2O	4.5 100	SL LIQ	0.387 0.25	lb ae/a % v/v	11 1	fl oz/a qt/100 gal	6-8"W 6-8"W	A A	0 a	0 a	85 c	87 a	93 ab	78 ab	81 d	65 d	95 a	72 ab
9	HARD WATER (350 PPM) 9 ROUNDUP W-MAX 9 EXP-FA	4.5 100	SL DRY	0.387 0.24	lb ae/a % w/w	11 2	fl oz/a lb/100 gal	6-8"W 6-8"W	A A	0 a	0 a	87 bc	90 a	94 a	84 a	91 ab	81 a	93 ab	78 ab
10	DEIONIZED WATER 10 ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"W	A	0 a	0 a	90 ab	80 b	89 bc	69 b	84 cd	67 cd	91 bc	68 b
LSD (P=.05)										0.0	0.0	3.4	5.4	4.0	14.1	5.7	7.6	3.1	13.2
Replicate F										0.000	0.000	2.365	5.434	0.042	1.719	0.529	11.246	1.800	6.831
Replicate Prob(F)										1.0000	1.0000	0.1225	0.0142	0.9590	0.2075	0.5978	0.0007	0.1938	0.0062
Treatment F										0.000	0.000	566.359	217.962	449.405	28.143	220.084	91.569	815.457	30.288
Treatment Prob(F)										1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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

Trial Comments

1. Protocol: Precision Labs / Intx Microbials.
2. Ratings: CI/WC at 14 + 28 DAT.
3. Mixing instructions: Use hard water and deionized water, see treatment list.
4. DA-A = Days after 6-8"W application.