

AMS Replacement Study - Precision Labs.

Project Code: 05-22-S110 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:** 09-23-05

Objective:

Evaluate the performance of experimental adjuvants with glyphosate as a possible replacement to AMS.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. ABUTH	velvetleaf	Abutilon theophrasti Medicus
3. AMATA	waterhemp, common	Amaranthus rudis Sauer
4. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.

Crop 1: GLXMA soybean **Variety:** Asgrow 4403 RR
Planting Method: Seeded **Planting Date:** 5-18-05
Rate: 75 S/A **Depth:** 1.0 IN
Row Spacing: 30 IN

Plot Width, Unit: 10 FT **Plot Length, Unit:** 23 FT **Reps:** 3
Tillage Type: Reduced-Till **Study Design:** Randomized complete block
Previous Crop, Year: ZEAMX, 2004

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

Soil Name: Clarksdale **% OM:** 2.1 **pH:** 6.5 **CEC:** 10
Texture: Silt loam **Fert. Level:** P1: 99 LB/A, K: 493 LB/A

APPLICATION DESCRIPTION

A
Application Date: 06-22-05
Time of Day: 13:30
Application Method: Spray
Application Timing: 8"W
Applic. Placement: BROFOL
Air Temp., Unit: 89 F
% Relative Humidity: 39
Wind Velocity, Unit: 3 MPH
Soil Moisture: BELNOR

CROP STAGE AT EACH APPLICATION

A
Crop 1 Code, Stage: GLXMA V4
Height, Unit: 7-8 IN

WEED STAGE AT EACH APPLICATION

A
Weed 1 Code: SETFA
Stage (leaves): 5-7
Height (inches): 7-10
Density: High
Weed 2 Code: ABUTH
Stage (leaves): 6-7
Height (inches): 10-16
Density: Medium
Weed 3 Code: AMATA
Stage (leaves): 10-18
Height (inches): 10-12
Density: Low
Weed 4 Code: IPOHE
Stage (leaves): 3-8
Height (inches): 3-9
Density: Medium

APPLICATION EQUIPMENT

A
Appl. Equipment: CO2 sprayer
Operating Pressure: 40 PSI
Nozzle Type: Flat fan
Nozzle Size: XR 11001
Boom Length, Unit: 7.5 FT
Spray Volume, Unit: Per trt

NOTES:

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	GLXMA	GLXMA	SETFA	SETFA	ABUTH	ABUTH	AMATA	AMATA
										Injury Percent	Injury Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent	Control Percent
										07-06-05	07-20-05	07-06-05	07-20-05	07-06-05	07-20-05	07-06-05	07-20-05
										14 DAT	28 DA-A	14 DAT	28 DA-A	14 DAT	28 DA-A	14 DAT	28 DA-A
1	5 GPA									0	0	99	99	53	67	85	60
1	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
1	AMS	100	DRY	1.0	% w/w	8.5	lb/100 gal	8"W	A								
2	5 GPA									0	0	99	99	50	60	78	60
2	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
2	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	8"W	A								
3	5 GPA									0	0	99	99	70	83		
3	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
3	PL 331	100	LIQ	2.5	% v/v	2.5	% v/v	8"W	A								
4	5 GPA									0	0	99	99	67	85	70	
4	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
4	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A								
4	PL 332	100	DRY	0.075	% w/w	10	oz/100 gal	8"W	A								
5	5 GPA									0	0	99	99	58	78		
5	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
5	ARRAY	100	DRY	1.08	% w/w	9	lb/100 gal	8"W	A								
6	5 GPA									0	0	99	99	55	62		
6	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
6	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A								
7	5 GPA									0	0	99	99	50	62		60
7	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
8	5 GPA									0	0	99	99	63	88		
8	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
8	PX 711	100	LIQ	0.5	% v/v	0.5	% v/v	8"W	A								
9	5 GPA									0	0	99	99	63	82		
9	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
9	PX 711	100	LIQ	0.75	% v/v	0.75	% v/v	8"W	A								
10	7.5 GPA									0	0	99	99	58	65	90	
10	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
10	AMS	100	DRY	1.0	% w/w	8.5	lb/100 gal	8"W	A								
11	7.5 GPA									0	0	99	99	57	78		
11	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
11	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	8"W	A								
12	7.5 GPA									0	0	99	99	55	62	75	
12	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
12	PL 331	100	LIQ	2.5	% v/v	2.5	% v/v	8"W	A								
13	7.5 GPA									0	0	99	99	50	63	90	
13	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
13	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A								
13	PL 332	100	DRY	0.075	% w/w	10	oz/100 gal	8"W	A								
14	7.5 GPA									0	0	99	99	43	53	90	
14	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
14	ARRAY	100	DRY	1.08	% w/w	9	lb/100 gal	8"W	A								
15	7.5 GPA									0	0	99	99	47	60		
15	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
15	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A								
16	7.5 GPA									0	0	99	99	50	58		
16	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
17	7.5 GPA									0	0	99	99	57	68	80	
17	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
17	PX 711	100	LIQ	0.5	% v/v	0.5	% v/v	8"W	A								
18	7.5 GPA									0	0	99	99	53	73		
18	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A								
18	PX 711	100	LIQ	0.75	% v/v	0.75	% v/v	8"W	A								

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Weed Code		Crop Code		Rating Data Type		Rating Unit		Rating Date		Trt-Eval Interval		GLXMA	GLXMA	SETFA	SETFA	ABUTH	ABUTH	AMATA	AMATA
												Injury	Injury	Control	Control	Control	Control	Control	Control
												Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
												07-06-05	07-20-05	07-06-05	07-20-05	07-06-05	07-20-05	07-06-05	07-20-05
												14 DAT	28 DA-A	14 DAT	28 DA-A	14 DAT	28 DA-A	14 DAT	28 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code										
19	10 GPA											0	0	99	99	68	80	90	.
19	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A										
19	AMS	100	DRY	1.0	% w/w	8.5	lb/100 gal	8"W	A										
20	10 GPA											0	0	99	99	63	80		.
20	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A										
20	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	8"W	A										
21	10 GPA											0	0	99	99	55	78	95	.
21	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A										
21	PL 331	100	LIQ	2.5	% v/v	2.5	% v/v	8"W	A										
22	10 GPA											0	0	99	99	45	47		.
22	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A										
22	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A										
22	PL 332	100	DRY	0.075	% w/w	10	oz/100 gal	8"W	A										
23	10 GPA											0	0	99	99	65	82		.
23	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A										
23	ARRAY	100	DRY	1.08	% w/w	9	lb/100 gal	8"W	A										
24	10 GPA											0	0	99	99	33	45	83	.
24	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A										
24	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A										
25	10 GPA											0	0	99	99	42	67		.
25	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A										
26	10 GPA											0	0	99	99	45	65		.
26	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A										
26	PX 711	100	LIQ	0.5	% v/v	0.5	% v/v	8"W	A										
27	10 GPA											0	0	99	99	65	75		.
27	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A										
27	PX 711	100	LIQ	0.75	% v/v	0.75	% v/v	8"W	A										
LSD (P=.05)											0.0	0.0	0.0	0.0	18.3	21.6	28.4	.	
Replicate F											0.000	0.000	0.000	0.000	6.156	1.637	0.467		
Replicate Prob(F)											1.0000	1.0000	1.0000	1.0000	0.0040	0.2043	0.6575		
Treatment F											0.000	0.000	0.000	0.000	1.954	2.332	1.152		
Treatment Prob(F)											1.0000	1.0000	1.0000	1.0000	0.0200	0.0047	0.4842		

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Crop Code								Control	Control
Rating Data Type								Percent	Percent
Rating Unit								07-06-05	07-20-05
Rating Date								14 DAT	28 DA-A
Trt-Eval Interval									
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code
1	5 GPA								
1	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
1	AMS	100	DRY	1.0	% w/w	8.5	lb/100 gal	8"W	A
								45	47
2	5 GPA								
2	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
2	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	8"W	A
								43	40
3	5 GPA								
3	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
3	PL 331	100	LIQ	2.5	% v/v	2.5	% v/v	8"W	A
								45	52
4	5 GPA								
4	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
4	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A
4	PL 332	100	DRY	0.075	% w/w	10	oz/100 gal	8"W	A
								47	45
5	5 GPA								
5	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
5	ARRAY	100	DRY	1.08	% w/w	9	lb/100 gal	8"W	A
								43	47
6	5 GPA								
6	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
6	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A
								43	47
7	5 GPA								
7	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
								48	52
8	5 GPA								
8	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
8	PX 711	100	LIQ	0.5	% v/v	0.5	% v/v	8"W	A
								52	43
9	5 GPA								
9	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
9	PX 711	100	LIQ	0.75	% v/v	0.75	% v/v	8"W	A
								48	53
10	7.5 GPA								
10	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
10	AMS	100	DRY	1.0	% w/w	8.5	lb/100 gal	8"W	A
								48	45
11	7.5 GPA								
11	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
11	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	8"W	A
								50	45
12	7.5 GPA								
12	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
12	PL 331	100	LIQ	2.5	% v/v	2.5	% v/v	8"W	A
								47	45
13	7.5 GPA								
13	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
13	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A
13	PL 332	100	DRY	0.075	% w/w	10	oz/100 gal	8"W	A
								43	50
14	7.5 GPA								
14	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
14	ARRAY	100	DRY	1.08	% w/w	9	lb/100 gal	8"W	A
								43	47
15	7.5 GPA								
15	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
15	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A
								47	45
16	7.5 GPA								
16	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
								48	43
17	7.5 GPA								
17	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
17	PX 711	100	LIQ	0.5	% v/v	0.5	% v/v	8"W	A
								53	55
18	7.5 GPA								
18	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A
18	PX 711	100	LIQ	0.75	% v/v	0.75	% v/v	8"W	A
								57	55

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Crop Code				Control		Control					
Rating Data Type				Percent		Percent					
Rating Unit				07-06-05		07-20-05					
Rating Date				14 DAT		28 DA-A					
Trt-Eval Interval											
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code		
19	10 GPA									47	50
19	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A		
19	AMS	100	DRY	1.0	% w/w	8.5	lb/100 gal	8"W	A		
20	10 GPA									40	40
20	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A		
20	AMS	100	DRY	2.0	% w/w	17	lb/100 gal	8"W	A		
21	10 GPA									47	52
21	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A		
21	PL 331	100	LIQ	2.5	% v/v	2.5	% v/v	8"W	A		
22	10 GPA									45	52
22	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A		
22	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A		
22	PL 332	100	DRY	0.075	% w/w	10	oz/100 gal	8"W	A		
23	10 GPA									47	52
23	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A		
23	ARRAY	100	DRY	1.08	% w/w	9	lb/100 gal	8"W	A		
24	10 GPA									47	53
24	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A		
24	PX 202	100	DRY	0.264	% w/w	2.2	lb/100 gal	8"W	A		
25	10 GPA									38	40
25	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A		
26	10 GPA									47	47
26	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A		
26	PX 711	100	LIQ	0.5	% v/v	0.5	% v/v	8"W	A		
27	10 GPA									50	57
27	ROUNDUP ORIG MAX	4.5	SL	0.56	lb ae/a	16	fl oz/a	8"W	A		
27	PX 711	100	LIQ	0.75	% v/v	0.75	% v/v	8"W	A		
LSD (P=.05)										11.5	12.4
Replicate F										0.870	0.587
Replicate Prob(F)										0.4250	0.5599
Treatment F										0.890	1.196
Treatment Prob(F)										0.6179	0.2855

Trial Comments

1. Protocol: Precision Labs.
2. Ratings: CI/wc 14 and 28 DAT.
3. Mix Sizes:
 - 5 GPA = 0.079 gal (min .1584)
 - 7.5 GPA = 0.109 gal (min .1188)
 - 10 GPA = 0.139 gal (min .0792)
4. Nozzle size and spray pressure were constant for all treatments.
5. DA-A = Days after 8"W application.
6. AMATA population was low and not possible to evaluate AMATA control in all plots.