

Growmark AMS Replacement Study.

Project Code: 05-10C-W110 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: 11-14-05

Objective:

Determine the performance of "Replace" as an alternative to dry AMS alone and in combination with drift control adjuvants.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. ABUTH	velvetleaf	Abutilon theophrasti Medicus
4. IPOSS	morningglory, species	Ipomoea sp.

Crop 1: GLXMA soybean Variety: Asgrow 4403 RR
Planting Method: Seeded Planting Date: 5-12-05
Rate: 75 lb/A Depth: 1.0 IN
Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 24 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: Weir % OM: 2.1 pH: 5.6 CEC: 12
Texture: Silt loam Fert. Level: P1: 80 LB/A, K: 435 LB/A

APPLICATION DESCRIPTION

A
Application Date: 06-17-05
Time of Day: 13:30
Application Method: Spray
Application Timing: 8-12"W
Applic. Placement: BROFOL
Air Temp., Unit: 78 F
% Relative Humidity: 36
Wind Velocity, Unit: 6 MPH
Soil Moisture: NORMAL

CROP STAGE AT EACH APPLICATION

A
Crop 1 Code, Stage: GLXMA V3-V4
Height, Unit: 8-9 IN

WEED STAGE AT EACH APPLICATION

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

APPLICATION EQUIPMENT

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

NOTES:

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Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	GLXMA Injury Percent 07-01-05 14 DA-A	GLXMA Injury Percent 07-15-05 28 DA-A	SETFA Control Percent 07-01-05 14 DA-A	SETFA Control Percent 07-15-05 28 DA-A	XANST Control Percent 07-01-05 14 DA-A	XANST Control Percent 07-15-05 28 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code		
1	NONTREATED									0	0
2	DISTILLED WATER									0	0
2	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
3	DISTILLED WATER									0	0
3	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
3	AMS	100	DRY	1.0	% w/w	8.5	lb/100 gal	8-12"	W A	99	99
4	DISTILLED WATER									0	0
4	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
4	REPLACE	100	LIQ	0.25	% v/v	1	qt/100 gal	8-12"	W A	99	99
5	DISTILLED WATER									0	0
5	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
5	REPLACE	100	LIQ	0.25	% v/v	1	qt/100 gal	8-12"	W A	99	99
5	AIM (ADJUVANT)	100	LIQ	0.0156	% v/v	2	fl oz/100 gal	8-12"	W A	99	99
6	DISTILLED WATER									0	0
6	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
6	FS LIQUID AMS	100	LIQ	2.5	% v/v	2.5	gal/100 gal	8-12"	W A	99	99
6	ELECTRA STICK	100	LIQ	0.25	% v/v	0.25	gal/100 gal	8-12"	W A	99	99
7	DISTILLED WATER									0	0
7	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
7	AMS	100	DRY	1	% w/w	8.5	lb/100 gal	8-12"	W A	99	99
7	AIM (ADJUVANT)	100	LIQ	0.0156	% w/w	2	fl oz/100 gal	8-12"	W A	99	99
8	DISTILLED WATER									0	0
8	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
8	REPLACE	100	LIQ	0.25	% w/w	1	qt/100 gal	8-12"	W A	99	99
8	AMS	100	DRY	0.24	% w/w	2	lb/100 gal	8-12"	W A	99	99
9	DISTILLED WATER									0	0
9	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
9	REPLACE	100	LIQ	0.375	% w/w	3	pt/100 gal	8-12"	W A	99	99
10	DISTILLED WATER									0	0
10	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
10	REPLACE	100	LIQ	0.25	% w/w	1	qt/100 gal	8-12"	W A	99	99
10	INTERLOCK	100	LIQ	0.104	% w/w	2	fl oz/a	8-12"	W A	99	99
11	DISTILLED WATER									0	0
11	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
11	ARRAY	100	DRY	1.08	% w/w	9	lb/100 gal	8-12"	W A	99	99
12	HARD WATER (350 PPM)									0	0
12	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
13	HARD WATER (350 PPM)									0	0
13	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
13	AMS	100	DRY	1.0	% w/w	8.5	lb/100 gal	8-12"	W A	99	99
14	HARD WATER (350 PPM)									0	0
14	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
14	REPLACE	100	LIQ	0.25	% v/v	1	qt/100 gal	8-12"	W A	99	99
15	HARD WATER (350 PPM)									0	0
15	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
15	REPLACE	100	LIQ	0.25	% w/w	1	qt/100 gal	8-12"	W A	99	99
15	AMS	100	DRY	0.24	% w/w	2	lb/100 gal	8-12"	W A	99	99
16	HARD WATER (350 PPM)									0	0
16	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"	W A	99	99
16	REPLACE	100	LIQ	0.375	% w/w	3	pt/100 gal	8-12"	W A	99	99
LSD (P=.05)						0.0	0.0	0.2	0.0	0.0	0.0
Replicate F						0.000	0.000	1.000	0.000	0.000	0.000
Replicate Prob(F)						1.0000	1.0000	0.3798	1.0000	1.0000	1.0000
Treatment F						0.000	0.000	88170.407	0.000	0.000	0.000
Treatment Prob(F)						1.0000	1.0000	0.0001	1.0000	1.0000	1.0000

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Weed Code						ABUTH	ABUTH	IPOSS	IPOSS
Crop Code						Control	Control	Control	Control
Rating Data Type						Percent	Percent	Percent	Percent
Rating Unit						07-01-05	07-15-05	07-01-05	07-15-05
Rating Date						14 DA-A	28 DA-A	14 DA-A	28 DA-A
Trt-Eval Interval									
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code
1	NONTREATED							0	0
2	DISTILLED WATER							83	83
2	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
3	DISTILLED WATER							90	90
3	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
3	AMS	100	DRY	1.0	% w/w	8.5	lb/100 gal	8-12"W	A
4	DISTILLED WATER							82	82
4	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
4	REPLACE	100	LIQ	0.25	% v/v	1	qt/100 gal	8-12"W	A
5	DISTILLED WATER							87	88
5	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
5	REPLACE	100	LIQ	0.25	% v/v	1	qt/100 gal	8-12"W	A
5	AIM (ADJUVANT)	100	LIQ	0.0156	% v/v	2	fl oz/100 gal	8-12"W	A
6	DISTILLED WATER							96	93
6	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
6	FS LIQUID AMS	100	LIQ	2.5	% v/v	2.5	gal/100 gal	8-12"W	A
6	ELECTRA STICK	100	LIQ	0.25	% v/v	0.25	gal/100 gal	8-12"W	A
7	DISTILLED WATER							96	98
7	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
7	AMS	100	DRY	1	% w/w	8.5	lb/100 gal	8-12"W	A
7	AIM (ADJUVANT)	100	LIQ	0.0156	% w/w	2	fl oz/100 gal	8-12"W	A
8	DISTILLED WATER							82	86
8	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
8	REPLACE	100	LIQ	0.25	% w/w	1	qt/100 gal	8-12"W	A
8	AMS	100	DRY	0.24	% w/w	2	lb/100 gal	8-12"W	A
9	DISTILLED WATER							90	91
9	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
9	REPLACE	100	LIQ	0.375	% w/w	3	pt/100 gal	8-12"W	A
10	DISTILLED WATER							92	88
10	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
10	REPLACE	100	LIQ	0.25	% w/w	1	qt/100 gal	8-12"W	A
10	INTERLOCK	100	LIQ	0.104	% w/w	2	fl oz/a	8-12"W	A
11	DISTILLED WATER							94	94
11	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
11	ARRAY	100	DRY	1.08	% w/w	9	lb/100 gal	8-12"W	A
12	HARD WATER (350 PPM)							93	94
12	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
13	HARD WATER (350 PPM)							95	98
13	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
13	AMS	100	DRY	1.0	% w/w	8.5	lb/100 gal	8-12"W	A
14	HARD WATER (350 PPM)							72	75
14	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
14	REPLACE	100	LIQ	0.25	% v/v	1	qt/100 gal	8-12"W	A
15	HARD WATER (350 PPM)							87	84
15	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
15	REPLACE	100	LIQ	0.25	% w/w	1	qt/100 gal	8-12"W	A
15	AMS	100	DRY	0.24	% w/w	2	lb/100 gal	8-12"W	A
16	HARD WATER (350 PPM)							85	84
16	ROUNDUP W-MAX	4.5	SL	0.77	lb ae/a	22	fl oz/a	8-12"W	A
16	REPLACE	100	LIQ	0.375	% w/w	3	pt/100 gal	8-12"W	A
LSD (P=.05)								12.9	9.3
Replicate F								1.416	1.056
Replicate Prob(F)								0.2584	0.3606
Treatment F								26.569	51.218
Treatment Prob(F)								0.0001	0.0001
Trial Comments								0.0001	0.0001

1. Protocol: Growmark.
2. Ratings: CI/WC 14 and 28 DAT.
3. Hard water was created by adding CaCl2 at concentration of 350 ppm of CaCO3 equivalent.
4. DA-A = Days after 8-12"W application.