

AMS Replacements with Glyphosate - Agriliance.

Project Code: 07-2A-ME70 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:**

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

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

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:	11:00
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:	CYPES
Stage(leaves):	3-8
Height(inches):	4-8
Density:	Medium
Weed 3 Code:	AMATA
Stage(leaves):	4-18
Height(inches):	2-7
Density:	Medium
Weed 4 Code:	AMBEL
Stage(leaves):	4-10
Height(inches):	3-7
Density:	High
Weed 5 Code:	ABUTH
Stage(leaves):	3-7
Height(inches):	2-8
Density:	Medium

**APPLICATION EQUIPMENT**

A

Appl. Equipment:	CO2 sprayer
Operating Pressure:	40 PSI
Nozzle Type:	Flat fan
Nozzle Size:	XR 110015
Boom Length, Unit:	7.5 FT
Spray Volume, Unit:	10 GPA

NOTES:

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Weed Code	GLXMA	GLXMA	PANDI	PANDI	CYPES	CYPES	AMATA	AMATA
Crop Code	Injury	Injury	Control	Control	Control	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	7-11-07	7-25-07	7-11-07	7-25-07	7-11-07	7-25-07	7-11-07	7-25-07
Rating Date	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	28 DA-A	14 DA-A	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	0 a	0 a	77 d	80 c	40 c	62 b	90 a-d	86 abc
1	HARD WATER (350 PPM)																
1	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
2	HARD WATER (350 PPM)																
2	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
2	N-PAK AMS	100	LIQ	5	% v/v	5	% v/v	6-8"	A								
3	HARD WATER (350 PPM)																
3	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
3	CLASS ACT NG	100	LIQ	2.5	% v/v	2.5	% v/v	6-8"	A								
4	HARD WATER (350 PPM)																
4	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
4	ALLIANCE	100	LIQ	1.25	% v/v	1.25	% v/v	6-8"	A								
5	HARD WATER (350 PPM)																
5	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
5	AG 07003	100	LIQ	1	% v/v	1	% v/v	6-8"	A								
6	HARD WATER (350 PPM)																
6	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
6	AG 07003	100	LIQ	1.25	% v/v	1.25	% v/v	6-8"	A								
7	HARD WATER (350 PPM)																
7	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
7	AG 07003	100	LIQ	2	% v/v	2	% v/v	6-8"	A								
8	HARD WATER (350 PPM)																
8	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
8	PLACEMENT PROPAK	100	LIQ	1	% v/v	1	% v/v	6-8"	A								
9	HARD WATER (350 PPM)																
9	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
9	AG 07046	100	LIQ	2.5	% v/v	2.5	% v/v	6-8"	A								
10	HARD WATER (350 PPM)																
10	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
10	AG 07046	100	LIQ	1.25	% v/v	1.25	% v/v	6-8"	A								
11	HARD WATER (350 PPM)																
11	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
11	AG 03019	100	LIQ	0.5	% v/v	0.5	% v/v	6-8"	A								
12	NONTREATED																
13	HARD WATER (350 PPM)																
13	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
13	CHOICE	100	LIQ	0.5	% v/v	0.5	% v/v	6-8"	A								
14	HARD WATER (350 PPM)																
14	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	A								
14	QUEST	100	LIQ	0.25	% v/v	0.25	% v/v	6-8"	A								
LSD (P=.05)										0.0	0.0	6.5	6.3	10.7	8.1	5.5	10.8
Replicate F										0.000	0.000	0.704	0.971	8.848	0.606	2.908	2.209
Replicate Prob(F)										1.0000	1.0000	0.5037	0.3920	0.0012	0.5528	0.0725	0.1300
Treatment F										0.000	0.000	99.126	108.209	13.659	40.928	160.996	37.921
Treatment Prob(F)										1.0000	1.0000	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

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

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Weed Code	AMBEL	AMBEL	ABUTH	ABUTH
Crop Code				
Rating Data Type	Control	Control	Control	Control
Rating Unit	Percent	Percent	Percent	Percent
Rating Date	7-11-07	7-25-07	7-11-07	7-25-07
Trt-Eval Interval	14 DA-A	28 DA-A	14 DA-A	28 DA-A

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code				
1	HARD WATER (350 PPM)									87	b-e	77	bcd
1	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	68	de	55	fg
2	HARD WATER (350 PPM)									93	a	81	abc
2	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	89	a	83	ab
2	N-PAK AMS	100	LIQ	5	% v/v	5	% v/v	6-8"	W A				
3	HARD WATER (350 PPM)									89	abc	80	a-d
3	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	90	a	78	bc
3	CLASS ACT NG	100	LIQ	2.5	% v/v	2.5	% v/v	6-8"	W A				
4	HARD WATER (350 PPM)									90	ab	83	ab
4	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	75	bcd	73	bcd
4	ALLIANCE	100	LIQ	1.25	% v/v	1.25	% v/v	6-8"	W A				
5	HARD WATER (350 PPM)									83	def	75	cd
5	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	79	b	78	bc
5	AG 07003	100	LIQ	1	% v/v	1	% v/v	6-8"	W A				
6	HARD WATER (350 PPM)									83	ef	77	bcd
6	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	77	bc	68	cde
6	AG 07003	100	LIQ	1.25	% v/v	1.25	% v/v	6-8"	W A				
7	HARD WATER (350 PPM)									88	bcd	75	cd
7	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	73	b-e	63	d-g
7	AG 07003	100	LIQ	2	% v/v	2	% v/v	6-8"	W A				
8	HARD WATER (350 PPM)									82	f	73	d
8	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	66	e	53	g
8	PLACEMENT PROPAK	100	LIQ	1	% v/v	1	% v/v	6-8"	W A				
9	HARD WATER (350 PPM)									90	ab	85	a
9	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	87	a	89	a
9	AG 07046	100	LIQ	2.5	% v/v	2.5	% v/v	6-8"	W A				
10	HARD WATER (350 PPM)									83	def	73	d
10	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	75	bcd	65	def
10	AG 07046	100	LIQ	1.25	% v/v	1.25	% v/v	6-8"	W A				
11	HARD WATER (350 PPM)									89	abc	77	bcd
11	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	72	cde	67	de
11	AG 03019	100	LIQ	0.5	% v/v	0.5	% v/v	6-8"	W A				
12	NONTREATED									0	g	0	e
										0	f	0	h
13	HARD WATER (350 PPM)									85	c-f	77	bcd
13	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	75	bcd	60	efg
13	CHOICE	100	LIQ	0.5	% v/v	0.5	% v/v	6-8"	W A				
14	HARD WATER (350 PPM)									89	abc	78	a-d
14	ROUNDUP W-MAX	4.5	SL	0.387	lb ae/a	11	fl oz/a	6-8"	W A	78	bc	63	d-g
14	QUEST	100	LIQ	0.25	% v/v	0.25	% v/v	6-8"	W A				
LSD (P=.05)										4.9	7.4	7.5	10.2
Replicate F										0.723	2.161	0.083	2.237
Replicate Prob(F)										0.4947	0.1355	0.9206	0.1286
Treatment F										194.507	68.564	72.063	36.283
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0001

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

Trial Comments

1. Protocol: Agriliance.
2. CI/WC at 14 + 28 DAT.
3. Use hard water (350 ppm CaCO3 equivalent).
4. DA-A = Days after 6-8"W application.