

AMS Rate Titration with Glyphosate.

Project Code: 03-21S-MW70 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
 Trial Status: Final Updated: 9-3-03

Objective:

Determine the amount of AMS required to enhance the activity of glyphosate using deionized and hard water.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. ABUTH	velvetleaf	Abutilon theophrasti Medicus
3. XANST	cocklebur, common	Xanthium strumarium L.
4. AMBEL	ragweed, common	Ambrosia artemisiifolia L.

Crop 1: GLXMA soybean Variety: Asgrow 4403 RR
 Planting Method: Seeded Planting Date: 6-5-03
 Rate: 75 lb/A Depth: 1.0 IN
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 30 FT Reps: 3
 Tillage Type: Reduced-Till Study Design: Randomized complete block
 Previous Crop, Year: ZEAMX, 2002

Field Prep./Maintenance: N 0 LB/A, P205 50 LB/A, K2O 150 LB/A

Soil Name: Ebbert % OM: 1.4 pH: 5.7 CEC: 14
 Texture: Silt loam Fert. Level: P1: 97 LB/A, K: 291 LB/A

APPLICATION DESCRIPTION

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Application Date: 7-17-03
 Time of Day: 8:00
 Application Method: Spray
 Application Timing: 8"W
 Applic. Placement: BROFOL
 Air Temp., Unit: 69 F
 % Relative Humidity: 90
 Wind Velocity, Unit: 0 MPH
 Soil Moisture: BELNOR
 % Cloud Cover: 0

CROP STAGE AT EACH APPLICATION

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Crop 1 Code, Stage: GLXMA V5
 Height, Unit: 8 IN

WEED STAGE AT EACH APPLICATION

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Weed 1 Code: SETFA
 Stage(leaves): 10-15
 Height(inches): 8-12
 Density: High

Weed 2 Code: ABUTH
 Stage(leaves): 8-12
 Height(inches): 8-12
 Density: Low

Weed 3 Code: XANST
 Stage(leaves): 12-24
 Height(inches): 12-24
 Density: High

Weed 4 Code: AMBEL
Stage(leaves): 6-12
Height(inches): 6-12
Density: Low

APPLICATION EQUIPMENT

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Appl. Equipment: CO2 sprayer
Operating Pressure: 40 PSI
Nozzle Type: Flat fan
Nozzle Size: see note
Boom Length, Unit: 7.5 FT
Spray Volume, Unit: See note

NOTES:

Spray volume is 10 or 20 GPA, see treatment list.
Nozzle size is XR 11002 or XR 11004 for 10 and 20 GPA, respectively.
Not harvested.

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Weed Code												SETFA	SETFA	ABUTH	ABUTH	XANST	XANST	AMBEL	AMBEL	
Crop Code												GLXMA								
Rating Data Type												Injury	Control	Control	Control	Control	Control	Control	Control	Control
Rating Unit												Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Date												7-31-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03
Trt-Eval Interval												14 DA-A	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 No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Spray Volume	Volume Unit									
1	NONTREATED											0	0	0	0	0	0	0	0	0
2	DEIONIZED WATER											0	99	99	93	83	99	99	99	99
2	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		10 GAL/AC									
3	DEIONIZED WATER											0	99	99	96	80	99	99	99	99
3	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		10 GAL/AC									
3	AMS	100	DRY	0.5	% W/W	0.5	% W/W	8"W	A		10 GAL/AC									
4	DEIONIZED WATER											0	99	99	85	80	99	99	99	99
4	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		10 GAL/AC									
4	AMS	100	DRY	1.0	% W/W	1	% W/W	8"W	A		10 GAL/AC									
5	DEIONIZED WATER											0	99	99	88	84	99	99	99	98
5	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		10 GAL/AC									
5	AMS	100	DRY	1.5	% W/W	1.5	% W/W	8"W	A		10 GAL/AC									
6	DEIONIZED WATER											0	99	99	87	80	99	99	99	99
6	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		10 GAL/AC									
6	AMS	100	DRY	2.0	% W/W	2	% W/W	8"W	A		10 GAL/AC									
7	HARD WATER											0	99	99	87	68	99	99	99	99
7	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		10 GAL/AC									
8	HARD WATER											0	99	99	99	85	99	99	99	99
8	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		10 GAL/AC									
8	AMS	100	DRY	0.5	% W/W	0.5	% W/W	8"W	A		10 GAL/AC									
9	HARD WATER											0	99	99	96	76	99	98	99	98
9	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		10 GAL/AC									
9	AMS	100	DRY	1.0	% W/W	1	% W/W	8"W	A		10 GAL/AC									
10	HARD WATER											0	99	99	98	83	99	99	99	99
10	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		10 GAL/AC									
10	AMS	100	DRY	1.5	% W/W	1.5	% W/W	8"W	A		10 GAL/AC									
11	HARD WATER											0	99	99	93	78	99	99	99	96
11	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		10 GAL/AC									
11	AMS	100	DRY	2.0	% W/W	2	% W/W	8"W	A		10 GAL/AC									
12	DEIONIZED WATER											0	99	99	82	70	99	98	99	99
12	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		20 GAL/AC									

Weed Code	GLXMA	SETFA	SETFA	ABUTH	ABUTH	XANST	XANST	AMBEL	AMBEL
Crop Code	Injury	Control	Control	Control	Control	Control	Control	Control	Control
Rating Data Type	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit	7-31-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03	7-31-03	8-14-03
Rating Date	14 DA-A	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	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	Spray Volume	Volume Unit									
13	DEIONIZED WATER											0	99	99	95	82	99	99	99	98
13	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		20 GAL/AC									
13	AMS	100	DRY	0.5	% W/W	0.5	% W/W	8"W	A		20 GAL/AC									
14	DEIONIZED WATER											0	99	99	92	90	99	99	99	99
14	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		20 GAL/AC									
14	AMS	100	DRY	1.0	% W/W	1	% W/W	8"W	A		20 GAL/AC									
15	DEIONIZED WATER											0	99	99	99	95	99	99	99	99
15	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		20 GAL/AC									
15	AMS	100	DRY	1.5	% W/W	1.5	% W/W	8"W	A		20 GAL/AC									
16	DEIONIZED WATER											0	99	99	99	98	99	99	99	98
16	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		20 GAL/AC									
16	AMS	100	DRY	2.0	% W/W	2	% W/W	8"W	A		20 GAL/AC									
17	HARD WATER											0	99	99	87	72	99	99	99	99
17	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		20 GAL/AC									
18	HARD WATER											0	99	99	96	78	99	99	99	99
18	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		20 GAL/AC									
18	AMS	100	DRY	0.5	% W/W	0.5	% W/W	8"W	A		20 GAL/AC									
19	HARD WATER											0	99	99	92	73	99	99	99	99
19	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		20 GAL/AC									
19	AMS	100	DRY	1.0	% W/W	1	% W/W	8"W	A		20 GAL/AC									
20	HARD WATER											0	99	99	98	88	99	98	99	99
20	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		20 GAL/AC									
20	AMS	100	DRY	1.5	% W/W	1.5	% W/W	8"W	A		20 GAL/AC									
21	HARD WATER											0	99	99	99	98	99	99	99	99
21	ROUNDUP W-MAX	4.5	SL	0.75	LB AE/A	21.3	FL OZ/A	8"W	A		20 GAL/AC									
21	AMS	100	DRY	2.0	% W/W	2	% W/W	8"W	A		20 GAL/AC									
LSD (P=.05)												0.0	0.0	0.3	6.5	10.3	0.0	1.0	0.0	1.9
Replicate F												0.000	0.000	0.488	2.159	2.868	0.000	0.833	0.000	0.000
Replicate Prob(F)												1.0000	1.0000	0.6176	0.1287	0.0686	1.0000	0.4420	1.0000	1.0000
Treatment F												0.000	0.000	43000.730	85.837	30.377	0.000	3490.631	0.000	1042.879
Treatment Prob(F)												1.0000	1.0000	0.0001	0.0001	0.0001	1.0000	0.0001	1.0000	0.0001

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Trial Comments

1. Protocol: SIU-BGY.
2. Ratings: CI and WC 14 and 28 DAT.
3. This study was originally planned as 03-2A-E125.
4. DA-A = days after 8"W application.