

Southern Illinois University

AMS Replacements with Glyphosate - Winfield Solutions.

Trial ID: 12-10C-W80
 Location: Belleville Res. Center Investigator: Bryan Young

General Trial Information	
Study Director: Bryan Young	Investigator: Bryan Young Title: Professor
Trial Status: F - one-year/final	
Initiation Date: 6-1-12	
Trial Location	
City: Belleville	
State/Prov.: IL	
Postal Code: 62221	
Country: USA	

Objectives: Evaluate the efficacy of experimental adjuvant replacements for ammonium sulfate with Touchdown HiTech.

Personnel	
Study Director: Bryan Young	Title: Professor
Investigator: Bryan Young	
Affiliation: Southern Illinois University	
Address: 1205 Lincoln Drive - AG 176 - MC 4415	
Location: Carbondale IL	
Postal Code: 62901	E-mail: bgyoung@siu.edu
Phone No.: 618-453-7679	Mobile No.: 618-713-6471

Crop Description	
Crop 1: GLXMA Glycine max Soybean	Description: RR2Y
Variety: AG3832	Planting Date: 6-1-12
BBCH Scale: BSOY	Rate, Unit: 75 LB/A
Planting Method: SEEDED Seeded	
Depth, Unit: 1 IN	
Row Spacing, Unit: 30 IN	

Pest Description	
Pest 1 Type: W Code: ABUTH - Abutilon theophrasti Medik.	Common Name: velvetleaf
Pest 2 Type: W Code: IPOHE - Ipomoea hederacea (L.) Jacq.	Common Name: morningglory, ivyleaf
Pest 3 Type: W Code: SETFA - Setaria faberi Herrm.	Common Name: foxtail, giant

Site and Design	
Plot Width, Unit: 10 FT	Site Type: FIELD field
Plot Length, Unit: 24 FT	
Plot Area, Unit: 240 FT2	Tillage Type: REDTIL reduced-till
Replications: 3	Study Design: RACOB L Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	ZEAMD	2011

Maintenance	
No.	Maintenance Treatment Name
1.	N 0 LB/A, P205 0 LB/A, K20 150 LB/A

Soil Description	
% OM: 1.8	Texture: SIL SILT LOAM
pH: 6.9	Soil Name: PIERRON
CEC: 9	

Additional Measured Elements		
Element	Quantity	Unit
P1	100	LB/A
K	322	LB/A

Moisture and Weather Conditions	
Overall Moisture Conditions:	BELNOR below normal
Closest Weather Station: ICN - Belleville IL	Distance, Unit: 0.5 MI

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Application Description

	A
Application Date:	6-29-12
Time of Day:	6:30
Application Method:	Spray
Application Timing:	4-6"W
Application Placement:	BROFOL
Applied By:	JRK
Air Temperature, Unit:	79 F
% Relative Humidity:	58
Wind Velocity, Unit:	1 MPH
Wind Direction:	W
Dew Presence (Y/N):	Y yes
Soil Temperature, Unit:	79 F
Soil Moisture:	BELNOR
% Cloud Cover:	5
Next Rain Occurred On:	7-8-12

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	GLXMA BSOY
Stage Scale Used:	DESC
Stage Majority, Percent:	V2
Stage Minimum, Percent:	V1
Stage Maximum, Percent:	V2
Height, Unit:	4 IN
Height Minimum, Maximum:	3 4

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	ABUTH W DESC
Stage Majority, Percent:	4
Stage Minimum, Percent:	Coty
Stage Maximum, Percent:	6
Height, Unit:	4 IN
Height Minimum, Maximum:	1 6
Density, Unit:	0.5 FT2
Pest 2 Code, Type, Scale:	IPOHE W DESC
Stage Majority, Percent:	4
Stage Minimum, Percent:	Coty
Stage Maximum, Percent:	8
Height, Unit:	4 IN
Height Minimum, Maximum:	1 6
Density, Unit:	0.5 FT2
Pest 3 Code, Type, Scale:	SETFA W DESC
Stage Majority, Percent:	4
Stage Minimum, Percent:	1
Stage Maximum, Percent:	6
Height, Unit:	3 IN
Height Minimum, Maximum:	1 5
Density, Unit:	0.3 FT2

Application Equipment

	A
Appl. Equipment:	CO2 sprayer
Equipment Type:	BACSPR
Operation Pressure, Unit:	30 PSI
Nozzle Type:	TT
Nozzle Size:	110015
Boom Length, Unit:	7.5 FT
Spray Volume, Unit:	10 GPA

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Pest Code							GLXMA	GLXMA	ABUTH	ABUTH	IPOHE	IPOHE			
Crop Code							7-13-12	7-27-12	7-13-12	7-27-12	7-13-12	7-27-12			
Rating Date							Injury	Injury	Control	Control	Control	Control			
Rating Type							Percent	Percent	Percent	Percent	Percent	Percent			
Rating Unit															
Rating Timing															
Trt-Eval Interval							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 Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	HARD WATER (500 PPM) TOUCHDOWN HI-TECH	5	SL	0.375 lb ae/a		9.6 fl oz/a		4-6"W	A	0 a	0 a	47 h	57 f	55 f	68 f
2	HARD WATER (500 PPM) TOUCHDOWN HI-TECH N-PAK AMS	5 100	SL SL	0.375 lb ae/a 2.5 % v/v		9.6 fl oz/a 2.5 % v/v		4-6"W 4-6"W	A A	0 a	0 a	72 bcd	90 a	67 abc	80 a
3	HARD WATER (500 PPM) TOUCHDOWN HI-TECH N-PAK AMS	5 100	SL SL	0.375 lb ae/a 5 % v/v		9.6 fl oz/a 5 % v/v		4-6"W 4-6"W	A A	0 a	0 a	77 a	91 a	70 a	81 a
4	HARD WATER (500 PPM) TOUCHDOWN HI-TECH CLASS ACT NG	5 100	SL SL	0.375 lb ae/a 2.5 % v/v		9.6 fl oz/a 2.5 % v/v		4-6"W 4-6"W	A A	0 a	0 a	75 ab	89 ab	65 cd	75 b
5	HARD WATER (500 PPM) TOUCHDOWN HI-TECH CLASS ACT NG	5 100	SL SL	0.375 lb ae/a 1.25 % v/v		9.6 fl oz/a 1.25 % v/v		4-6"W 4-6"W	A A	0 a	0 a	70 cde	84 bc	64 cd	74 bc
6	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 8034	5 100	SL SL	0.375 lb ae/a 2 % v/v		9.6 fl oz/a 2 % v/v		4-6"W 4-6"W	A A	0 a	0 a	74 abc	87 ab	69 ab	74 bc
7	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 8034	5 100	SL SL	0.375 lb ae/a 1 % v/v		9.6 fl oz/a 1 % v/v		4-6"W 4-6"W	A A	0 a	0 a	66 f	80 c	62 de	70 ef
8	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 07043	5 100	SL SL	0.375 lb ae/a 1 % v/v		9.6 fl oz/a 1 % v/v		4-6"W 4-6"W	A A	0 a	0 a	66 f	72 d	65 bcd	74 bcd
9	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 11011	5 100	SL SL	0.375 lb ae/a 1 % v/v		9.6 fl oz/a 1 % v/v		4-6"W 4-6"W	A A	0 a	0 a	58 g	65 e	58 ef	70 ef
10	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 12030	5 100	SL SL	0.375 lb ae/a 1 % v/v		9.6 fl oz/a 1 % v/v		4-6"W 4-6"W	A A	0 a	0 a	67 ef	74 d	64 cd	72 de
11	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 12030	5 100	SL SL	0.375 lb ae/a 0.5 % v/v		9.6 fl oz/a 0.5 % v/v		4-6"W 4-6"W	A A	0 a	0 a	68 def	72 d	61 de	70 ef
12	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 12030 AG 02013	5 100 100	SL SL SL	0.375 lb ae/a 1 % v/v 4 fl oz/a		9.6 fl oz/a 1 % v/v 4 fl oz/a		4-6"W 4-6"W 4-6"W	A A A	0 a	0 a	70 c-f	70 de	65 bcd	72 cd
13	NONTREATED							0 a	0 a	0 i	0 g	0 g	0 g		
LSD (P=.05)							0.0	0.0	4.1	5.7	4.3	2.2			
Standard Deviation							0.0	0.0	2.4	3.4	2.6	1.3			
CV							0.0	0.0	3.91	4.69	4.37	1.88			
Replicate F							0.000	0.000	1.808	0.385	0.514	5.402			
Replicate Prob(F)							1.0000	1.0000	0.1856	0.6845	0.6044	0.0116			
Treatment F							0.000	0.000	208.466	152.334	149.386	788.150			
Treatment Prob(F)							1.0000	1.0000	0.0001	0.0001	0.0001	0.0001			

Means followed by same letter do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval							SETFA 7-13-12 Control Percent 14 DA-A	SETFA 7-27-12 Control Percent 28 DA-A	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate Unit	Other Rate Rate Unit	Other Rate Rate Unit	Growth Stage	Appl Code	
1	HARD WATER (500 PPM) TOUCHDOWN HI-TECH	5	SL	0.375 lb ae/a	9.6 fl oz/a		4-6"W	A	
2	HARD WATER (500 PPM) TOUCHDOWN HI-TECH N-PAK AMS	5 100	SL SL	0.375 lb ae/a 2.5 % v/v	9.6 fl oz/a 2.5 % v/v		4-6"W 4-6"W	A A	
3	HARD WATER (500 PPM) TOUCHDOWN HI-TECH N-PAK AMS	5 100	SL SL	0.375 lb ae/a 5 % v/v	9.6 fl oz/a 5 % v/v		4-6"W 4-6"W	A A	
4	HARD WATER (500 PPM) TOUCHDOWN HI-TECH CLASS ACT NG	5 100	SL SL	0.375 lb ae/a 2.5 % v/v	9.6 fl oz/a 2.5 % v/v		4-6"W 4-6"W	A A	
5	HARD WATER (500 PPM) TOUCHDOWN HI-TECH CLASS ACT NG	5 100	SL SL	0.375 lb ae/a 1.25 % v/v	9.6 fl oz/a 1.25 % v/v		4-6"W 4-6"W	A A	
6	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 8034	5 100	SL SL	0.375 lb ae/a 2 % v/v	9.6 fl oz/a 2 % v/v		4-6"W 4-6"W	A A	
7	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 8034	5 100	SL SL	0.375 lb ae/a 1 % v/v	9.6 fl oz/a 1 % v/v		4-6"W 4-6"W	A A	
8	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 07043	5 100	SL SL	0.375 lb ae/a 1 % v/v	9.6 fl oz/a 1 % v/v		4-6"W 4-6"W	A A	
9	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 11011	5 100	SL SL	0.375 lb ae/a 1 % v/v	9.6 fl oz/a 1 % v/v		4-6"W 4-6"W	A A	
10	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 12030	5 100	SL SL	0.375 lb ae/a 1 % v/v	9.6 fl oz/a 1 % v/v		4-6"W 4-6"W	A A	
11	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 12030	5 100	SL SL	0.375 lb ae/a 0.5 % v/v	9.6 fl oz/a 0.5 % v/v		4-6"W 4-6"W	A A	
12	HARD WATER (500 PPM) TOUCHDOWN HI-TECH AG 12030 AG 02013	5 100 100	SL SL SL	0.375 lb ae/a 1 % v/v 4 fl oz/a	9.6 fl oz/a 1 % v/v 4 fl oz/a		4-6"W 4-6"W 4-6"W	A A A	
13	NONTREATED							0 f	0 d
LSD (P=.05)							2.6	4.4	
Standard Deviation							1.6	2.6	
CV							1.8	2.98	
Replicate F							1.367	3.919	
Replicate Prob(F)							0.2739	0.0337	
Treatment F							878.267	309.384	
Treatment Prob(F)							0.0001	0.0001	

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Trial Comments

1. Protocol: Winfield Solutions.
2. Ratings: CI/WC at 14 and 28 DAT.
3. Mixing order: Water (at least 75% of the water), Adjuvant (water conditioner), Herbicide.
4. Mixing: Use hardwater (500 PPM).

HARD WATER (500 PPM) = Ca + Mg hard water.

HARD WATER MIXING INSTRUCTIONS:

To make 1 gallon of 500 ppm Ca + Mg hard water use the formula:

2.24 g of $\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$ (Calcium Chloride Dihydrate)

0.77 g of $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ (Magnesium Chloride Hexahydrate)

1 gallon distilled water

Be sure to use the dihydrate form of the calcium chloride and the hexahydrate form of the magnesium chloride.

Be sure to stir in the salts to insure that the solutions are all homogeneous before use.

5. Not harvested.