

Southern Illinois University

Winfield Solutions - AMS Replacements with Glyphosate.

Trial ID: 13-10A-E100 Location: Belleville Res. Center Trial Year: 2013
Investigator: Bryan Young

Trial Status: F one-year/final Initiation Date: 7-13-13 Completion Date: 8-28-13		Trial Location
City: Belleville State/Prov.: Illinois IL Postal Code: 62221	Country: USA	

Objectives:
Evaluate the efficacy of experimental adjuvant replacements for ammonium sulfate with Touchdown Hi-Tech.

Study Director: Bryan Young Organization: Southern Illinois University Address: 1205 Lincoln Drive - AG 176 - MC 4415 City+State/Prov: Carbondale IL Postal Code: 62901 Country: USA		Title: Professor Phone No.: 618-453-7679 Mobile No.: 618-713-6471 E-mail: bgyoung@siu.edu
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Crop 1: GLXMA Glycine max Soybean Variety: AG3832 BBCH Scale: BSOY Description: RR2Y		Crop Description
Planting Rate, Unit: 75 LB/A Depth, Unit: 1 IN Row Spacing, Unit: 30 IN	Planting Date: 7-13-13 Planting Method: SEEDED	

Pest 1 Type: W Code: ABUTH Abutilon theophrasti Medik. Common Name: velvetleaf		Pest Description
Pest 2 Type: W Code: AMATA Amaranthus rudis Sauer Common Name: waterhemp, common		
Pest 3 Type: W Code: SETFA Setaria faberi Herm. Common Name: foxtail, giant		
Pest 4 Type: W Code: IPOHE Ipomoea hederacea (L.) Jacq. Common Name: morningglory, ivyleaf		

Treated Plot Width: 7.5 FT Total Plot Width: 10 FT Treated Plot Length: 30 FT Total Plot Length: 30 FT		Site and Design Site Type: FIELD Experimental Unit: 1 PLOT Tillage Type: REDTIL reduced-till Study Design: RACOB� Randomized Complete Block (RCB)
Replications: 3 Untreated Arrangement: INCLUDED single control randomized in each block		

No.	Previous Crop	Year
1.	NON-CROP	2012

Maintenance	
No. 1.	Maintenance Product Name N 0 LB/A, P2O5 0 LB/A, K2O 100 LB/A

% OM: 2.8 Texture: SIL silt loam pH: 6.5 Soil Name: Pierron CEC: 9		Soil Description									
Additional Measured Elements											
<table border="1"> <thead> <tr> <th>Element</th> <th>Quantity</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>87</td> <td>lb/A</td> </tr> <tr> <td>K</td> <td>340</td> <td>lb/A</td> </tr> </tbody> </table>	Element		Quantity	Unit	P1	87	lb/A	K	340	lb/A	
Element	Quantity		Unit								
P1	87	lb/A									
K	340	lb/A									

Overall Moisture Conditions: ABONOR Closest Weather Station: ICN - Belleville IL		Moisture and Weather Conditions Distance, Unit: 0.5 MI
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No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	6-2-13					7	DAY	50	80	F
2.	6-9-13					7	DAY	59	94	F
3.	6-10-13	0.48	IN	RAIN	rain	2	DAY			
4.	6-16-13					7	DAY	61	90	F
5.	6-17-13	2.16	IN	RAIN	rain	3	DAY			
6.	6-23-13					7	DAY	64	92	F
7.	6-23-13	5.33	IN	RAIN	rain	2	DAY			
8.	6-26-13	0.46	IN	RAIN	rain	1	DAY			
9.	6-29-13	0.19	IN	RAIN	rain	2	DAY			
10.	6-30-13					7	DAY	61	86	F
11.	7-2-13	2.08	IN	RAIN	rain	2	DAY			
12.	7-7-13					7	DAY	62	94	F
13.	7-10-13	0.2	IN	RAIN	rain	1	DAY			
14.	7-14-13					7	DAY	64	94	F
15.	7-15-13	0.03	IN	RAIN	rain	1	DAY			
16.	7-20-13	0.59	IN	RAIN	rain	1	DAY			
17.	7-21-13					7	DAY	56	91	F
18.	7-26-13	0.03	IN	RAIN	rain	1	DAY			
19.	7-28-13					7	DAY	52	87	F
20.	7-30-13	0.46	IN	RAIN	rain	1	DAY			
21.	8-2-13	0.24	IN	RAIN	rain	1	DAY			
22.	8-4-13					7	DAY	62	87	F
23.	8-8-13	0.03	IN	RAIN	rain	3	DAY			
24.	8-11-13					7	DAY	54	85	F
25.	8-12-13	0.57	IN	RAIN	rain	1	DAY			
26.	8-18-13	0.1	IN	RAIN	rain	1	DAY			
27.	8-18-13					7	DAY	61	91	F

Application Description

	A
Application Date:	7-31-13
Appl. Start Time:	20:00
Appl. Stop Time:	20:45
Application Method:	Spray
Application Timing:	4-6"W
Application Placement:	BROFOL
Applied By:	LXF
Air Temperature, Unit:	72 F
% Relative Humidity:	100
Wind Velocity, Unit:	6 MPH
Wind Direction:	N
Dew Presence (Y/N):	N
Soil Temperature, Unit:	75 F
Soil Moisture:	NORMAL
% Cloud Cover:	75
Next Moisture Occurred On:	8-2-13
Time to Next Moisture, Unit:	2 DAY

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	GLXMA
Stage Scale Used:	DESC
Stage Majority, Percent:	V2
Stage Minimum, Percent:	V2
Stage Maximum, Percent:	V2
Height, Unit:	6 IN
Height Minimum, Maximum:	4 6

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	A
Pest 1 Code, Type, Scale:	ABUTH W
Stage Majority, Percent:	6
Stage Minimum, Percent:	COTY
Stage Maximum, Percent:	6
Height, Unit:	4 IN
Height Minimum, Maximum:	1 5
Density, Unit:	2 FT2
Pest 2 Code, Type, Scale:	AMATA W
Stage Majority, Percent:	10
Stage Minimum, Percent:	COTY
Stage Maximum, Percent:	16
Height, Unit:	4 IN
Height Minimum, Maximum:	0.5 6
Density, Unit:	5 FT2
Pest 3 Code, Type, Scale:	SETFA W
Stage Majority, Percent:	4
Stage Minimum, Percent:	1
Stage Maximum, Percent:	6
Height, Unit:	4 IN
Height Minimum, Maximum:	1 6
Density, Unit:	5 FT2
Pest 4 Code, Type, Scale:	IPOHE W
Stage Majority, Percent:	10
Stage Minimum, Percent:	COTY
Stage Maximum, Percent:	12
Height, Unit:	4 IN
Height Minimum, Maximum:	1 5
Density, Unit:	1 FT2

Application Equipment

	A
Appl. Equipment:	CO2 sprayer
Equipment Type:	BACSPR
Operation Pressure, Unit:	30 PSI
Nozzle Type:	XR
Nozzle Size:	8002
Boom Length, Unit:	7.5 FT
Spray Volume, Unit:	15 GPA

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval								GLXMA 8-7-13 Injury Percent 7 DA-A	GLXMA 8-14-13 Injury Percent 14 DA-A	GLXMA 8-28-13 Injury Percent 28 DA-A	ABUTH 8-7-13 Control Percent 7 DA-A	ABUTH 8-14-13 Control Percent 14 DA-A	ABUTH 8-28-13 Control Percent 28 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit	Other Rate	Other Rate	Growth Unit Stage	Appl Code						
1	TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a		9.6 fl oz/a		4-6"W A		0 a	0 a	0 a	75 e	85 b	81 c
2	TOUCHDOWN HI-TECH N-PAK AMS	5 SL 100 SL		0.375 lb ae/a 2.5 % v/v		9.6 fl oz/a 2.5 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	90 a-d	96 a	97 a
3	TOUCHDOWN HI-TECH CLASS ACT NG	5 SL 100 SL		0.375 lb ae/a 2.5 % v/v		9.6 fl oz/a 2.5 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	92 ab	97 a	97 a
4	TOUCHDOWN HI-TECH CLASS ACT NG	5 SL 100 SL		0.375 lb ae/a 1.25 % v/v		9.6 fl oz/a 1.25 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	92 abc	96 a	95 ab
5	TOUCHDOWN HI-TECH AG 08034	5 SL 100 SL		0.375 lb ae/a 2 % v/v		9.6 fl oz/a 2 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	93 a	97 a	95 ab
6	TOUCHDOWN HI-TECH AG 08034	5 SL 100 SL		0.375 lb ae/a 1 % v/v		9.6 fl oz/a 1 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	91 a-d	97 a	96 ab
7	TOUCHDOWN HI-TECH AG 07043	5 SL 100 SL		0.375 lb ae/a 1 % v/v		9.6 fl oz/a 1 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	87 d	95 a	95 ab
8	TOUCHDOWN HI-TECH AG 11011	5 SL 100 SL		0.375 lb ae/a 1 % v/v		9.6 fl oz/a 1 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	91 a-d	96 a	97 ab
9	TOUCHDOWN HI-TECH AG 11011	5 SL 100 SL		0.375 lb ae/a 1.25 % v/v		9.6 fl oz/a 1.25 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	89 bcd	95 a	95 ab
10	TOUCHDOWN HI-TECH AG 13061	5 SL 100 SL		0.375 lb ae/a 0.5 % v/v		9.6 fl oz/a 0.5 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	93 ab	96 a	96 ab
11	TOUCHDOWN HI-TECH AG 13062	5 SL 100 SL		0.375 lb ae/a 0.5 % v/v		9.6 fl oz/a 0.5 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	88 cd	94 a	95 ab
12	TOUCHDOWN HI-TECH AG 13063	5 SL 100 SL		0.375 lb ae/a 0.5 % v/v		9.6 fl oz/a 0.5 % v/v		4-6"W A 4-6"W A		0 a	0 a	0 a	88 d	94 a	94 b
13	NONTREATED									0 a	0 a	0 a	0 f	0 c	0 d
LSD (P=.05)										0.0	0.0	0.0	4.0	3.2	2.4
Standard Deviation										0.0	0.0	0.0	2.3	1.9	1.4
CV										0.0	0.0	0.0	2.85	2.15	1.64
Replicate F										0.000	0.000	0.000	1.207	1.243	0.088
Replicate Prob(F)										1.0000	1.0000	1.0000	0.3166	0.3065	0.9161
Treatment F										0.000	0.000	0.000	344.746	591.353	1032.664
Treatment Prob(F)										1.0000	1.0000	1.0000	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							AMATA	AMATA	AMATA	SETFA	SETFA	SETFA
Crop Code							8-7-13	8-14-13	8-28-13	8-7-13	8-14-13	8-28-13
Rating Date							Control	Control	Control	Control	Control	Control
Rating Type							Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit							7 DA-A	14 DA-A	28 DA-A	7 DA-A	14 DA-A	28 DA-A
Rating Timing												
Trt-Eval Interval												
Trt Treatment	Form	Form	Rate	Other	Other	Growth	Appl					
No. Name	Conc	Type	Rate	Rate	Rate	Unit	Code					
1 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		63 e	67 d	58 d	91 b	93 c
2 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		88 a	92 a	90 a	94 a	97 b
N-PAK AMS	100 SL		2.5 % v/v	2.5 % v/v	4-6"W	A						97 a
3 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		87 a	90 ab	90 a	95 a	99 a
CLASS ACT NG	100 SL		2.5 % v/v	2.5 % v/v	4-6"W	A						99 a
4 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		83 abc	88 abc	88 ab	95 a	99 a
CLASS ACT NG	100 SL		1.25 % v/v	1.25 % v/v	4-6"W	A						99 a
5 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		82 abc	91 a	91 a	95 a	99 a
AG 08034	100 SL		2 % v/v	2 % v/v	4-6"W	A						99 a
6 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		85 ab	91 a	88 ab	95 a	99 a
AG 08034	100 SL		1 % v/v	1 % v/v	4-6"W	A						99 a
7 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		77 cd	80 c	78 bc	94 a	99 a
AG 07043	100 SL		1 % v/v	1 % v/v	4-6"W	A						99 a
8 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		78 bcd	81 bc	78 bc	95 a	98 ab
AG 11011	100 SL		1 % v/v	1 % v/v	4-6"W	A						98 a
9 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		85 ab	85 abc	83 ab	95 a	98 ab
AG 11011	100 SL		1.25 % v/v	1.25 % v/v	4-6"W	A						99 a
10 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		87 a	88 abc	86 ab	95 a	99 a
AG 13061	100 SL		0.5 % v/v	0.5 % v/v	4-6"W	A						99 a
11 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		72 d	80 c	73 c	95 a	99 a
AG 13062	100 SL		0.5 % v/v	0.5 % v/v	4-6"W	A						99 a
12 TOUCHDOWN HI-TECH	5 SL		0.375 lb ae/a	9.6 fl oz/a	4-6"W	A		84 ab	87 abc	79 bc	94 a	98 ab
AG 13063	100 SL		0.5 % v/v	0.5 % v/v	4-6"W	A						99 a
13 NONTREATED								0 f	0 e	0 e	0 c	0 d
LSD (P=.05)								7.6	9.4	9.9	1.2	2.0
Standard Deviation								4.5	5.6	5.9	0.7	1.2
CV								6.02	7.12	7.77	0.81	1.28
Replicate F								0.860	0.972	2.969	2.000	0.133
Replicate Prob(F)								0.4360	0.3926	0.0705	0.1573	0.8758
Treatment F								82.084	57.735	51.921	4128.821	1658.448
Treatment Prob(F)								0.0001	0.0001	0.0001	0.0001	0.0001

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Pest Code								IPOHE	IPOHE	IPOHE
Crop Code								8-7-13	8-14-13	8-28-13
Rating Date								Control	Control	Control
Rating Type								Percent	Percent	Percent
Rating Unit										
Rating Timing								7 DA-A	14 DA-A	28 DA-A
Trt-Eval Interval										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Unit	Growth Stage	Appl Code	
1	TOUCHDOWN HI-TECH	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	73 d
2	TOUCHDOWN HI-TECH N-PAK AMS	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	88 a
		100	SL	2.5	% v/v	2.5	% v/v	4-6"W	A	79 a
3	TOUCHDOWN HI-TECH CLASS ACT NG	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	82 abc
		100	SL	2.5	% v/v	2.5	% v/v	4-6"W	A	72 ab
4	TOUCHDOWN HI-TECH CLASS ACT NG	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	78 bcd
		100	SL	1.25	% v/v	1.25	% v/v	4-6"W	A	72 ab
5	TOUCHDOWN HI-TECH AG 08034	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	85 ab
		100	SL	2	% v/v	2	% v/v	4-6"W	A	75 ab
6	TOUCHDOWN HI-TECH AG 08034	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	85 ab
		100	SL	1	% v/v	1	% v/v	4-6"W	A	78 a
7	TOUCHDOWN HI-TECH AG 07043	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	86 ab
		100	SL	1	% v/v	1	% v/v	4-6"W	A	73 ab
8	TOUCHDOWN HI-TECH AG 11011	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	84 ab
		100	SL	1	% v/v	1	% v/v	4-6"W	A	72 ab
9	TOUCHDOWN HI-TECH AG 11011	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	80 a-d
		100	SL	1.25	% v/v	1.25	% v/v	4-6"W	A	69 bc
10	TOUCHDOWN HI-TECH AG 13061	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	87 a
		100	SL	0.5	% v/v	0.5	% v/v	4-6"W	A	78 a
11	TOUCHDOWN HI-TECH AG 13062	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	75 cd
		100	SL	0.5	% v/v	0.5	% v/v	4-6"W	A	68 bc
12	TOUCHDOWN HI-TECH AG 13063	5	SL	0.375	lb ae/a	9.6	fl oz/a	4-6"W	A	83 abc
		100	SL	0.5	% v/v	0.5	% v/v	4-6"W	A	75 ab
13	NONTREATED									0 e
LSD (P=.05)								8.3	7.7	9.1
Standard Deviation								4.9	4.6	5.4
CV								6.51	6.8	7.59
Replicate F								0.998	0.648	0.292
Replicate Prob(F)								0.3835	0.5319	0.7492
Treatment F								66.390	61.252	52.196
Treatment Prob(F)								0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Winfield Solutions.
2. Ratings: CI/WC at 7, 14, and 28 DA-A.
3. Target velvetleaf.
4. No yield.