

No-Till Soybean Weed Control Studies

Southern Illinois University

Wilbur-Ellis No-Till Soybean Burndown Programs.

Trial ID: 13-5A Location: Belleville Res. Center Trial Year: 2013
Investigator: Bryan Young

Trial Status: F one-year/final
Initiation Date: 5-13-13

Trial Location

City: Belleville **Country:** USA
State/Prov.: Illinois IL
Postal Code: 62221

Objectives:

Evaluate and compare adjuvants with alternative herbicides for burndown applications in soybean.

Contacts

Study Director: Bryan Young **Title:** Professor
Organization: Southern Illinois University
Address: 1205 Lincoln Drive - AG 176 - MC 4415 **Phone No.:** 618-453-7679
City+State/Prov: Carbondale IL **Mobile No.:** 618-713-6471
Postal Code: 62901 **E-mail:** bgyoung@siu.edu
Country: USA

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: AG3832 **BBCH Scale:** BSOY
Description: RR2Y
Planting Rate, Unit: 75 LB/A **Planting Date:** 5-27-13
Depth, Unit: 1 IN **Planting Method:** SEEDED
Row Spacing, Unit: 30 IN

Pest Description

Pest 1 Type: W **Code:** HORPU Hordeum pusillum Nutt.
Common Name: barley, little
Pest 2 Type: W **Code:** STEME Stellaria media (L.) Vill.
Common Name: chickweed, common
Pest 3 Type: W **Code:** ERICA Conyza canadensis (L.) Crong.
Common Name: horseweed
Pest 4 Type: W **Code:** SETFA Setaria faberi Herm.
Common Name: foxtail, giant
Pest 5 Type: W **Code:** AMATA Amaranthus rudis Sauer
Common Name: waterhemp, common

Site and Design

Treated Plot Width: 7.5 FT **Total Plot Width:** 10 FT **Site Type:** FIELD
Treated Plot Length: 26 FT **Total Plot Length:** 26 FT **Experimental Unit:** 1 PLOT
Tillage Type: NOTILL no-till
Replications: 4 **Study Design:** RACOB L Randomized Complete Block (RCB)
Untreated Arrangement: INCLUDED single control randomized in each block

No.	Previous Crop	Year
1.	SORVU	2012

Maintenance

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

Soil Description

% OM: 2.4 **Texture:** SIL silt loam
pH: 6.9 **Soil Name:** Winfield
CEC: 7

Additional Measured Elements

Element	Quantity	Unit
P1	83	lb/A
K	352	lb/A

Moisture and Weather Conditions

Overall Moisture Conditions: ABONOR
Closest Weather Station: ICN - Belleville IL **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.	4-7-13					7	DAY	34	82	F
2.	4-10-13	1.4	IN	RAIN	rain	2	DAY			
3.	4-14-13					7	DAY	31	82	F
4.	4-16-13	1.05	IN	RAIN	rain	2	DAY			
5.	4-18-13	5.2	IN	RAIN	rain	1	DAY			
6.	4-21-13					7	DAY	35	72	F
7.	4-23-13	1.35	IN	RAIN	rain	2	DAY			
8.	4-27-13	0.3	IN	RAIN	rain	2	DAY			
9.	4-28-13					7	DAY	41	83	F
10.	5-3-13	3.07	IN	RAIN	rain	4	DAY			
11.	5-5-13					7	DAY	46	80	F
12.	5-9-13	0.35	IN	RAIN	rain	2	DAY			
13.	5-12-13					7	DAY	39	92	F
14.	5-16-13	0.55	IN	RAIN	rain	2	DAY			
15.	5-19-13					7	DAY	45	88	F
16.	5-20-13	0.67	IN	RAIN	rain	2	DAY			
17.	5-26-13					7	DAY	56	86	F
18.	5-27-13	1.23	IN	RAIN	rain	2	DAY			
19.	5-30-13	0.51	IN	RAIN	rain	3	DAY			
20.	5-31-13	3.46	IN	RAIN	rain	2	DAY			
21.	6-2-13					7	DAY	50	80	F
22.	6-9-13					7	DAY	59	94	F
23.	6-10-13	0.48	IN	RAIN	rain	2	DAY			
24.	6-16-13					7	DAY	61	90	F
25.	6-17-13	2.16	IN	RAIN	rain	3	DAY			
26.	6-23-13					7	DAY	64	92	F
27.	6-23-13	5.33	IN	RAIN	rain	2	DAY			
28.	6-26-13	0.46	IN	RAIN	rain	1	DAY			
29.	6-29-13	0.19	IN	RAIN	rain	2	DAY			
30.	6-30-13					7	DAY	61	86	F

Application Description

	A
Application Date:	5-13-13
Appl. Start Time:	14:00
Appl. Stop Time:	14:30
Application Method:	Spray
Application Timing:	14DBP
Application Placement:	BROFOL
Applied By:	RFK
Air Temperature, Unit:	69 F
% Relative Humidity:	31
Wind Velocity, Unit:	1 MPH
Wind Direction:	S
Dew Presence (Y/N):	N
Soil Temperature, Unit:	60 F
Soil Moisture:	ABONOR
% Cloud Cover:	0
Next Moisture Occurred On:	5-16-13
Time to Next Moisture, Unit:	3 DAY

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	GLXMA
Stage Scale Used:	DESC
Stage Majority, Percent:	NA

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	A
Pest 1 Code, Type, Scale:	HORPU W
Stage Majority, Percent:	6
Stage Minimum, Percent:	5
Stage Maximum, Percent:	7
Height, Unit:	20 IN
Height Minimum, Maximum:	12 24
Density, Unit:	3 FT2
Pest 2 Code, Type, Scale:	STEME W
Stage Majority, Percent:	10+
Stage Minimum, Percent:	10
Stage Maximum, Percent:	10+
Height, Unit:	6 IN
Height Minimum, Maximum:	4 6
Density, Unit:	2 FT2
Pest 3 Code, Type, Scale:	ERICA W
Stage Majority, Percent:	10+
Stage Minimum, Percent:	10
Stage Maximum, Percent:	10+
Height, Unit:	6 IN
Height Minimum, Maximum:	4 10
Density, Unit:	0.01 FT2
Pest 4 Code, Type, Scale:	SETFA W
Stage Majority, Percent:	NA
Pest 5 Code, Type, Scale:	AMATA W
Stage Majority, Percent:	NA

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:	17 GPA

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval										HORPU	STEME	ERICA	ERICA	ERICA	SETFA	SETFA	
										5-27-13 Control Percent	5-27-13 Control Percent	5-27-13 Control Percent	6-10-13 Control Percent	6-24-13 Control Percent	6-10-13 Control Percent	6-24-13 Control Percent	
										14 DA-A	14 DA-A	14 DA-A	28 DA-A	42 DA-A	28 DA-A	42 DA-A	
Trt	Treatment No. Name	Form Conc	Form Type	Rate Rate	Unit	Other Rate	Other Rate	Unit	Growth Stage	Appl Code							
1	FIERCE	76	WG	0.178	lb ai/a	3.75	oz/a		14DBP A	A	56 c	99 a	25 a	13 b	13 b	99 a	98 a
2	FIERCE WE1442-1	76	WG 100 SL	0.178	lb ai/a 40 fl oz/a	3.75	oz/a 40 fl oz/a		14DBP A 14DBP A	A	75 b	99 a	25 a	0 b	0 b	99 a	96 a
3	FIERCE WE1258-1	76	WG 100 SL	0.178	lb ai/a 1 pt/a	3.75	oz/a 1 pt/a		14DBP A 14DBP A	A	69 b	99 a	25 a	0 b	0 b	99 a	97 a
4	AUTHORITY FIRST GRAMOXONE 2 SL AMS WE1279-2	70	WG 2 SL 100 SG 100 SL	0.282	lb ai/a 0.5 lb ai/a 1.02 % w/w 0.25 % v/v	6.45	oz/a 1 qt/a 8.5 lb/100 gal 1 qt/100 gal		14DBP A 14DBP A 14DBP A 14DBP A	A	99 a	99 a	99 a	99 a	99 a	99 a	96 a
5	SHARPEN AMS WE1258-1	2.85	SC 100 SG 100 SL	0.0223	lb ai/a 1.02 % w/w 1 pt/a	1	fl oz/a 8.5 lb/100 gal 1 pt/a		14DBP A 14DBP A 14DBP A	A	0 d	99 a	99 a	97 a	97 a	0 a	0 b
6	SHARPEN WE1442-1	2.85	SC 100 SL	0.0223	lb ai/a 40 fl oz/a	1	fl oz/a 40 fl oz/a		14DBP A 14DBP A	A	0 d	99 a	99 a	94 a	92 a	0 a	0 b
7	NONTREATED										0 d	0 a	0 a	0 b	0 b	0 a	0 b
LSD (P=.05)											10.7	0.0	0.0	14.0	14.4	0.0	2.8
Standard Deviation											7.2	0.0	0.0	9.4	9.7	0.0	1.9
CV											16.9	0.0	0.0	21.79	22.71	0.0	3.48
Replicate F											0.000	0.000	0.000	1.528	1.699	0.000	2.532
Replicate Prob(F)											1.0000	1.0000	1.0000	0.2415	0.2029	1.0000	0.0895
Treatment F											134.977	0.000	0.000	113.721	104.642	0.000	2894.825
Treatment Prob(F)											0.0001	1.0000	1.0000	0.0001	0.0001	1.0000	0.0001

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Pest Code						AMATA	AMATA
Crop Code						6-10-13	6-24-13
Rating Date						Control	Control
Rating Type						Percent	Percent
Rating Unit							
Rating Timing							
Trt-Eval Interval						28 DA-A	42 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit
1	FIERCE	76 WG		0.178 lb ai/a		3.75 oz/a	
2	FIERCE WE1442-1	76 WG 100 SL		0.178 lb ai/a 40 fl oz/a		3.75 oz/a 40 fl oz/a	
3	FIERCE WE1258-1	76 WG 100 SL		0.178 lb ai/a 1 pt/a		3.75 oz/a 1 pt/a	
4	AUTHORITY FIRST GRAMOXONE 2 SL AMS WE1279-2	70 WG 2 SL 100 SG 100 SL		0.282 lb ai/a 0.5 lb ai/a 1.02 % w/w 0.25 % v/v		6.45 oz/a 1 qt/a 8.5 lb/100 gal 1 qt/100 gal	
5	SHARPEN AMS WE1258-1	2.85 SC 100 SG 100 SL		0.0223 lb ai/a 1.02 % w/w 1 pt/a		1 fl oz/a 8.5 lb/100 gal 1 pt/a	
6	SHARPEN WE1442-1	2.85 SC 100 SL		0.0223 lb ai/a 40 fl oz/a		1 fl oz/a 40 fl oz/a	
7	NONTREATED						
LSD (P= .05)						27.0	24.7
Standard Deviation						18.2	16.6
CV						22.72	22.59
Replicate F						1.082	1.132
Replicate Prob(F)						0.3820	0.3625
Treatment F						16.242	17.596
Treatment Prob(F)						0.0001	0.0001

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Trial Comments

1. Protocol: Wilbur-Ellis (1027-1307).
2. Ratings: WC 14, 28, and 42 DA-A.
3. Possible blanket application after the last evaluation, if desired.
4. Yield not requested.
5. On 6-10-13 at 28 DA-A there was ERICA regrowth in the Sharpen plots.
On 6-10-13 at 28 DA-A HORPU and STEME were senescing naturally
in the nontreated plots and could no longer be evaluated.
Emergence of summer annual weeds was reduced by a dense mat of winter annual weeds in some plots.
6. Not harveted.