

Preemergence Weed Control in Soybean with Fierce XLT, Authority XL, and Surveil.

Trial ID: 16-1-MMW30 Location: Belleville Res. Center Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.

Trial Status: F one-year/final
Initiation Date: 5-31-16
Completion Date: 7-27-16

Trial Location

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

Objectives:

Compare Fierce XLT with Authority XL or Surveil for preemergence control of weeds in soybean, especially amarathus and ragweeds.

Contacts

Study Director: Karla Gage, Ph.D. **Title:** Assistant Professor of Weed Science
Organization: Southern Illinois University Carbondale
Address: 1205 Lincoln Drive MC 4415 **Phone No.:** 618-453-7679
City+State/Prov: Carbondale, IL
Postal Code: 62901 **E-mail:** kgage@siu.edu
Country: USA

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: AG3832 **BBCH Scale:** BSOY
Description: RR2Y
Planting Date: 5-31-16
Planting Rate, Unit: 140000 S/A **Planting Method:** SEEDED
Depth, Unit: 1 IN
Row Spacing, Unit: 30 IN

Pest Description

Pest 1 Type: W **Code:** PANDI **Panicum dichotomiflorum Michx.**
Common Name: panicum, fall
Pest 2 Type: W **Code:** AMBTR **Ambrosia trifida L.**
Common Name: ragweed, giant
Pest 3 Type: W **Code:** ABUTH **Abutilon theophrasti Medik.**
Common Name: velvetleaf
Pest 4 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: 30 FT **Total Plot Length:** 30 FT **Experimental Unit:** 1 PLOT
Tillage Type: REDTIL reduced-till
Study Design: RACOB L Randomized Complete Block (RCB)
Replications: 4
Untreated Arrangement: INCLUDED single control randomized in each block

No.	Previous Crop	Year
1.	ZEAMD	2015

Maintenance

No.	Maintenance Product Name
1.	N 0 LB/A, P2O5 50 LB/A, K2O 150 LB/A

Soil Description

Description Name: 01_2013
% OM: 2.5 **Texture:** SIL silt loam
pH: 6 **Soil Name:** Winfield
CEC: 6

Additional Measured Elements

Element	Quantity	Unit
P1	58	lb/A
K	286	lb/A

Moisture and Weather Conditions

Overall Moisture Conditions: NORMAL
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.	4-29-16	1.94	IN	RAIN	rain	2	DAY			
2.	5-4-16	0.02	IN	RAIN	rain	1	DAY			
3.	5-6-16					7	DAY	44	87	F
4.	5-7-16	0.07	IN	RAIN	rain	1	DAY			
5.	5-9-16	2.12	IN	RAIN	rain	5	DAY			
6.	5-13-16					7	DAY	41	76	F
7.	5-16-16	1.06	IN	RAIN	rain	2	DAY			
8.	5-20-16					7	DAY	51	83	F
9.	5-20-16	0.06	IN	RAIN	rain	1	DAY			
10.	5-25-16	0.68	IN	RAIN	rain	3	DAY			
11.	5-27-16					7	DAY	62	88	F
12.	5-31-16	0.03	IN	RAIN	rain	2	DAY			
13.	6-3-16					7	DAY	55	89	F
14.	6-3-16	0.01	IN	RAIN	rain	1	DAY			
15.	6-4-16	0.72	IN	RAIN	rain	1	DAY			
16.	6-10-16					7	DAY	65	96	F
17.	6-13-16	0.03	IN	RAIN	rain	1	DAY			
18.	6-17-16					7	DAY	67	97	F
19.	6-21-16	0.01	IN	RAIN	rain	1	DAY			
20.	6-24-16					7	DAY	57	95	F
21.	6-25-16	0.02	IN	RAIN	rain	1	DAY			
22.	6-30-16	0.03	IN	RAIN	rain	1	DAY			
23.	7-1-16					7	DAY	60	91	F
24.	7-1-16	2.26	IN	RAIN	rain	4	DAY			
25.	7-6-16	0.32	IN	RAIN	rain	3	DAY			
26.	7-8-16					7	DAY	67	93	F
27.	7-13-16	0.49	IN	RAIN	rain	2	DAY			
28.	7-15-16					7	DAY	68	93	F
29.	7-17-16	0.02	IN	RAIN	rain	1	DAY			
30.	7-19-16	1.47	IN	RAIN	rain	2	DAY			
31.	7-25-16	0.1	IN	RAIN	rain	1	DAY			

Application Description

	A
Application Date:	6-1-16
Appl. Start Time:	7:10
Appl. Stop Time:	7:30
Application Method:	Spray
Application Timing:	PRE
Application Placement:	BROSOI
Applied By:	MCG
Air Temperature, Unit:	73 F
% Relative Humidity:	97
Wind Velocity, Unit:	2 MPH
Wind Direction:	W
Dew Presence (Y/N):	N
Soil Temperature, Unit:	73 F
Soil Moisture:	NORMAL
% Cloud Cover:	25
Next Moisture Occurred On:	6-4-16
Time to Next Moisture, Unit:	3 DAY

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Trial ID: 16-1-MMW30 Location: Belleville Res. Center Trial Year: 2016
Investigator: Karla L. Gage, Ph.D.**Crop Stage At Each Application**

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

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	PANDI W
Stage Majority, Percent:	NA
Pest 2 Code, Type, Scale:	AMBTR W
Stage Majority, Percent:	NA
Pest 3 Code, Type, Scale:	ABUTH W
Stage Majority, Percent:	NA
Pest 4 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:	15 GPA

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Pest Code							GLXMA	GLXMA	GLXMA	PANDI	PANDI	PANDI
Crop Code							6-29-16	7-13-16	7-27-16	6-29-16	7-13-16	7-27-16
Rating Date							Injury	Injury	Injury	Control	Control	Control
Rating Type							Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit												
Rating Timing												
Trt-Eval Interval							28 DA-A	42 DA-A	56 DA-A	28 DA-A	42 DA-A	56 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Unit	Appl Stage	Code			
1	NONTREATED									0	0	0
2	AUTHORITY XL	70 WG		0.175 lb ai/a	4 oz/a		PRE	A		0 b	0 a	0 a
3	AUTHORITY XL	70 WG		0.328 lb ai/a	7.5 oz/a		PRE	A		0 b	0 a	0 a
4	FIERCE XLT	62.41 WG		0.156 lb ai/a	4 oz/a		PRE	A		0 b	0 a	0 a
5	FIERCE XLT	62.41 WG		0.205 lb ai/a	5.25 oz/a		PRE	A		6 a	3 a	0 a
6	SURVEIL	48 WG		0.105 lb ai/a	3.5 oz/a		PRE	A		0 b	0 a	0 a
LSD P=.05										3.2	3.6	.
Standard Deviation										2.1	2.3	0.0
CV										181.12	346.41	0.0
Replicate F										0.833	0.833	0.000
Replicate Prob(F)										0.5056	0.5056	1.0000
Treatment F										6.097	1.667	0.000
Treatment Prob(F)										0.0095	0.2333	1.0000
												0.403
												0.828
												1.173
												0.7538
												0.5080
												0.3681
												8.429
												10.759
												2.403
												0.0030
												0.0012
												0.1190

Means followed by same letter or symbol do not significantly differ (P=.05, LSD)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Average=5,10,15,9,14,19,6,11,16,7,12,17,8,13,18
 Could not calculate LSD (% mean diff) for columns 15 because error mean square = 0.

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Pest Code	AMBTR														
Crop Code	AMBTR														
Rating Date	6-29-16		7-13-16		7-27-16										
Rating Type	Control		Control		Control										
Rating Unit	Percent		Percent		Percent										
Rating Timing	28 DA-A		42 DA-A		56 DA-A										
Trt-Eval Interval	28 DA-A		42 DA-A		56 DA-A										
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Other Rate	Other Rate	Growth Unit	Appl Stage	Code						
1	NONTREATED									0	0	0	0	0	0
2	AUTHORITY XL	70	WG	0.175 lb ai/a	4 oz/a		PRE	A		64 a	43 c	13 a	66 b	58 b	65 a
3	AUTHORITY XL	70	WG	0.328 lb ai/a	7.5 oz/a		PRE	A		63 a	57 bc	12 a	80 a	75 a	72 a
4	FIERCE XLT	62.41	WG	0.156 lb ai/a	4 oz/a		PRE	A		70 a	64 ab	25 a	84 a	75 a	70 a
5	FIERCE XLT	62.41	WG	0.205 lb ai/a	5.25 oz/a		PRE	A		75 a	70 ab	25 a	77 a	73 a	42 a
6	SURVEIL	48	WG	0.105 lb ai/a	3.5 oz/a		PRE	A		81 a	79 a	56 a	84 a	78 a	75 a
LSD P=.05										19.3	20.2	42.0	8.3	12.8	29.9
Standard Deviation										12.3	12.8	26.7	5.3	8.1	19.0
CV										17.36	20.6	102.25	6.77	11.31	29.33
Replicate F										0.554	0.263	0.022	1.119	0.558	0.543
Replicate Prob(F)										0.6570	0.8507	0.9953	0.3869	0.6544	0.6641
Treatment F										1.548	4.583	1.834	7.520	3.955	1.983
Treatment Prob(F)										0.2616	0.0232	0.1990	0.0046	0.0354	0.1733

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Pest Code							AMATA	AMATA	AMATA
Crop Code							6-29-16	7-13-16	7-27-16
Rating Date							Control	Control	Control
Rating Type							Percent	Percent	Percent
Rating Unit									
Rating Timing									
Trt-Eval Interval							28 DA-A	42 DA-A	56 DA-A
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Other Rate	Other Rate	Growth Unit	Appl Stage	Code
1	NONTREATED								
2	AUTHORITY XL	70 WG		0.175 lb ai/a	4 oz/a		PRE	A	
3	AUTHORITY XL	70 WG		0.328 lb ai/a	7.5 oz/a		PRE	A	
4	FIERCE XLT	62.41 WG		0.156 lb ai/a	4 oz/a		PRE	A	
5	FIERCE XLT	62.41 WG		0.205 lb ai/a	5.25 oz/a		PRE	A	
6	SURVEIL	48 WG		0.105 lb ai/a	3.5 oz/a		PRE	A	
LSD P=.05							9.8	11.7	19.1
Standard Deviation							6.2	7.4	12.1
CV							6.88	8.48	14.84
Replicate F							0.630	0.151	0.608
Replicate Prob(F)							0.6121	0.9264	0.6246
Treatment F							9.813	13.759	5.321
Treatment Prob(F)							0.0017	0.0004	0.0147

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Trial Comments

1. Protocol: Valent (6402).
2. Ratings:
CI 28, 42, and 56 DA-A
WC 28, 42, and 56 DA-A
3. Yield not requested.
4. Blanket POST application of glyphosate required about 56 DA-A, after the last rating.
5. Photos not requested.
6. Rainfall following the PRE application A was 0.73 inch over 2 days beginning 3 days later.
7. Missing data for plots 103 and 302 were due to errant application, these plots were accidentally sprayed with a bottle from the adjacent trial.
8. Not harvested.