

Residual Tank-Mix Partners in Soybean.

Trial ID: 12-DSO-ISA-ResTM
Location: De Soto, IL

Investigator: Bryan Young

General Trial Information

Study Director: Bryan Young
Investigator: Bryan Young Title: ProfessorTrial Status: F - one-year/final
Initiation Date: 4-29-12

Trial Location

City: De Soto
State/Prov.: IL
Postal Code: 62924
Country: USA

Objectives:

Evaluate glyphosate-resistant waterhemp control with
residual herbicide tank-mixtures.

Personnel

Study Director: Bryan Young
Investigator: Bryan Young Title: Professor
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
Variety: AG 4005 Description: RR
BBCH Scale: BSOY Planting Date: 4-29-12
Planting Method: SEEDED Seeded Rate, Unit: 165000 S/A
Depth, Unit: 2 IN
Row Spacing, Unit: 30 IN

Pest Description

Pest 1 Type: W Code: AMATA - Amaranthus rudis Sauer
Common Name: waterhemp, common
Description: glyphosate-resistant waterhemp

Site and Design

Plot Width, Unit: 10 FT Site Type: FIELD field
Plot Length, Unit: 30 FT
Plot Area, Unit: 300 FT² Tillage Type: NOTILL no-till
Replications: 3 Study Design: RACOB Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	ZEAMX	2011

Maintenance

No.	Maintenance Treatment Name
1.	N 27 LB/A, P205 69 LB/A, K20 90 LB/A

Soil Description

% Sand: 14 % OM: 2.12 Texture: SIL SILT LOAM
% Silt: 67 pH: 6.9 Soil Name: OKAW
% Clay: 19 CEC: 12.7

Additional Measured Elements

Element	Quantity	Unit
P1	112	LB/A
K	386	LB/A

Moisture and Weather Conditions

Overall Moisture Conditions: BELNOR below normal
Closest Weather Station: SOUTHERN IL AIRPORT (93810) Distance, Unit: 1.5 MI

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Application Description

	A
Application Date:	4-29-12
Time of Day:	13:00
Application Method:	Spray
Application Timing:	0-7DBP
Application Placement:	BROFOL
Applied By:	LAH
Air Temperature, Unit:	82 F
% Relative Humidity:	52
Wind Velocity, Unit:	2 MPH
Wind Direction:	NE
Dew Presence (Y/N):	N no
Soil Temperature, Unit:	73 F
Soil Moisture:	NORMAL
% Cloud Cover:	100
Next Rain Occurred On:	4-30-12

Crop Stage At Each Application

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

Pest Stage At Each Application

	A
Pest 1 Code, Type, Scale:	AMATA W DESC
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:	6.67 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 5-21-12 Plants 000/A	GLXMA 5-20-12 Injury Percent	GLXMA 6-10-12 Injury Percent	GLXMA 6-28-12 Injury Percent	GLXMA 5-20-12 Stunt Percent	GLXMA 6-10-12 Stunt Percent	GLXMA 6-28-12 Stunt Percent
										3 WAP	3 WAP	6 WAP	9 WAP	3 WAP	6 WAP	9 WAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code							
1	SPARTAN SC	4	SC	0.125	lb ai/a	4	fl oz/a	0-7DBP A		118.6 a	3 c-f	0 a	0 a	3 a-d	0 a	0 a
2	SPARTAN SC	4	SC	0.25	lb ai/a	8	fl oz/a	0-7DBP A		124.0 a	3 c-f	0 a	0 a	3 a-d	0 a	0 a
3	VALOR SX	51	WG	0.064	lb ai/a	2	oz/a	0-7DBP A		136.3 a	0 f	0 a	0 a	0 d	0 a	0 a
4	VALOR SX	51	WG	0.08	lb ai/a	2.5	oz/a	0-7DBP A		145.2 a	6 ab	0 a	0 a	5 a	0 a	0 a
5	SPARTAN SC PROWL H2O	4 3.8	SC CS	0.125 1.19	lb ai/a lb ai/a	4 2.5	fl oz/a pt/a	0-7DBP A 0-7DBP A		128.4 a	0 f	0 a	0 a	0 d	0 a	0 a
6	SPARTAN SC BOUNDARY	4 6.5	SC EC	0.125 1.7	lb ai/a lb ai/a	4 2.1	fl oz/a pt/a	0-7DBP A 0-7DBP A		134.6 a	4 bcd	0 a	0 a	2 bcd	0 a	0 a
7	SPARTAN SC PREFIX	4 5.29	SC EC	0.125 1.65	lb ai/a lb ai/a	4 2.5	fl oz/a pt/a	0-7DBP A 0-7DBP A		130.1 a	2 def	0 a	0 a	2 bcd	0 a	0 a
8	SPARTAN SC SHARPEN	4 2.85	SC SC	0.125 0.0223	lb ai/a lb ai/a	4 1.0	fl oz/a fl oz/a	0-7DBP A 0-7DBP A		131.9 a	1 ef	0 a	0 a	1 cd	0 a	0 a
9	SPARTAN SC KIH-485	4 85	SC WG	0.125 0.106	lb ai/a lb ai/a	4 2	fl oz/a oz/a	0-7DBP A 0-7DBP A		131.9 a	0 f	0 a	0 a	0 d	0 a	0 a
10	SPARTAN SC PROWL H2O	4 3.8	SC CS	0.25 1.19	lb ai/a lb ai/a	8 2.5	fl oz/a pt/a	0-7DBP A 0-7DBP A		131.9 a	0 f	0 a	0 a	0 d	0 a	0 a
11	SPARTAN SC BOUNDARY	4 6.5	SC EC	0.25 1.7	lb ai/a lb ai/a	8 2.1	fl oz/a pt/a	0-7DBP A 0-7DBP A		111.6 a	4 b-e	0 a	0 a	2 bcd	0 a	0 a
12	SPARTAN SC PREFIX	4 5.29	SC EC	0.25 1.65	lb ai/a lb ai/a	8 2.5	fl oz/a pt/a	0-7DBP A 0-7DBP A		130.1 a	5 bc	0 a	0 a	4 ab	0 a	0 a
13	SPARTAN SC SHARPEN	4 2.85	SC SC	0.25 0.0223	lb ai/a lb ai/a	8 1	fl oz/a fl oz/a	0-7DBP A 0-7DBP A		118.6 a	4 bcd	0 a	0 a	4 ab	0 a	0 a
14	SPARTAN SC KIH-485	4 85	SC WG	0.25 0.106	lb ai/a lb ai/a	8 2	fl oz/a oz/a	0-7DBP A 0-7DBP A		132.8 a	4 b-e	0 a	0 a	4 abc	0 a	0 a
15	VALOR SX PROWL H2O	51 3.8	WG CS	0.064 1.19	lb ai/a lb ai/a	2 2.5	oz/a pt/a	0-7DBP A 0-7DBP A		141.7 a	1 ef	0 a	0 a	1 cd	0 a	0 a
16	VALOR SX BOUNDARY	51 6.5	WG EC	0.064 1.7	lb ai/a lb ai/a	2 2.1	oz/a pt/a	0-7DBP A 0-7DBP A		131.9 a	6 ab	0 a	0 a	3 a-d	0 a	0 a
17	VALOR SX PREFIX	51 5.29	WG EC	0.064 1.65	lb ai/a lb ai/a	2 2.5	oz/a pt/a	0-7DBP A 0-7DBP A		125.7 a	6 ab	0 a	0 a	3 abc	0 a	0 a
18	VALOR SX SHARPEN	51 2.85	WG SC	0.064 0.0223	lb ai/a lb ai/a	2 1.0	oz/a fl oz/a	0-7DBP A 0-7DBP A		124.0 a	4 b-e	0 a	0 a	4 abc	0 a	0 a
19	VALOR SX KIH-485	51 85	WG WG	0.064 0.106	lb ai/a lb ai/a	2 2	oz/a oz/a	0-7DBP A 0-7DBP A		124.0 a	0 f	0 a	0 a	0 d	0 a	0 a
20	VALOR SX PROWL H2O	51 3.8	WG CS	0.08 1.19	lb ai/a lb ai/a	2.5 2.5	oz/a pt/a	0-7DBP A 0-7DBP A		127.5 a	1 ef	0 a	0 a	1 cd	0 a	0 a

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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Crop Code										5-21-12	5-20-12	6-10-12	6-28-12	5-20-12	6-10-12	6-28-12
Rating Date										Plants	Injury	Injury	Injury	Stunt	Stunt	Stunt
Rating Type										000/A	Percent	Percent	Percent	Percent	Percent	Percent
Rating Unit																
Rating Timing																
Trt-Eval Interval										3 WAP	3 WAP	6 WAP	9 WAP	3 WAP	6 WAP	9 WAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code							
21	VALOR SX BOUNDARY	51 WG 6.5 EC		0.08 lb ai/a 1.7 lb ai/a		2.5 oz/a 2.1 pt/a		0-7DBP A 0-7DBP A		119.5 a	8 a	0 a	0 a	4 abc	0 a	0 a
22	VALOR SX PREFIX	51 WG 5.29 EC		0.08 lb ai/a 1.65 lb ai/a		2.5 oz/a 2.5 pt/a		0-7DBP A 0-7DBP A		132.8 a	6 ab	0 a	0 a	1 cd	0 a	0 a
23	VALOR SX SHARPEN	51 WG 2.85 SC		0.08 lb ai/a 0.0223 lb ai/a		2.5 oz/a 1 fl oz/a		0-7DBP A 0-7DBP A		121.3 a	4 b-e	0 a	0 a	4 abc	0 a	0 a
24	VALOR SX KIH-485	51 WG 85 WG		0.08 lb ai/a 0.106 lb ai/a		2.5 oz/a 2 oz/a		0-7DBP A 0-7DBP A		137.2 a	0 f	0 a	0 a	0 d	0 a	0 a
25	NONTREATED									134.6 a	0 f	0 a	0 a	0 d	0 a	0 a
LSD (P=.05)										19.96	2.9	0.0	0.0	2.9	0.0	0.0
Standard Deviation										12.09	1.7	0.0	0.0	1.8	0.0	0.0
CV										9.37	61.5	0.0	0.0	90.27	0.0	0.0
Replicate F										1.369	2.255	0.000	0.000	1.214	0.000	0.000
Replicate Prob(F)										0.2641	0.1159	1.0000	1.0000	0.3058	1.0000	1.0000
Treatment F										1.222	6.096	0.000	0.000	2.573	0.000	0.000
Treatment Prob(F)										0.2713	0.0001	1.0000	1.0000	0.0026	1.0000	1.0000

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									3 WAP	6 WAP	9 WAP	3 WAP	6 WAP	9 WAP	
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code						
1	SPARTAN SC	4	SC	0.125	lb ai/a	4	fl oz/a	0-7DBP A		0 a	0 a	0 a	98 a	90 fg	73 gh
2	SPARTAN SC	4	SC	0.25	lb ai/a	8	fl oz/a	0-7DBP A		0 a	0 a	0 a	99 a	95 a-d	89 a-d
3	VALOR SX	51	WG	0.064	lb ai/a	2	oz/a	0-7DBP A		0 a	0 a	0 a	97 b	82 h	67 h
4	VALOR SX	51	WG	0.08	lb ai/a	2.5	oz/a	0-7DBP A		0 a	0 a	0 a	99 a	92 c-g	78 efg
5	SPARTAN SC PROWL H2O	4 3.8	SC CS	0.125 1.19	lb ai/a lb ai/a	4 2.5	fl oz/a pt/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	98 a	95 a-d	85 c-f
6	SPARTAN SC BOUNDARY	4 6.5	SC EC	0.125 1.7	lb ai/a lb ai/a	4 2.1	fl oz/a pt/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	97 ab	90 a-d
7	SPARTAN SC PREFIX	4 5.29	SC EC	0.125 1.65	lb ai/a lb ai/a	4 2.5	fl oz/a pt/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	98 a	96 ab
8	SPARTAN SC SHARPEN	4 2.85	SC SC	0.125 0.0223	lb ai/a lb ai/a	4 1.0	fl oz/a fl oz/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	90 efg	72 gh
9	SPARTAN SC KIH-485	4 85	SC WG	0.125 0.106	lb ai/a lb ai/a	4 2	fl oz/a oz/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	96 ab	88 a-e
10	SPARTAN SC PROWL H2O	4 3.8	SC CS	0.25 1.19	lb ai/a lb ai/a	8 2.5	fl oz/a pt/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	96 abc	92 abc
11	SPARTAN SC BOUNDARY	4 6.5	SC EC	0.25 1.7	lb ai/a lb ai/a	8 2.1	fl oz/a pt/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	97 ab	97 a
12	SPARTAN SC PREFIX	4 5.29	SC EC	0.25 1.65	lb ai/a lb ai/a	8 2.5	fl oz/a pt/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	98 a	97 a
13	SPARTAN SC SHARPEN	4 2.85	SC SC	0.25 0.0223	lb ai/a lb ai/a	8 1	fl oz/a fl oz/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	97 ab	95 abc
14	SPARTAN SC KIH-485	4 85	SC WG	0.25 0.106	lb ai/a lb ai/a	8 2	fl oz/a oz/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	97 ab	95 abc
15	VALOR SX PROWL H2O	51 3.8	WG CS	0.064 1.19	lb ai/a lb ai/a	2 2.5	oz/a pt/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	95 a-d	91 a-d
16	VALOR SX BOUNDARY	51 6.5	WG EC	0.064 1.7	lb ai/a lb ai/a	2 2.1	oz/a pt/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	96 ab	90 a-d
17	VALOR SX PREFIX	51 5.29	WG EC	0.064 1.65	lb ai/a lb ai/a	2 2.5	oz/a pt/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	96 abc	88 a-e
18	VALOR SX SHARPEN	51 2.85	WG SC	0.064 0.0223	lb ai/a lb ai/a	2 1.0	oz/a fl oz/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	98 a	93 b-f	82 d-g
19	VALOR SX KIH-485	51 85	WG WG	0.064 0.106	lb ai/a lb ai/a	2 2	oz/a oz/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	95 a-d	87 a-e
20	VALOR SX PROWL H2O	51 3.8	WG CS	0.08 1.19	lb ai/a lb ai/a	2.5 2.5	oz/a pt/a	0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a	91 d-g	77 fgh

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								3 WAP	6 WAP	9 WAP	3 WAP	6 WAP	9 WAP
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code				
21	VALOR SX BOUNDARY	51 WG 6.5 EC		0.08 lb ai/a 1.7 lb ai/a		2.5 oz/a 2.1 pt/a		0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a 96 ab 91 a-d
22	VALOR SX PREFIX	51 WG 5.29 EC		0.08 lb ai/a 1.65 lb ai/a		2.5 oz/a 2.5 pt/a		0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a 97 ab 94 abc
23	VALOR SX SHARPEN	51 WG 2.85 SC		0.08 lb ai/a 0.0223 lb ai/a		2.5 oz/a 1 fl oz/a		0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a 88 g 77 fgh
24	VALOR SX KIH-485	51 WG 85 WG		0.08 lb ai/a 0.106 lb ai/a		2.5 oz/a 2 oz/a		0-7DBP A 0-7DBP A		0 a	0 a	0 a	99 a 94 a-e 86 b-f
25	NONTREATED									0 a	0 a	0 a	0 c 0 i 0 i
LSD (P=.05)								0.0	0.0	0.0	1.0	4.2	10.2
Standard Deviation								0.0	0.0	0.0	0.6	2.6	6.2
CV								0.0	0.0	0.0	0.61	2.82	7.45
Replicate F								0.000	0.000	0.000	1.957	0.393	1.048
Replicate Prob(F)								1.0000	1.0000	1.0000	0.1524	0.6774	0.3586
Treatment F								0.000	0.000	0.000	3510.406	169.910	28.983
Treatment Prob(F)								1.0000	1.0000	1.0000	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: ISA.
2. Ratings: CI/WC at 3, 6, and 9 WAP.
Rate components of CI separately: stunting, necrosis, overall injury.
Determine soybean population (count plants in 1 meter of row at 2 locations in each plot) at 3 WAP.
Photos at all evaluation timings. This study is NOT yielded.
3. Plot area was no-till and had a blanket burndown of Roundup PowerMax (22 floz/A) + 2,4-D (1 pt/A) over the entire site on 4-12-12.
Blanket burndown of Gramoxone Inteon (4 pt/A) plus NIS (0.5%) was applied on 4-28-12.
Blanket trial area with glyphosate after the 9 WAP evaluation if needed.
4. Rainfall following the 0-7DBP application was approximately 0.5 inch the next day and an additional 0.25 inch 7 days later.
5. AMATA-HR = Herbicide-resistant waterhemp (glyphosate).
6. Not harvested.