

Cobra versus Competitive Programs.

Trial ID: 13-DSO-Cobra6402 Location: De Soto, IL Trial Year: 2013
Investigator: Bryan Young

Trial Status: F one-year/final Initiation Date: 5-24-13 Completion Date: 10-20-13	
City: De Soto Country: USA State/Prov.: Illinois IL Postal Code: 62924	Trial Location

Objectives:
Evaluate soybean tolerance and glyphosate-resistant waterhemp control from Cobra versus competitive programs.

Contacts	
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

Crop Description	
Crop 1: GLXMA Glycine max Soybean Variety: AG3832 BBCH Scale: BSOY Description: RR2Y	Planting Date: 5-24-13 Planting Method: SEEDED
Planting Rate, Unit: 145000 S/A Depth, Unit: 1.75 IN Row Spacing, Unit: 30 IN	

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

Site and Design							
Treated Plot Width: 6.67 FT Total Plot Width: 10 FT Treated Plot Length: 30 FT Total Plot Length: 30 FT	Site Type: FIELD Experimental Unit: 1 PLOT Tillage Type: REDTIL reduced-till Study Design: RACOB� Randomized Complete Block (RCB)						
Replications: 4 Untreated Arrangement: INCLUDED single control randomized in each block							
<table border="1" style="width: 100%;"> <thead> <tr> <th>No.</th> <th>Previous Crop</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>ZEAMD</td> <td>2012</td> </tr> </tbody> </table>		No.	Previous Crop	Year	1.	ZEAMD	2012
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1.	ZEAMD	2012					

Maintenance					
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1.	N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A				

Soil Description										
% Sand: 15.4 % OM: 2.15 Texture: SIL silt loam % Silt: 64.7 pH: 6.9 Soil Name: Okaw % Clay: 19.9 CEC: 12.4										
Additional Measured Elements										
<table border="1" style="width: 100%;"> <thead> <tr> <th>Element</th> <th>Quantity</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>94</td> <td>lb/A</td> </tr> <tr> <td>K</td> <td>468</td> <td>lb/A</td> </tr> </tbody> </table>		Element	Quantity	Unit	P1	94	lb/A	K	468	lb/A
Element	Quantity	Unit								
P1	94	lb/A								
K	468	lb/A								

Moisture and Weather Conditions	
Overall Moisture Conditions: NORMAL Closest Weather Station: SOUTHERN IL AIRPORT (93810)	Distance, Unit: 1.5 MI

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No.	Date	Amount	Unit	Type	Type Description	Interval	Unit	Min Temp	Max Temp	Temp Unit
1.	5-3-13	1.33	IN	RAIN	rain	3	DAY			
2.	5-5-13	0.75	IN	RAIN	rain	2	DAY			
3.	5-6-13					7	DAY	41	80	F
4.	5-10-13	0.17	IN	RAIN	rain	3	DAY			
5.	5-13-13					7	DAY	37	87	F
6.	5-16-13	0.23	IN	RAIN	rain	2	DAY			
7.	5-20-13					7	DAY	43	85	F
8.	5-21-13	0.91	IN	RAIN	rain	1	DAY			
9.	5-27-13					7	DAY	59	86	F
10.	5-31-13	0.7	IN	RAIN	rain	3	DAY			
11.	6-1-13	1.67	IN	RAIN	rain	2	DAY			
12.	6-3-13					7	DAY	50	82	F
13.	6-10-13	0.13	IN	RAIN	rain	5	DAY			
14.	6-10-13					7	DAY	57	93	F
15.	6-17-13	0.36	IN	RAIN	rain	2	DAY			
16.	6-17-13					7	DAY	61	92	F
17.	6-22-13	0.34	IN	RAIN	rain	2	DAY			
18.	6-24-13					7	DAY	64	93	F
19.	6-26-13	1.25	IN	RAIN	rain	2	DAY			
20.	6-30-13	0.3	IN	RAIN	rain	2	DAY			
21.	7-1-13					7	DAY	57	88	F
22.	7-2-13	1.16	IN	RAIN	rain	2	DAY			
23.	7-8-13					7	DAY	59	92	F
24.	7-14-13	0.05	IN	RAIN	rain	5	DAY			
25.	7-15-13					7	DAY	68	93	F
26.	7-20-13	1.24	IN	RAIN	rain	2	DAY			
27.	7-22-13					7	DAY	51	90	F
28.	7-27-13	0.13	IN	RAIN	rain	2	DAY			
29.	7-29-13					7	DAY	58	86	F
30.	7-30-13	0.98	IN	RAIN	rain	1	DAY			
31.	8-3-13	0.24	IN	RAIN	rain	3	DAY			
32.	8-5-13	0.53	IN	RAIN	rain	2	DAY			
33.	8-5-13					7	DAY	61	98	F
34.	8-8-13	1.78	IN	RAIN	rain	4	DAY			
35.	8-12-13	0.12	IN	RAIN	rain	2	DAY			
36.	8-12-13					7	DAY	51	84	F
37.	8-17-13	0.21	IN	RAIN	rain	2	DAY			
38.	8-19-13	0.01	IN	RAIN	rain	1	DAY			
39.	8-19-13					7	DAY	60	90	F

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Application Description

	A	B
Application Date:	5-24-13	6-27-13
Appl. Start Time:	15:00	7:00
Appl. Stop Time:	16:00	7:30
Application Method:	Spray	Spray
Application Timing:	PRE	POST
Application Placement:	BROSOI	BROFOL
Applied By:	LXF	NTH
Air Temperature, Unit:	82 F	85 F
% Relative Humidity:	31	74
Wind Velocity, Unit:	2 MPH	1 MPH
Wind Direction:	N	NW
Dew Presence (Y/N):	N	N
Soil Temperature, Unit:	77 F	79 F
Soil Moisture:	NORMAL	ABONOR
% Cloud Cover:	0	0
Next Moisture Occurred On:	5-30-13	6-29-13
Time to Next Moisture, Unit:	6 DAY	2 DAY

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA	GLXMA
Stage Scale Used:	DESC	DESC
Stage Majority, Percent:	NA	V5
Stage Minimum, Percent:		V4
Stage Maximum, Percent:		V5
Height, Unit:		12 IN
Height Minimum, Maximum:		10 12

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMATA W	AMATA W
Stage Majority, Percent:	NA	10
Stage Minimum, Percent:		2
Stage Maximum, Percent:		40
Height, Unit:		5 IN
Height Minimum, Maximum:		1 14
Density, Unit:		10 FT2

Application Equipment

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	40 PSI	40 PSI
Nozzle Type:	XR	XR
Nozzle Size:	8002	8002
Boom Length, Unit:	10 FT	6.67 FT
Spray Volume, Unit:	15 GPA	15 GPA

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Pest Code Crop Code Rating Date Rating Type Rating Unit Rating Timing Trt-Eval Interval										GLXMA 10-19-13 Moisture Percent	GLXMA 10-19-13 Yield bu/A	GLXMA 7-11-13 Injury Percent	GLXMA 7-25-13 Injury Percent	GLXMA 8-22-13 Injury Percent	
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Rate	Growth Unit	Stage	Appl Code					
1	VALOR SX NO POST HERBICIDE	51 WG		0.064 lb ai/a		2 oz/a		PRE	A		18.4 a	57 d	0 d	0 c	0 a
2	VALOR SX ROUNDUP POWERMAX N-PAK AMS	51 WG 4.5 SL 100 SL		0.064 lb ai/a 1.16 lb ae/a 2.5 % v/v		2 oz/a 33 fl oz/a 2.5 % v/v		PRE POST POST	A B B		19.2 a	72 ab	0 d	1 bc	0 a
3	VALOR SX COBRA COC (PRIME OIL)	51 WG 2 EC 100 SL		0.064 lb ai/a 0.188 lb ai/a 1 pt/a		2 oz/a 12 fl oz/a 1 pt/a		PRE POST POST	A B B		18.0 a	67 c	16 a	3 a	0 a
4	VALOR SX COBRA RESOURCE COC (PRIME OIL)	51 WG 2 EC 0.86 EC 100 SL		0.064 lb ai/a 0.188 lb ai/a 0.0403 lb ai/a 1 pt/a		2 oz/a 12 fl oz/a 6 fl oz/a 1 pt/a		PRE POST POST POST	A B B B		17.7 a	69 bc	17 a	3 a	0 a
5	VALOR SX ROUNDUP POWERMAX COBRA COC (PRIME OIL) N-PAK AMS	51 WG 4.5 SL 2 EC 100 SL 100 SL		0.064 lb ai/a 1.16 lb ae/a 0.188 lb ai/a 1 pt/a 2.5 % v/v		2 oz/a 33 fl oz/a 12 fl oz/a 1 pt/a 2.5 % v/v		PRE POST POST POST POST	A B B B B		18.7 a	67 c	16 a	3 a	0 a
6	VALOR SX FLEXSTAR NIS (ACTIVATOR 90)	51 WG 1.88 EC 100 SL		0.064 lb ai/a 0.235 lb ai/a 0.25 % v/v		2 oz/a 16 fl oz/a 0.25 % v/v		PRE POST POST	A B B		18.0 a	72 ab	8 bc	0 c	0 a
7	VALOR SX FLEXSTAR GT 3.5 NIS (ACTIVATOR 90) N-PAK AMS	51 WG 2.82 SL 100 SL 100 SL		0.064 lb ai/a 1.59 lb ae/a 0.25 % v/v 2.5 % v/v		2 oz/a 4.5 pt/a 0.25 % v/v 2.5 % v/v		PRE POST POST POST	A B B B		18.0 a	73 a	7 bc	0 c	0 a
8	VALOR SX ROUNDUP POWERMAX MARVEL N-PAK AMS	51 WG 4.5 SL 3 SL 100 SL		0.064 lb ai/a 1.16 lb ae/a 0.164 lb ai/a 2.5 % v/v		2 oz/a 33 fl oz/a 7 fl oz/a 2.5 % v/v		PRE POST POST POST	A B B B		17.7 a	71 ab	9 b	2 abc	0 a
9	VALOR SX ROUNDUP POWERMAX COBRA V-10206 COC (PRIME OIL) N-PAK AMS	51 WG 4.5 SL 2 EC 85 WG 100 SL 100 SL		0.064 lb ai/a 1.16 lb ae/a 0.188 lb ai/a 0.08 lb ai/a 1 pt/a 2.5 % v/v		2 oz/a 33 fl oz/a 12 fl oz/a 1.5 oz/a 1 pt/a 2.5 % v/v		PRE POST POST POST POST POST	A B B B B B		17.5 a	67 c	16 a	2 ab	0 a
10	VALOR SX TOUCHDOWN TOTAL PREFIX N-PAK AMS	51 WG 4.17 SL 5.29 EC 100 SL		0.064 lb ai/a 1.08 lb ae/a 1.32 lb ai/a 2.5 % v/v		2 oz/a 33 fl oz/a 32 fl oz/a 2.5 % v/v		PRE POST POST POST	A B B B		17.6 a	73 a	6 c	0 c	0 a
11	VALOR SX ROUNDUP POWERMAX COBRA WARRANT COC (PRIME OIL) N-PAK AMS	51 WG 4.5 SL 2 EC 3 CS 100 SL 100 SL		0.064 lb ai/a 1.16 lb ae/a 0.188 lb ai/a 1.13 lb ai/a 1 pt/a 2.5 % v/v		2 oz/a 33 fl oz/a 12 fl oz/a 1.5 qt/a 1 pt/a 2.5 % v/v		PRE POST POST POST POST POST	A B B B B B		17.9 a	68 bc	16 a	2 abc	0 a
LSD (P=.05)											1.58	3.7	3.1	1.6	0.2
Standard Deviation											1.09	2.5	2.2	1.1	0.2
CV											6.05	3.69	21.61	84.73	663.33
Replicate F											1.013	2.664	1.324	1.426	1.000
Replicate Prob(F)											0.4007	0.0658	0.2849	0.2546	0.4064
Treatment F											0.872	13.002	36.731	4.930	1.000
Treatment Prob(F)											0.5684	0.0001	0.0001	0.0003	0.4654

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							AMATA-HR 7-11-13 Control Percent 14 DA-B	AMATA-HR 7-25-13 Control Percent 28 DA-B	AMATA-HR 8-22-13 Control Percent 56 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code
1	VALOR SX NO POST HERBICIDE	51 WG		0.064 lb ai/a		2 oz/a		PRE	A
2	VALOR SX ROUNDUP POWERMAX N-PAK AMS	51 WG 4.5 SL 100 SL		0.064 lb ai/a 1.16 lb ae/a 2.5 % v/v		2 oz/a 33 fl oz/a 2.5 % v/v		PRE POST POST	A B B
3	VALOR SX COBRA COC (PRIME OIL)	51 WG 2 EC 100 SL		0.064 lb ai/a 0.188 lb ai/a 1 pt/a		2 oz/a 12 fl oz/a 1 pt/a		PRE POST POST	A B B
4	VALOR SX COBRA RESOURCE COC (PRIME OIL)	51 WG 2 EC 0.86 EC 100 SL		0.064 lb ai/a 0.188 lb ai/a 0.0403 lb ai/a 1 pt/a		2 oz/a 12 fl oz/a 6 fl oz/a 1 pt/a		PRE POST POST POST	A B B B
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6	VALOR SX FLEXSTAR NIS (ACTIVATOR 90)	51 WG 1.88 EC 100 SL		0.064 lb ai/a 0.235 lb ai/a 0.25 % v/v		2 oz/a 16 fl oz/a 0.25 % v/v		PRE POST POST	A B B
7	VALOR SX FLEXSTAR GT 3.5 NIS (ACTIVATOR 90) N-PAK AMS	51 WG 2.82 SL 100 SL 100 SL		0.064 lb ai/a 1.59 lb ae/a 0.25 % v/v 2.5 % v/v		2 oz/a 4.5 pt/a 0.25 % v/v 2.5 % v/v		PRE POST POST POST	A B B B
8	VALOR SX ROUNDUP POWERMAX MARVEL N-PAK AMS	51 WG 4.5 SL 3 SL 100 SL		0.064 lb ai/a 1.16 lb ae/a 0.164 lb ai/a 2.5 % v/v		2 oz/a 33 fl oz/a 7 fl oz/a 2.5 % v/v		PRE POST POST POST	A B B B
9	VALOR SX ROUNDUP POWERMAX COBRA V-10206 COC (PRIME OIL) N-PAK AMS	51 WG 4.5 SL 2 EC 85 WG 100 SL 100 SL		0.064 lb ai/a 1.16 lb ae/a 0.188 lb ai/a 0.08 lb ai/a 1 pt/a 2.5 % v/v		2 oz/a 33 fl oz/a 12 fl oz/a 1.5 oz/a 1 pt/a 2.5 % v/v		PRE POST POST POST POST POST	A B B B B B
10	VALOR SX TOUCHDOWN TOTAL PREFIX N-PAK AMS	51 WG 4.17 SL 5.29 EC 100 SL		0.064 lb ai/a 1.08 lb ae/a 1.32 lb ai/a 2.5 % v/v		2 oz/a 33 fl oz/a 32 fl oz/a 2.5 % v/v		PRE POST POST POST	A B B B
11	VALOR SX ROUNDUP POWERMAX COBRA WARRANT COC (PRIME OIL) N-PAK AMS	51 WG 4.5 SL 2 EC 3 CS 100 SL 100 SL		0.064 lb ai/a 1.16 lb ae/a 0.188 lb ai/a 1.13 lb ai/a 1 pt/a 2.5 % v/v		2 oz/a 33 fl oz/a 12 fl oz/a 1.5 qt/a 1 pt/a 2.5 % v/v		PRE POST POST POST POST POST	A B B B B B
LSD (P=.05)							2.5	6.5	7.8
Standard Deviation							1.7	4.5	5.4
CV							1.98	5.32	6.42
Replicate F							1.006	1.466	1.836
Replicate Prob(F)							0.4038	0.2437	0.1619
Treatment F							1153.042	161.948	113.339
Treatment Prob(F)							0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: Valent (64.02).
2. Ratings: CI/WC 14, 28, and 56 DA-B.
3. Application A is a PRE blanket across the entire trial area.
4. Application B should be 21-28 DAP or 2-4 inch weeds.
5. Blanket burndown application of glyphosate (1.5 lbae/A) plus Salvo (12 floz/A) was applied to all plots on 4-2-13.
Blanket application prior to planting of Gramoxone (2.5 pt/A) was applied to all plots on 5-24-13.
Blanket of Select (8 oz/A) plus COC (1%) was applied for grass control on 6-27-13.
6. Yield.
7. AMATA-HR = Herbicide-resistant waterhemp (glyphosate).
8. Following the PRE application the first rainfall event, beginning 6 days later, was 2.37 inch over 3 days.
Following the POST application the first rainfall event, beginning 2 days later, was 1.46 inch over 4 days.
9. Harvested 10-20-13, (2) 30 inch or (4) 15 inch rows by 26.5 ft.