

Southern Illinois University

Postemergence Palmer Amaranth Control with Cobra.

Trial ID: 13-COL-CobraTM Location: Collinsville, IL Trial Year: 2013
Investigator: Bryan Young

Trial Status: F one-year/final Initiation Date: 6-5-13 Completion Date: 8-8-13		Trial Location
City: Collinsville Country: USA		
State/Prov.: Illinois IL		
Postal Code: 62234		

Objectives:
Evaluate crop tolerance and Palmer Amaranth control from tank-mixtures of Cobra plus soil residual herbicides.

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		Contacts
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Crop 1: GLXMA Glycine max Soybean Variety: AG3832 Description: RR2Y Planting Date: 6-5-13 Planting Rate, Unit: 145000 S/A Planting Method: SEEDED Depth, Unit: 1.25 IN Row Spacing, Unit: 30 IN	Crop Description
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Pest 1 Type: W Code: AMAPA Amaranthus palmeri S.Wats. Common Name: amaranth, Palmer Description: glyphosate-resistant Palmer amaranth	Pest Description
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Treated Plot Width: 6.67 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)		Site and Design						
Replications: 3 Untreated Arrangement: INCLUDED single control randomized in each block								
<table border="1"> <thead> <tr> <th>No.</th> <th>Previous Crop</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>GLXMA</td> <td>2012</td> </tr> </tbody> </table>	No.	Previous Crop	Year	1.	GLXMA	2012		
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No.	Maintenance Product Name				
1.	N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A				

% Sand: 5.26 % OM: 1.95 Texture: SIL silt loam % Silt: 84.13 pH: 5.7 Soil Name: Worthen/Littleton % Clay: 10.61 CEC: 11.77	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>88</td> <td>lb/A</td> </tr> <tr> <td>K</td> <td>338</td> <td>lb/A</td> </tr> </tbody> </table>	Element	Quantity	Unit	P1	88	lb/A	K	338	lb/A	
Element	Quantity	Unit								
P1	88	lb/A								
K	338	lb/A								

Overall Moisture Conditions: ABONOR Closest Weather Station: On-site Watch Dog Station	Moisture and Weather Conditions Distance, Unit: 0.25 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.	6-4-13	0.24	IN	RAIN	rain					
3.	6-5-13	0.04	IN	RAIN	rain					
4.	6-7-13	0.06	IN	RAIN	rain					
5.	6-9-13					7	DAY	59	94	F
6.	6-9-13	0.17	IN	RAIN	rain	2	DAY			
7.	6-16-13					7	DAY	61	90	F
8.	6-17-13	2.35	IN	RAIN	rain	3	DAY			
9.	6-23-13					7	DAY	64	92	F
10.	6-23-13	3.31	IN	RAIN	rain	2	DAY			
11.	6-26-13	0.67	IN	RAIN	rain	1	DAY			
12.	6-30-13	0.53	IN	RAIN	rain	2	DAY			
13.	6-30-13					7	DAY	61	86	F
14.	7-2-13	1.42	IN	RAIN	rain	2	DAY			
15.	7-6-13	0.92	IN	RAIN	rain	1	DAY			
16.	7-7-13					7	DAY	62	94	F
17.	7-10-13	0.14	IN	RAIN	rain	1	DAY			
18.	7-14-13					7	DAY	64	94	F
19.	7-19-13	0.03	IN	RAIN	rain	1	DAY			
20.	7-21-13	0.47	IN	RAIN	rain	2	DAY			
21.	7-21-13					7	DAY	56	91	F
22.	7-26-13	0.03	IN	RAIN	rain	1	DAY			
23.	7-30-13	0.5	IN	RAIN	rain	2	DAY			

Application Description

	A	B
Application Date:	6-5-13	6-27-13
Appl. Start Time:	17:00	6:50
Appl. Stop Time:	17:20	7:20
Application Method:	Spray	Spray
Application Timing:	PRE	21DAP
Application Placement:	BROSOI	BROFOL
Applied By:	LXF	LXF
Air Temperature, Unit:	85 F	85 F
% Relative Humidity:	43	67
Wind Velocity, Unit:	3 MPH	3 MPH
Wind Direction:	E	W
Dew Presence (Y/N):	N	N
Soil Temperature, Unit:	76 F	77 F
Soil Moisture:	NORMAL	NORMAL
% Cloud Cover:	60	5
Next Moisture Occurred On:	6-5-13	6-29-13
Time to Next Moisture, Unit:	3 HR	58 HR

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA	GLXMA
Stage Scale Used:	DESC	DESC
Stage Majority, Percent:	NA	V3
Stage Minimum, Percent:		V2
Stage Maximum, Percent:		V3
Height, Unit:		13 IN
Height Minimum, Maximum:		8 13

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	A	B
Pest 1 Code, Type, Scale:	AMAPA W	AMAPA W
Stage Majority, Percent:	NA	2
Stage Minimum, Percent:		COTY
Stage Maximum, Percent:		4
Height, Unit:		0.5 IN
Height Minimum, Maximum:		0.25 1
Density, Unit:		0.5 FT2

Application Equipment

	A	B
Appl. Equipment:	CO2 sprayer	CO2 sprayer
Equipment Type:	BACSPR	BACSPR
Operation Pressure, Unit:	30 PSI	30 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 7-4-13 Injury Percent	GLXMA 7-11-13 Injury Percent	GLXMA 7-25-13 Injury Percent	GLXMA 8-8-13 Injury Percent	AMAPA-HR 7-11-13 Control Percent	AMAPA-HR 7-25-13 Control Percent	AMAPA-HR 8-8-13 Control Percent
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	0 c	0 c	0 c	0 c
2	VALOR SX ROUNDUP POWERMAX AMS	51 WG 4.5 SL 100 SG		0.064 lb ai/a 1.13 lb ae/a 2.5 lb/a		2 oz/a 32 fl oz/a 2.5 lb/a		PRE 21DAP B 21DAP B	A	0 c	0 c	0 c	0 c
3	VALOR SX PREFIX ROUNDUP POWERMAX AMS COC (PRIME OIL)	51 WG 5.29 EC 4.5 SL 100 SG 100 SL		0.064 lb ai/a 1.32 lb ai/a 1.13 lb ae/a 2.5 lb/a 1 qt/a		2 oz/a 1 qt/a 32 fl oz/a 2.5 lb/a 1 qt/a		PRE 21DAP B 21DAP B 21DAP B 21DAP B	A	27 b	18 b	7 b	3 bc
4	VALOR SX COBRA V-10206 ROUNDUP POWERMAX AMS COC (PRIME OIL)	51 WG 2 EC 85 WG 4.5 SL 100 SG 100 SL		0.064 lb ai/a 0.195 lb ai/a 0.08 lb ai/a 1.13 lb ae/a 2.5 lb/a 1 qt/a		2 oz/a 12.5 fl oz/a 1.5 oz/a 32 fl oz/a 2.5 lb/a 1 qt/a		PRE 21DAP B 21DAP B 21DAP B 21DAP B 21DAP B	A	48 a	37 a	20 a	7 ab
5	VALOR SX COBRA V-10206 ROUNDUP POWERMAX AMS COC (PRIME OIL)	51 WG 2 EC 85 WG 4.5 SL 100 SG 100 SL		0.064 lb ai/a 0.195 lb ai/a 0.106 lb ai/a 1.13 lb ae/a 2.5 lb/a 1 qt/a		2 oz/a 12.5 fl oz/a 2 oz/a 32 fl oz/a 2.5 lb/a 1 qt/a		PRE 21DAP B 21DAP B 21DAP B 21DAP B 21DAP B	A	43 a	37 a	20 a	9 ab
6	VALOR SX COBRA WARRANT ROUNDUP POWERMAX AMS COC (PRIME OIL)	51 WG 2 EC 3 CS 4.5 SL 100 SG 100 SL		0.064 lb ai/a 0.195 lb ai/a 1.13 lb ai/a 1.13 lb ae/a 2.5 lb/a 1 qt/a		2 oz/a 12.5 fl oz/a 3 pt/a 32 fl oz/a 2.5 lb/a 1 qt/a		PRE 21DAP B 21DAP B 21DAP B 21DAP B 21DAP B	A	50 a	37 a	17 a	8 ab
7	VALOR SX COBRA DUAL II MAGNUM ROUNDUP POWERMAX AMS COC (PRIME OIL)	51 WG 2 EC 7.64 EC 4.5 SL 100 SG 100 SL		0.064 lb ai/a 0.195 lb ai/a 1.27 lb ai/a 1.13 lb ae/a 2.5 lb/a 1 qt/a		2 oz/a 12.5 fl oz/a 1.33 pt/a 32 fl oz/a 2.5 lb/a 1 qt/a		PRE 21DAP B 21DAP B 21DAP B 21DAP B 21DAP B	A	48 a	38 a	20 a	10 a
LSD (P=.05)										8.1	8.3	4.4	6.1
Standard Deviation										4.6	4.7	2.5	3.4
CV										14.75	19.68	20.83	64.35
Replicate F										1.600	3.857	0.774	1.896
Replicate Prob(F)										0.2421	0.0509	0.4828	0.1925
Treatment F										73.314	43.125	43.097	4.538
Treatment Prob(F)										0.0001	0.0001	0.0001	0.0125
											5.8	3.5	6.4
											3.3	1.9	3.6
											3.4	2.04	3.81
											1.778	2.735	1.000
											0.2108	0.1050	0.3966
											8.067	43.403	19.542
											0.0012	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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Trial Comments

1. Protocol: Valent (V10206 MD64.01).
2. Ratings: CI at 7 and 14 DA-B; WC 14, 28, and 42 DA-B, target AMAPA.
3. Blanket PRE application, Valor 2 oz/A, is application A in treatment list, spray center, 10 ft wide all plots.
4. No yield.
5. AMAPA-HR = Herbicide-resistant Palmer amaranth (glyphosate).
6. Weeds that had emerged prior to planting were controlled with tillage and Gramoxone.
7. Rainfall following the PRE application was 0.27 inch within 4 days, then 2.35 inch 12 days after the PRE.
8. Not harvested.