

Southern Illinois University

Herbicide Response Screen.

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

Trial Status: F one-year/final Initiation Date: 6-5-13 Completion Date: 7-23-13	Trial Location City: Collinsville Country: USA State/Prov.: Illinois IL Postal Code: 62234
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Objectives:
Determine the efficacy of various herbicides on a glyphosate-resistant population of Palmer amaranth.

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
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Crop 1: NONE - Non-crop Variety: NON-CROP	Crop Description Planting Method: NA
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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 Treated Plot Length: 30 FT Total Plot Length: 30 FT Replications: 3 Untreated Arrangement: INCLUDED single control randomized in each block	Site and Design Site Type: FIELD Experimental Unit: 1 PLOT Tillage Type: REDTIL reduced-till Study Design: RACOB� Randomized Complete Block (RCB)
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No.	Previous Crop	Year
1.	GLXMA	2012

Maintenance <table border="1"> <thead> <tr> <th>No.</th> <th>Maintenance Product Name</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A</td> </tr> </tbody> </table>	No.	Maintenance Product Name	1.	N 0 LB/A, P2O5 0 LB/A, K2O 0 LB/A
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
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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	6-25-13
Appl. Start Time:	16:00	6:00
Appl. Stop Time:	16:20	6:50
Application Method:	Spray	Spray
Application Timing:	PRE	3-4"W
Application Placement:	BROFOL	BROFOL
Applied By:	EJM	LXF
Air Temperature, Unit:	85 F	80 F
% Relative Humidity:	45	80
Wind Velocity, Unit:	3 MPH	4 MPH
Wind Direction:	E	S
Dew Presence (Y/N):	N	N
Soil Temperature, Unit:	76 F	76 F
Soil Moisture:	NORMAL	ABONOR
% Cloud Cover:	60	10
Next Moisture Occurred On:	6-5-13	6-26-13
Time to Next Moisture, Unit:	5 HR	24 HR

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	NONE	NONE
Stage Scale Used:	DESC	DESC
Stage Majority, Percent:	NA	NA

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Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMAPA W	AMAPA W
Stage Majority, Percent:	NA	10
Stage Minimum, Percent:		5
Stage Maximum, Percent:		20
Height, Unit:		6 IN
Height Minimum, Maximum:		4 8
Density, Unit:		12 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:	6.67 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										AMAPA-HR 7-9-13 Control Percent 14 DA-B	AMAPA-HR 7-23-13 Control Percent 28 DA-B
Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Rate Unit	Other Rate	Other Rate Unit	Growth Stage	Appl Code		
1	NONTREATED									0 h	0 n
2	ROUNDUP POWERMAX N-PAK AMS	4.5 SL 100 SL		0.77 lb ae/a 5 % v/v		22 fl oz/a 5 % v/v		3-4"W 3-4"W	B B	33 f	23 m
3	ROUNDUP POWERMAX N-PAK AMS	4.5 SL 100 SL		1.55 lb ae/a 5 % v/v		44 fl oz/a 5 % v/v		3-4"W 3-4"W	B B	63 e	38 l
4	ROUNDUP POWERMAX N-PAK AMS	4.5 SL 100 SL		12.4 lb ae/a 5 % v/v		352 fl oz/a 5 % v/v		3-4"W 3-4"W	B B	98 a	73 fgh
5	RAPTOR COC (PRIME OIL) N-PAK AMS	1 SL 100 SL 100 SL		0.039 lb ai/a 1 % v/v 5 % v/v		5 fl oz/a 1 % v/v 5 % v/v		3-4"W 3-4"W 3-4"W	B B B	18 g	10 mn
6	AATREX COC (PRIME OIL)	4 SC 100 SL		1 lb ai/a 1 % v/v		1 qt/a 1 % v/v		3-4"W 3-4"W	B B	92 ab	87 a-e
7	FLEXSTAR COC (PRIME OIL) N-PAK AMS	1.88 EC 100 SL 100 SL		0.353 lb ai/a 1 % v/v 5 % v/v		24 fl oz/a 1 % v/v 5 % v/v		3-4"W 3-4"W 3-4"W	B B B	98 a	96 a
8	ROUNDUP POWERMAX RAPTOR AATREX COC (PRIME OIL) N-PAK AMS	4.5 SL 1 SL 4 SC 100 SL 100 SL		0.77 lb ae/a 0.039 lb ai/a 1 lb ai/a 1 % v/v 5 % v/v		22 fl oz/a 5 fl oz/a 1 qt/a 1 % v/v 5 % v/v		3-4"W 3-4"W 3-4"W 3-4"W 3-4"W	B B B B B	98 a	95 ab
9	ROUNDUP POWERMAX RAPTOR AATREX FLEXSTAR COC (PRIME OIL) N-PAK AMS	4.5 SL 1 SL 4 SC 1.88 EC 100 SL 100 SL		0.77 lb ae/a 0.039 lb ai/a 1 lb ai/a 0.353 lb ai/a 1 % v/v 5 % v/v		22 fl oz/a 5 fl oz/a 1 qt/a 24 fl oz/a 1 % v/v 5 % v/v		3-4"W 3-4"W 3-4"W 3-4"W 3-4"W 3-4"W	B B B B B B	98 a	94 abc
10	2,4-D LV 4	3.8 EC		0.475 lb ae/a		1 pt/a		3-4"W	B	82 bc	61 hij
11	2,4-D LV 4	3.8 EC		0.95 lb ae/a		2 pt/a		3-4"W	B	91 ab	77 d-g
12	CLARITY	4 SL		0.25 lb ae/a		8 fl oz/a		3-4"W	B	73 cde	65 ghi
13	CLARITY	4 SL		0.5 lb ae/a		16 fl oz/a		3-4"W	B	82 bc	82 b-f
14	LIBERTY 280 N-PAK AMS	2.34 EC 100 SL		0.53 lb ai/a 5 % v/v		29 fl oz/a 5 % v/v		3-4"W 3-4"W	B B	97 a	80 def
15	LIBERTY 280 N-PAK AMS	2.34 EC 100 SL		0.66 lb ai/a 5 % v/v		36 fl oz/a 5 % v/v		3-4"W 3-4"W	B B	97 a	76 efg
16	CALLISTO COC (PRIME OIL)	4 SC 100 SL		0.094 lb ai/a 1 % v/v		3 fl oz/a 1 % v/v		3-4"W 3-4"W	B B	72 cde	48 jkl
17	BALANCE PRO COC (PRIME OIL)	4 SC 100 SL		0.0625 lb ai/a 1 % v/v		2 fl oz/a 1 % v/v		3-4"W 3-4"W	B B	68 de	47 kl
18	GRAMOXONE 2 SL COC (PRIME OIL)	2 SL 100 SL		0.625 lb ai/a 1 % v/v		2.5 pt/a 1 % v/v		3-4"W 3-4"W	B B	94 ab	71 fgh

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							AMAPA-HR	AMAPA-HR
Crop Code							7-9-13	7-23-13
Rating Date							Control	Control
Rating Type							Percent	Percent
Rating Unit							14 DA-B	28 DA-B
Rating Timing								
Trt-Eval Interval								
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Growth Unit Stage	Appl Code
19	NONTREATED							
							0 h	0 n
20	AATREX	4	SC	2 lb	ai/a	2 qt/a	PRE	A
							99 a	81 c-f
21	FLEXSTAR	1.88	EC	0.353 lb	ai/a	24 fl oz/a	PRE	A
							96 a	90 a-d
22	PURSUIT	2	SL	0.0625 lb	ai/a	4 fl oz/a	PRE	A
							7 gh	7 n
23	CALLISTO	4	SC	0.188 lb	ai/a	6 fl oz/a	PRE	A
							78 cd	48 jkl
24	BALANCE PRO	4	SC	0.0625 lb	ai/a	2 fl oz/a	PRE	A
							76 cd	57 ijk
LSD (P=.05)							12.5	13.6
Standard Deviation							7.6	8.2
CV							10.62	14.06
Replicate F							0.180	3.466
Replicate Prob(F)							0.8361	0.0396
Treatment F							58.697	42.780
Treatment Prob(F)							0.0001	0.0001

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Trial Comments

1. Protocol: SIU (BGY).
2. Ratings: WC at 14 and 28 DA-B.
3. Blanket of Gramoxone at trial initiation if necessary to start weed-free.
4. AMAPA-HR = Herbicide-resistant Palmer amaranth (glyphosate).
5. Weeds that had emerged prior to planting were controlled with tillage and Gramoxone.
6. Rainfall following the PRE application was 0.27 inch within 4 days, then 2.35 inch 12 days after the PRE.
7. Not harvested (non-crop).