

Southern Illinois University

Herbicide Response Screen.

Trial ID: 12-COL-Screen

Location: Collinsville, IL

Investigator: Bryan Young

**General Trial Information**

**Study Director:** Bryan Young  
**Investigator:** Bryan Young **Title:** Professor

**Trial Status:** F - one-year/final  
**Initiation Date:** 7-6-12

**Trial Location**

**City:** Collinsville  
**State/Prov.:** IL  
**Postal Code:** 62234  
**Country:** USA

**Objectives:**

Determine the efficacy of various herbicides on a glyphosate-resistant population of Palmer amaranth.

**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:** NONE - Non-crop

**Pest Description**

**Pest 1 Type:** W **Code:** AMAPA - Amaranthus palmeri S.Wats.  
**Common Name:** amaranth, Palmer  
**Description:** glyphosate-resistant Palmer amaranth

**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 L Randomized Complete Block (RCB)

No.	Previous Crop	Year
1.	GLXMA	2011

**Maintenance**

No.	Maintenance Treatment Name
1.	N 0 LB/A, P205 0 LB/A, K20 0 LB/A

**Soil Description**

**% Sand:** 8.48 **% OM:** 2.08 **Texture:** SIL SILT LOAM  
**% Silt:** 79.03 **pH:** 8 **Soil Name:** Littleton / Haymond / Orion  
**% Clay:** 12.49 **CEC:** 12.61

**Additional Measured Elements**

Element	Quantity	Unit
P1	279	LB/A
K	410	LB/A

**Moisture and Weather Conditions**

**Overall Moisture Conditions:** BELNOR below normal  
**Closest Weather Station:** ICN - Belleville IL **Distance, Unit:** 15 MI

No.	Date	Amount	Unit	Type	Type Description
1.	6-11-12	0.67	IN	RAIN	rain
2.	6-16-12	0.5	IN	RAIN	rain
3.	7-6-12	1.0	IN	SPWACA	sprinkler - water cannon/traveling gun
4.	7-26-12	0.25	IN	RAIN	rain

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## Application Description

	A	B
Application Date:	7-6-12	7-12-12
Time of Day:	17:00	15:00
Application Method:	Spray	Spray
Application Timing:	PRE	3-4"W
Application Placement:	BROFOL	BROFOL
Applied By:	JRK	JRK
Air Temperature, Unit:	105 F	95 F
% Relative Humidity:	38	31
Wind Velocity, Unit:	2 MPH	4 MPH
Wind Direction:	E	W
Dew Presence (Y/N):	N no	N no
Soil Temperature, Unit:	100 F	81 F
Soil Moisture:	BELNOR	BELNOR
% Cloud Cover:	5	5
Next Rain Occurred On:	7-6-12	7-26-12

## Crop Stage At Each Application

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

## Pest Stage At Each Application

	A		B	
	AMAPA	W DESC	AMAPA	W DESC
Pest 1 Code, Type, Scale:				
Stage Majority, Percent:	NA		8	
Stage Minimum, Percent:			4	
Stage Maximum, Percent:			12	
Height, Unit:			4	IN
Height Minimum, Maximum:			2	6
Density, Unit:			7	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 8-4-12 Control Percent 29 DA-A	AMAPA-HR 8-18-12 Control Percent 43 DA-A		
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Rate Unit	Other Rate	Other Rate	Growth Unit Stage	Appl Code		
1	NONTREATED									0 h	0 h
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 B 3-4"W B		35 g	32 g
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 B 3-4"W B		68 cd	48 ef
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 B 3-4"W B		97 a	88 a
5	PURSUIT COC (PRIME OIL) N-PAK AMS	2 SL 100 SL 100 SL		0.0625 lb ai/a 1 % v/v 5 % v/v		4 fl oz/a 1 % v/v 5 % v/v		3-4"W B 3-4"W B 3-4"W B		5 h	8 h
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 B 3-4"W B		86 ab	48 ef
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 B 3-4"W B 3-4"W B		68 cd	38 fg
8	ROUNDUP POWERMAX PURSUIT AATREX COC (PRIME OIL) N-PAK AMS	4.5 SL 2 SL 4 SC 100 SL 100 SL		0.77 lb ae/a 0.0625 lb ai/a 1 lb ai/a 1 % v/v 5 % v/v		22 fl oz/a 4 fl oz/a 1 qt/a 1 % v/v 5 % v/v		3-4"W B 3-4"W B 3-4"W B 3-4"W B 3-4"W B		89 ab	62 cd
9	ROUNDUP POWERMAX PURSUIT AATREX FLEXSTAR COC (PRIME OIL) N-PAK AMS	4.5 SL 2 SL 4 SC 1.88 EC 100 SL 100 SL		0.77 lb ae/a 0.0625 lb ai/a 1 lb ai/a 0.353 lb ai/a 1 % v/v 5 % v/v		22 fl oz/a 4 fl oz/a 1 qt/a 24 fl oz/a 1 % v/v 5 % v/v		3-4"W B 3-4"W B 3-4"W B 3-4"W B 3-4"W B 3-4"W B		91 ab	58 de
10	2,4-D LV 4	3.8 EC		0.475 lb ae/a		1 pt/a		3-4"W B		52 ef	71 bc
11	2,4-D LV 4	3.8 EC		0.95 lb ae/a		2 pt/a		3-4"W B		68 cd	72 bc
12	CLARITY	4 SL		0.25 lb ae/a		8 fl oz/a		3-4"W B		57 de	85 a
13	CLARITY	4 SL		0.5 lb ae/a		16 fl oz/a		3-4"W B		78 bc	87 a
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 B 3-4"W B		92 ab	69 bcd
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 B 3-4"W B		96 a	80 ab
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 B 3-4"W B		47 efg	30 g
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 B 3-4"W B		42 fg	33 g
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 B 3-4"W B		97 a	86 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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							AMAPA-HR	AMAPA-HR			
Pest Code							8-4-12	8-18-12			
Crop Code							Control	Control			
Rating Date							Percent	Percent			
Rating Type											
Rating Unit											
Rating Timing											
Trt-Eval Interval							29 DA-A	43 DA-A			
Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Unit Unit	Other Rate	Other Rate	Growth Unit Stage	Appl Code		
19	NONTREATED									0 h	0 h
20	AATREX	4	SC	2 lb ai/a		2 qt/a		PRE	A	91 ab	90 a
21	FLEXSTAR	1.88	EC	0.353 lb ai/a		24 fl oz/a		PRE	A		
22	PURSUIT	2	SL	0.0625 lb ai/a		4 fl oz/a		PRE	A	5 h	7 h
23	CALLISTO	4	SC	0.188 lb ai/a		6 fl oz/a		PRE	A	10 h	10 h
24	BALANCE PRO	4	SC	0.0625 lb ai/a		2 fl oz/a		PRE	A	5 h	5 h
LSD (P=.05)							13.4	11.2			
Standard Deviation							8.1	6.8			
CV							14.65	14.04			
Replicate F							2.476	3.547			
Replicate Prob(F)							0.0957	0.0373			
Treatment F							58.743	67.508			
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. Irrigation following the PRE application was 1.0 inch 4 hours later.
6. Missing data for treatment 21 was due to application problems.
7. Not harvested (non-crop).