

# University of Georgia

**Palmer amaranth response to late-season layby or hooded application options.**

Trial ID: C44-06	Study Dir.: Stanley Culpepper
Location: Attapulcus	Investigator: Stanley Culpepper

Reps: 3                              Plots: 6 by 30 feet  
 Spray vol: 14.8 gal/ac              Mix size: 1.5 liters (min .69451)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Form Rate	Rate Unit	Grow Stg	Appl Code	Amt to Measure	Product	Plot No. By Rep		
											1	2	3
1	Direx	4		L	1	QT/A	POST	A	25.34 ml/mx		101	203	307
	COC			L	1	QT/A	POST	A	25.34 ml/mx				
	MSMA	6		L	1	QT/A	POST	A	25.34 ml/mx				
2	Direx	4		L	1	QT/A	POST	A	25.34 ml/mx		102	205	308
	COC			L	1	QT/A	POST	A	25.34 ml/mx				
	Staple	3.2		L	1.7	OZ/A	POST	A	1.346 ml/mx				
	MSMA	6		L	1	QT/A	POST	A	25.34 ml/mx				
3	Direx	4		L	1	QT/A	POST	A	25.34 ml/mx		103	204	305
	COC			L	1	QT/A	POST	A	25.34 ml/mx				
	Aim	2		L	1.25	OZ/A	POST	A	0.9898 ml/mx				
	MSMA	6		L	1	QT/A	POST	A	25.34 ml/mx				
4	Direx	4		L	1	QT/A	POST	A	25.34 ml/mx		104	202	304
	COC			L	1	QT/A	POST	A	25.34 ml/mx				
	Gramoxone	2.5		L	1	QT/A	POST	A	25.34 ml/mx				
5	Valor	51		DG	2	OZ/A	POST	A	1.518 g/mx		105	201	306
	COC			L	1	QT/A	POST	A	25.34 ml/mx				
	MSMA	6		L	1	QT/A	POST	A	25.34 ml/mx				
6	Direx	4		L	1	QT/A	POST	A	25.34 ml/mx		106	207	302
	Valor	51		DG	1	OZ/A	POST	A	0.759 g/mx				
	COC			L	1	QT/A	POST	A	25.34 ml/mx				
	MSMA	6		L	1	QT/A	POST	A	25.34 ml/mx				
7	Direx	4		L	1	QT/A	POST	A	25.34 ml/mx		107	208	303
	Valor	51		DG	0.5	OZ/A	POST	A	0.3795 g/mx				
	COC			L	1	QT/A	POST	A	25.34 ml/mx				
	MSMA	6		L	1	QT/A	POST	A	25.34 ml/mx				
8	Non-treated									108	206	301	

Sort Order: Treatment

Product quantities required for listed treatments and applications in one trial:

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
190.014	ml	Direx	4	L	
221.683	ml	COC		L	
190.014	ml	MSMA	6	L	
1.683	ml	Staple	3.2	L	
1.237	ml	Aim	2	L	
31.669	ml	Gramoxone	2.5	L	
3.321	g	Valor	51	DG	

\* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1.5 liters (mix size basis).

\* Product amount calculations increased 25 % for overage adjustment.

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Trial ID: C44-06

Study Dir.: Stanley Culpepper

Location: Attapulcus

Investigator: Stanley Culpepper

## Trial Comments

OBJECTIVE: Determine the most effective hooded or layby herbicides to use for Palmer amaranth management.

### PALMER RESPONSE:

1. At 8 DAT, Direx + Gramoxone, Valor + MSMA, and Direx + Valor + MSMA mixtures provided greater than 90% control.
2. By 22 DAT, only Gramoxone + Direx provided excellent control. However, control was statistically similar to the Direx + Valor + MSMA mixtures.
3. By 79 DAT, the Gramoxone + Direx and Direx + Valor + MSMA mixtures were generally the most effective options.

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Location: Attapulgus

Investigator: Stanley Culpepper

Weed Code		AMAPA	AMAPA	AMAPA		
Rating Data Type		control	control	control		
Rating Unit		%	%	%		
Rating Date		Aug-10-06	Aug-24-06	Oct-20-06		
Assessed By		SC	SC	SC		
Trt-Eval Interval		8 DA-A	22 DA-A	79 DA-A		
Trt No.	Treatment Name	Rate	Unit			
		1	2	3		
1	Direx	1	QT/A	82 b	76 bc	77 c
	COC	1	QT/A			
	MSMA	1	QT/A			
2	Direx	1	QT/A	83 b	80 bc	83 bc
	COC	1	QT/A			
	Staple	1.7	OZ/A			
	MSMA	1	QT/A			
3	Direx	1	QT/A	82 b	72 c	76 c
	COC	1	QT/A			
	Aim	1.25	OZ/A			
	MSMA	1	QT/A			
4	Direx	1	QT/A	97 a	96 a	94 a
	COC	1	QT/A			
	Gramoxone	1	QT/A			
5	Valor	2	OZ/A	93 a	75 bc	82 bc
	COC	1	QT/A			
	MSMA	1	QT/A			
6	Direx	1	QT/A	93 a	86 ab	91 ab
	Valor	1	OZ/A			
	COC	1	QT/A			
	MSMA	1	QT/A			
7	Direx	1	QT/A	91 ab	88 ab	90 ab
	Valor	0.5	OZ/A			
	COC	1	QT/A			
	MSMA	1	QT/A			
8	Non-treated			0 c	0 d	0 d
LSD (P=.05)		8.4		12.9		8.8
Standard Deviation		4.8		7.3		5.0
CV		6.15		10.25		6.75
Bartlett's X2		15.112		10.339		7.167
P(Bartlett's X2)		0.019*		0.066		0.306

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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Trial ID: C44-06 Study Dir.: Stanley Culpepper  
 Location: Attapulgus Investigator: Stanley Culpepper

### GENERAL TRIAL INFORMATION

**Study Director:** Stanley Culpepper **Title:** Ext. Weed Science  
**Affiliation:** University of Georgia  
**Postal Code:** 31794  
**Investigator:** Stanley Culpepper **Title:** Ext. Weed Sciene  
**Affiliation:** University of Georgia  
**Postal Code:** 31794

### TRIAL LOCATION

**City:** Attapulgus **Trial Status:** completed  
**State/Prov.:** GA **Trial Reliability:** excellent  
**Postal Code:** USA **Initiation Date:** Aug-02-06  
**Country:** USA **Planned Completion Date:** \_\_\_\_\_  
**E-Longitude of LL Corner °:** \_\_\_\_\_ **N-Latitude of LL Corner °:** \_\_\_\_\_  
**Altitude of LL Corner:** \_\_\_\_\_ **Unit:** \_\_\_\_\_ **Angle y-axis to North °:** \_\_\_\_\_  
**Directions:**

### COOPERATOR/LANDOWNER

**Cooperator:** \_\_\_\_\_ **Country:** \_\_\_\_\_  
**Org:** \_\_\_\_\_ **Phone No:** \_\_\_\_\_  
**Address 1:** \_\_\_\_\_ **Fax No:** \_\_\_\_\_  
**Address 2:** \_\_\_\_\_  
**City:** \_\_\_\_\_  
**State/Prov:** \_\_\_\_\_  
**Postal Code:** \_\_\_\_\_

**Conducted Under GLP (Y/N):** N **Conducted Under GEP (Y/N):** N  
**Guidelines:** \_\_\_\_\_ **Guideline Description:** \_\_\_\_\_

**Objective:**

**Conclusions:**

### CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	AMAPA	Palmer amaranth	

**Crop 1:** . **NO CROP** **Variety:** .  
**Planting Date:** Jan-18-07 **Planting Method:** \_\_\_\_\_  
**Rate:** \_\_\_\_\_ **Depth:** \_\_\_\_\_ **Perennial Age:** \_\_\_\_\_  
**Row Spacing:** \_\_\_\_\_ **Spacing Within Row:** \_\_\_\_\_ **Seed Bed:** \_\_\_\_\_  
**Soil Temperature:** \_\_\_\_\_ **Soil Moisture:** \_\_\_\_\_ **Emergence Date:** \_\_\_\_\_

### SITE AND DESIGN

**Plot Width, Unit:** 6 FT **Plot Length, Unit:** 30 FT **Reps:** 3  
**Site Type:** Attapulgus Research Station  
**Tillage Type:** conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

**Trial Initiation Comments:**

Weed	Previous Crops	Previous Pesticides	Year
1.			

### MAINTENANCE

**Field Prep./Maintenance:**

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No.	Date	Maintenance Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

**SOIL DESCRIPTION**

% Sand: 84      % OM: 6.0      Texture: Loamy sand  
 % Silt: 8      pH: 1.3      Soil Name: \_\_\_\_\_  
 % Clay: 8      CEC: \_\_\_\_\_      Fert. Level: \_\_\_\_\_

**ADDITIONAL MEASURED ELEMENTS**

Element	Quantity	Unit

**MOISTURE CONDITIONS**

No.	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: irrigated

Closest Weather Station: \_\_\_\_\_ Distance: \_\_\_\_\_ Unit: \_\_\_\_

**APPLICATION DESCRIPTION**

	A
Application Date:	Aug-02-06
Time of Day:	9:00 am
Application Method:	broadcast
Application Timing:	POST
Applic. Placement:	overtop
Air Temp., Unit:	84 F
% Relative Humidity:	63
Wind Velocity, Unit:	4 mph
Dew Presence (Y/N):	n
Water Hardness:	
Soil Temp., Unit:	89 F
Soil Moisture:	moist
% Cloud Cover:	3

**CROP STAGE AT EACH APPLICATION**

	A
Crop 1 Code, Stage:	. .
Stage Scale:	.
Height, Unit:	

**WEED STAGE AT EACH APPLICATION**

	A
Weed 1 Code, Stage:	AMAPA POST
Stage Scale:	12-24 in
Density, Unit:	6 ydsq

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## APPLICATION EQUIPMENT

	A
Appl. Equipment:	backpack
Operating Pressure:	24
Nozzle Type:	flat fan
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 inch
Nozzles/Row:	2
Band Width, Unit:	
Boom Length, Unit:	4.5 ft
Boom Height, Unit:	15 inch
Ground Speed, Unit:	3 mph
Incorporation Equip.:	
Hours to Incorp.:	
Incorp. Depth, Unit:	
Carrier:	water
Spray Volume, Unit:	14.8 GPA
Spray pH:	
Propellant:	CO2
Tank Mix (Y/N):	Y

Trt No	Treatment Application Comment