

# University of Georgia

**Glyphosate-resistant Palmer amaranth response to Valor and Cobra mixtures.**

Trial ID: C21-06

Study Dir.: Stanley Culpepper

Location: Macon (Paved Rd)

Investigator: Stanley Culpepper

Reps: 4

Plots: 9 by 25 feet

Spray vol: 14.8 gal/ac

Mix size: 1.5 liters (min 1.1575)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep			
									1	2	3	4
1	Cobra	2	L	L	12.5 OZ/A	POST	A	9.898 ml/mx	101	211	301	411
	COC		L	L	1 PT/A	POST	A	12.67 ml/mx				
2	Valor	51	WDG	L	1 OZ/A	POST	A	0.759 g/mx	102	210	305	402
	NIS		L	L	0.25 % V/V	POST	A	3.75 ml/mx				
3	Valor	51	WDG	L	2 OZ/A	POST	A	1.518 g/mx	103	205	311	405
	NIS		L	L	0.25 % V/V	POST	A	3.75 ml/mx				
4	Roundup WeatherMax	4.5	L	L	22 OZ/A	POST	A	17.42 ml/mx	104	209	308	406
5	Roundup WeatherMax	4.5	L	L	22 OZ/A	POST	A	17.42 ml/mx	105	208	304	410
	Cobra	2	EC	L	12.5 OZ/A	POST	A	9.898 ml/mx				
6	Roundup WeatherMax	4.5	L	L	22 OZ/A	POST	A	17.42 ml/mx	106	212	310	407
	Cobra	2	EC	L	8 OZ/A	POST	A	6.334 ml/mx				
7	Roundup WeatherMax	4.5	L	L	22 OZ/A	POST	A	17.42 ml/mx	107	203	302	401
	Valor	51	WDG	L	1 OZ/A	POST	A	0.759 g/mx				
	NIS		L	L	0.25 % V/V	POST	A	3.75 ml/mx				
8	Roundup WeatherMax	4.5	L	L	22 OZ/A	POST	A	17.42 ml/mx	108	206	312	403
	Valor	51	WDG	L	2 OZ/A	POST	A	1.518 g/mx				
	NIS		L	L	0.25 % V/V	POST	A	3.75 ml/mx				
9	Roundup WeatherMax	4.5	L	L	22 OZ/A	POST	A	17.42 ml/mx	109	204	309	412
	Valor	51	WDG	L	1 OZ/A	POST	A	0.759 g/mx				
	Dual Magnum	7.62	L	L	12 OZ/A	POST	A	9.502 ml/mx				
10	Roundup WeatherMax	4.5	L	L	22 OZ/A	POST	A	17.42 ml/mx	110	201	303	404
	Valor	51	WDG	L	2 OZ/A	POST	A	1.518 g/mx				
	Dual Magnum	7.62	L	L	12 OZ/A	POST	A	9.502 ml/mx				
11	Cobra	2	L	L	12.5 OZ/A	POST	A	9.898 ml/mx	111	207	306	408
	COC		L	L	1 PT/A	POST	A	12.67 ml/mx				
	MSMA		L	L	2 PT/A	POST	A	25.34 ml/mx				
12	Valor	51	WDG	L	2 OZ/A	POST	A	1.518 g/mx	112	202	307	409
	NIS		L	L	0.25 % V/V	POST	A	3.75 ml/mx				
	MSMA	6	L	L	2 PT/A	POST	A	25.34 ml/mx				

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
24.744	ml	Cobra	2	L	
31.669	ml	COC		L	
10.437	g	Valor	51	WDG	
23.435	ml	NIS		L	
152.423	ml	Roundup WeatherMax	4.5	L	
20.290	ml	Cobra	2	EC	
23.754	ml	Dual Magnum	7.62	L	
31.669	ml	MSMA		L	
31.669	ml	MSMA	6	L	

\* '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.

\* 'Per volume' calculations use spray volume= 14.8 gal/ac, mix size= 1.5 liters.

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## Glyphosate-resistant Palmer amaranth response to Valor and Cobra mixtures.

Trial ID: C21-06

Study Dir.: Stanley Culpepper

Location: Macon (Paved Rd)

Investigator: Stanley Culpepper

### Trial Comments

**OBJECTIVE:** Determine glyphosate-resistant Palmer amaranth response to Valor or Cobra mixtures.

#### Palmer Response:

1. In the four row plot, 2 rows had 4 inch tall Palmer and the other 2 rows had 8 inch tall Palmer at time of application because of tractor tracks thus ratings were made for both Palmer sizes through 25 DAT.
2. At 16 DAT, excellent control of 4-inch Palmer was visually noted with all Valor mixtures.
3. At 25 DAT, regrowth of 4-inch Palmer from Valor and Cobra treatments was in full progress. Greater than 85% control was only noted with Valor/Dual mixtures and MSMA mixtures.
4. Control of 8 inch Palmer was much more challenging at either 16 or 25 DAT. At 25 DAT, no treatment provided greater than 65% control which again was a Valor/Dual tank mixture.
5. At 47 DAT, control for the entire plot (both 4 and 8 inch Palmer at time of treatment) was poor. However, Valor/Dual mixtures and MSMA mixtures were the most effective.

#### Cotton Response:

1. Since the Palmer was as large as the cotton treatments were applied topically.
2. By 25 DAT, all Valor treatments provided excellent control and these mixtures were more effective than Cobra mixtures.

#### CONCLUSIONS:

1. These results suggest that glyphosate/Valor mixtures, one of most effective broad spectrum layby mixtures, will be of little use in fields infested with glyphosate-resistant Palmer amaranth.
2. Dual Magnum in mixture with Valor improved postemergence activity of Valor and was more effective than NIS.

#### GENERAL COMMENTS:

1. Prowl H20 was applied PRE over the entire trial area.
2. Roundup was applied early POST when Palmer was 2 inches in height.





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

**SOIL DESCRIPTION**

% Sand: 82      % OM: 2      Texture: Loamy sand  
 % Silt: 14      pH: 6.3      Soil Name: \_\_\_\_\_  
 % Clay: 4      CEC: \_\_\_\_\_      Fert. Level: \_\_\_\_\_

**ADDITIONAL MEASURED ELEMENTS**

Element	Quantity	Unit

**MOISTURE CONDITIONS**

No.	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: wet right after planting and then dry for rest of s  
 Closest Weather Station: \_\_\_\_\_ Distance: \_\_\_\_\_ Unit: \_\_

**APPLICATION DESCRIPTION**

	A
Application Date:	Jun-01-06
Time of Day:	10:00am
Application Method:	broadcast
Application Timing:	POST
Applic. Placement:	overtop
Air Temp., Unit:	84 F
% Relative Humidity:	55
Wind Velocity, Unit:	3 mph
Dew Presence (Y/N):	
Water Hardness:	
Soil Temp., Unit:	90 F
Soil Moisture:	fair
% Cloud Cover:	45

**CROP STAGE AT EACH APPLICATION**

	A
Crop 1 Code, Stage:	GOSHI POST
Stage Scale:	4 leaf
Height, Unit:	4 inch

**WEED STAGE AT EACH APPLICATION**

	A
Weed 1 Code, Stage:	AMAPA POST
Stage Scale:	4-8 in
Density, Unit:	75 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