

Purdue University Weed Science

EVALUATION OF CLARITY + COBRA TANK-MIX VS. SEQUENTIAL COMBINATIONS ON GLYPHOSATE-RESISTANT PALMER AMARANTH

Trial ID: 14S-CCP-CTS-08 Location: 12 MILE Trial Year: 2014
 Protocol ID: 14S-CCP-CTS-08 Investigator: Dr. Bill Johnson
 Project ID: 64.02 Study Director: Joe Ikley
 Sponsor Contact: Valent - Eric Ott

General Trial Information

Study Director: Joe Ikley **Title:** Research Associate
Investigator: Dr. Bill Johnson **Title:** Professor

Discipline: H herbicide
Trial Status: F one-year/final
Initiation Date: 5/6/2014
Completion Date: 7/16/2014

Trial Location

City: Twelve Mile **Country:** USA United States
State/Prov.: Indiana
Postal Code: 46988

Contacts

Study Director: Joe Ikley **Title:** Research Associate
Organization: Purdue University
Address: 915 West State Street **Phone No.:** 765-494-0891
City+State/Prov: West Lafayette **Mobile No.:** 410-596-9091
Postal Code: 47907 **E-mail:** jikley@purdue.edu

Investigator: Dr. Bill Johnson **Title:** Professor
Organization: Purdue University
Address: 915 West State Street **Phone No.:** 765-494-4656
City+State/Prov: West Lafayette **Mobile No.:** 765-404-9801
Postal Code: 47907 **E-mail:** wgj@purdue.edu

Crop Description

Crop 1: GLXMA Glycine max Soybean
Variety: ASGROW 2933
Description: RR

Planting Rate, Unit: 140000 S/A **Planting Date:** 5/6/2014
Depth, Unit: 1.5 IN **Planting Method:** PLANTD planted
Row Spacing, Unit: 30 IN **Planting Equipment:** PP Plot Planter
Soil Temperature, Unit: 60 F **Emergence Date:** 5/10/2014
Soil Moisture: DRY dry

Pest Description

Pest 1 Type: W **Code:** AMAPA *Amaranthus palmeri*
Common Name: Palmer amaranth

Site and Design

Treated Plot Width: 10 FT
Treated Plot Length: 30 FT
Treated Plot Area: 300 FT² **Treatments:** 15
Replications: 4 **Study Design:** RACOB L Randomized Complete Block (RCB)

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Application Description

	A	B
Application Date:	6/14/2014	6/19/2014
Appl. Start Time:	10:00	09:15
Appl. Stop Time:	11:00 AM	9:45 AM
Application Method:	SPRAY	SPRAY
Application Timing:	6" WEEDS	7 DAAA
Application Placement:	BROADC	BROADC
Applied By:	Ikley	Ikley
Air Temperature, Unit:	59 F	73 F
% Relative Humidity:	59	100
Wind Velocity, Unit:	2 MPH	2 MPH
Wind Direction:	SSW	N
Dew Presence (Y/N):	Y yes	Y yes
Soil Temperature, Unit:	64 F	74 F
Soil Moisture:	SLIWET	WET
% Cloud Cover:	50	70

Crop Stage At Each Application

	A	B
Crop 1 Code, BBCH Scale:	GLXMA BSOY	GLXMA BSOY
Stage Scale Used:	BBCH	
Stage Majority, Percent:	15	
Stage Minimum, Percent:	14	
Stage Maximum, Percent:	15	
Height, Unit:	5.5 IN	
Height Minimum, Maximum:	4 9	

Pest Stage At Each Application

	A	B
Pest 1 Code, Type, Scale:	AMAPA W	AMAPA W
Stage Majority, Percent:	38G	35G
Stage Minimum, Percent:	37G	32G
Stage Maximum, Percent:	39G	39G
Height, Unit:	5 IN	5 IN
Height Minimum, Maximum:	4 7	2 8
Density, Unit:	40 YD2	20 YD2

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Application Equipment		
	A	B
Appl. Equipment:	CO2 Backpack	CO2 Backpack
Equipment Type:	SPRBAC	SPRBAC
Operation Pressure, Unit:	18 PSI	18 PSI
Nozzle Type:	Flat Fan	Flat Fan
Nozzle Size:	XR11002	XR11002
Nozzle Spacing, Unit:	15 IN	15 IN
Nozzles/Row:	6	6
Boom Length, Unit:	7.5 FT	7.5 FT
Boom Height, Unit:	18 IN	18 IN
Ground Speed, Unit:	3 MPH	3 MPH
Carrier:	H2O	H2O
Water Hardness (ppm CaCO3):	150	150
Spray Volume, Unit:	15 GAL/AC	15 GAL/AC
Mix Size, Unit:	1.8 Liters	1.8 Liters
Propellant:	CO2	CO2
Tank Mix (Y/N):	N no	N no

Trial Comments

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EVALUATION OF CLARITY + COBRA TANK-MIX VS. SEQUENTIAL COMBINATIONS ON GLYPHOSATE-RESISTANT PALMER AMARANTH

Trial ID: 14S-CCP-CTS-08 Location: 12 MILE Trial Year: 2014
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 Project ID: 64.02 Study Director: Joe Ikley
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Reps: 4 Plots: 10 by 30 feet
 Spray vol: 15 gal/ac Mix size: 1.8 liters (min 1.5642)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Appl Unit	Appl Code	Appl Description	Amt to Measure	Product	Rep 1	2	3	4
1	Untreated Check										101	503	706	1002
2	CLARITY PREFERENCE (NIS)	4 LB/AE/GAL	89.5 %	L	8 fl oz/a	0.25 % v/v	A	6" AMAPA 6" AMAPA	7.5 ml/mx 4.5 ml/mx		102	504	601	901
3	CLARITY PREFERENCE (NIS)	4 LB/AE/GAL	89.5 %	L	16 fl oz/a	0.25 % v/v	A	6" AMAPA 6" AMAPA	15.0 ml/mx 4.5 ml/mx		103	402	605	1001
4	COBRA COC	2 LB/GAL	100 %	EC SL	10 fl oz/a	1 pt/a	A	6" AMAPA 6" AMAPA	9.375 ml/mx 15.0 ml/mx		104	403	606	1006
5	COBRA COC	2 LB/GAL	100 %	EC SL	12.5 fl oz/a	1 pt/a	A	6" AMAPA 6" AMAPA	11.72 ml/mx 15.0 ml/mx		105	406	602	904
6	COBRA COC	2 LB/GAL	100 %	EC SL	16 fl oz/a	1 pt/a	A	6" AMAPA 6" AMAPA	15.0 ml/mx 15.0 ml/mx		106	505	703	906
7	CLARITY COBRA COC	4 LB/AE/GAL 2 LB/GAL 100 %		L EC SL	8 fl oz/a 10 fl oz/a 1 pt/a	A A A		6" AMAPA 6" AMAPA 6" AMAPA	7.5 ml/mx 9.375 ml/mx 15.0 ml/mx		201	405	701	804
8	CLARITY COBRA COC	4 LB/AE/GAL 2 LB/GAL 100 %		L EC SL	8 fl oz/a 12.5 fl oz/a 1 pt/a	A A A		6" AMAPA 6" AMAPA 6" AMAPA	7.5 ml/mx 11.72 ml/mx 15.0 ml/mx		202	306	603	1003
9	CLARITY COBRA COC	4 LB/AE/GAL 2 LB/GAL 100 %		L EC SL	16 fl oz/a 10 fl oz/a 1 pt/a	A A A		6" AMAPA 6" AMAPA 6" AMAPA	15.0 ml/mx 9.375 ml/mx 15.0 ml/mx		203	404	704	805
10	CLARITY COBRA COC	4 LB/AE/GAL 2 LB/GAL 100 %		L EC SL	16 fl oz/a 12.5 fl oz/a 1 pt/a	A A A		6" AMAPA 6" AMAPA 6" AMAPA	15.0 ml/mx 11.72 ml/mx 15.0 ml/mx		204	502	604	902
11	CLARITY PREFERENCE (NIS) COBRA COC	4 LB/AE/GAL 2 LB/GAL 100 %	89.5 %	L EC SL	8 fl oz/a 10 fl oz/a 1 pt/a	A B B		6" AMAPA 6" AMAPA 7 DAAA 7 DAAA	7.5 ml/mx 4.5 ml/mx 9.375 ml/mx 15.0 ml/mx		205	401	705	1005
12	CLARITY PREFERENCE (NIS) COBRA COC	4 LB/AE/GAL 2 LB/GAL 100 %	89.5 %	L EC SL	8 fl oz/a 12.5 fl oz/a 1 pt/a	A B B		6" AMAPA 6" AMAPA 7 DAAA 7 DAAA	7.5 ml/mx 4.5 ml/mx 11.72 ml/mx 15.0 ml/mx		206	304	803	1004
13	CLARITY PREFERENCE (NIS) COBRA COC	4 LB/AE/GAL 2 LB/GAL 100 %	89.5 %	L EC SL	16 fl oz/a 10 fl oz/a 1 pt/a	A B B		6" AMAPA 6" AMAPA 7 DAAA 7 DAAA	15.0 ml/mx 4.5 ml/mx 9.375 ml/mx 15.0 ml/mx		301	506	702	903
14	CLARITY PREFERENCE (NIS) COBRA COC	4 LB/AE/GAL 2 LB/GAL 100 %	89.5 %	L EC SL	16 fl oz/a 12.5 fl oz/a 1 pt/a	A B B		6" AMAPA 6" AMAPA 7 DAAA 7 DAAA	15.0 ml/mx 4.5 ml/mx 11.72 ml/mx 15.0 ml/mx		302	305	801	806
15	CLARITY FLEXSTAR COC	4 LB/AE/GAL 1.88 LB/GAL 100 %		L L SL	16 fl oz/a 1.5 pt/a 1 pt/a	A A A		6" AMAPA 6" AMAPA 6" AMAPA	15.0 ml/mx 22.5 ml/mx 15.0 ml/mx		303	501	802	905

Sort Order: Replicate 1

Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
127.500	ml	CLARITY	4	L	
26.997	ml	PREFERENCE (NIS)	89.5	L	
120.469	ml	COBRA	2	EC	

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Product quantities required for listed treatments and applications of trials included in this table:

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
179.980	ml	COC	100	SL	
22.498	ml	FLEXSTAR	1.88	L	

* 'Per area' calculations based on spray volume= 15 gal/ac, mix size= 1.8 liters (mix size basis).

* 'Per volume' calculations use spray volume= 15 gal/ac, mix size= 1.8 liters.

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 Project ID: 64.02 Study Director: Joe Ikley
 Sponsor Contact: Valent - Eric Ott

Pest Type		W Weed		W Weed	W Weed
Pest Code		AMAPA		AMAPA	AMAPA
Pest Scientific Name		Amaranthus pal>		Amaranthus pal>	Amaranthus pal>
Pest Name		Palmer amaranth		Palmer amaranth	Palmer amaranth
Crop Code	GLXMA		GLXMA		
BBCH Scale	BSOY		BSOY		
Crop Scientific Name	Glycine max		Glycine max		
Crop Name	Soybean		Soybean		
Part Rated	PLOT C	PLOT P	PLOT C	PLOT P	PLOT P
Rating Date	6/19/2014	6/19/2014	6/26/2014	6/26/2014	7/3/2014
Rating Type	PHYGEN	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Days After First/Last Applic.	5 5	5 5	12 7	12 7	19 14
Trt-Eval Interval	0 DA-B	0 DA-B	7 DA-B	7 DA-B	14 DA-B
ARM Action Codes	P	P	P	P	P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate	Appl			
No. Name	Rate Unit	Code Plot	1	2	3
1 Untreated Check		101	0	0	0
		503	0	0	0
		706	0	0	0
		1002	0	0	0
		Mean =	0	0	0
2 CLARITY	8 fl oz/a A	102	.	20	.
PREFERENCE (NIS)	0.25 % v/v A	504	.	20	.
		601	.	19*	.
		901	.	15	.
		Mean =	.	19	.
3 CLARITY	16 fl oz/a A	103	.	40	.
PREFERENCE (NIS)	0.25 % v/v A	402	.	10	.
		605	.	29*	.
		1001	.	35	.
		Mean =	.	29	.
4 COBRA	10 fl oz/a A	104	20	30	.
COC	1 pt/a A	403	15	15	.
		606	15	19*	.
		1006	10	10	.
		Mean =	15	19	.
5 COBRA	12.5 fl oz/a A	105	20	40	.
COC	1 pt/a A	406	20	30	.
		602	15	31*	.
		904	15	20	.
		Mean =	18	30	.
6 COBRA	16 fl oz/a A	106	25	70	.
COC	1 pt/a A	505	15	40	.
		703	20	35	.
		906	10	20	.
		Mean =	18	41	.
7 CLARITY	8 fl oz/a A	201	.	60	.
COBRA	10 fl oz/a A	405	.	60	.
COC	1 pt/a A	701	.	70	.
		804	.	50	.
		Mean =	.	60	.
8 CLARITY	8 fl oz/a A	202	.	85	.
COBRA	12.5 fl oz/a A	306	.	50	.
COC	1 pt/a A	603	.	69*	.
		1003	.	70	.
		Mean =	.	69	.

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Pest Type		W Weed		W Weed	W Weed
Pest Code		AMAPA		AMAPA	AMAPA
Pest Scientific Name		Amaranthus pal>		Amaranthus pal>	Amaranthus pal>
Pest Name		Palmer amaranth		Palmer amaranth	Palmer amaranth
Crop Code	GLXMA		GLXMA		
BBCH Scale	BSOY		BSOY		
Crop Scientific Name	Glycine max		Glycine max		
Crop Name	Soybean		Soybean		
Part Rated	PLOT C	PLOT P	PLOT C	PLOT P	PLOT P
Rating Date	6/19/2014	6/19/2014	6/26/2014	6/26/2014	7/3/2014
Rating Type	PHYGEN	CONTRO	PHYGEN	CONTRO	CONTRO
Rating Unit	%	%	%	%	%
Days After First/Last Applic.	5 5	5 5	12 7	12 7	19 14
Trt-Eval Interval	0 DA-B	0 DA-B	7 DA-B	7 DA-B	14 DA-B
ARM Action Codes	P	P	P	P	P
Number of Decimals	0	0	0	0	0
Trt Treatment	Rate Appl				
No. Name	Rate Unit Code Plot	1	2	3	4
9 CLARITY	16 fl oz/a A 203	.	60	.	60
COBRA	10 fl oz/a A 404	.	75	.	85
COC	1 pt/a A 704	.	50	.	40
	805	.	40	.	65
	Mean =	.	56	.	63
10 CLARITY	16 fl oz/a A 204	.	80	.	55
COBRA	12.5 fl oz/a A 502	.	70	.	65
COC	1 pt/a A 604	.	61*	.	51*
	902	.	30	.	70
	Mean =	.	60	.	60
11 CLARITY	8 fl oz/a A 205	.	20	.	90
PREFERENCE (NIS)	0.25 % v/v A 401	.	15	.	95
COBRA	10 fl oz/a B 705	.	20	.	70
COC	1 pt/a B 1005	.	20	.	90
	Mean =	.	19	.	86
12 CLARITY	8 fl oz/a A 206	.	40	.	90
PREFERENCE (NIS)	0.25 % v/v A 304	.	15	.	95
COBRA	12.5 fl oz/a B 803	.	10	.	65
COC	1 pt/a B 1004	.	15	.	95
	Mean =	.	20	.	86
13 CLARITY	16 fl oz/a A 301	.	20	.	100
PREFERENCE (NIS)	0.25 % v/v A 506	.	20	.	90
COBRA	10 fl oz/a B 702	.	30	.	80
COC	1 pt/a B 903	.	10	.	95
	Mean =	.	20	.	91
14 CLARITY	16 fl oz/a A 302	.	15	.	100
PREFERENCE (NIS)	0.25 % v/v A 305	.	25	.	95
COBRA	12.5 fl oz/a B 801	.	20	.	85
COC	1 pt/a B 806	.	15	.	95
	Mean =	.	19	.	94
15 CLARITY	16 fl oz/a A 303	.	80	.	95
FLEXSTAR	1.5 pt/a A 501	.	80	.	85
COC	1 pt/a A 802	.	80	.	85
	905	.	50	.	90
	Mean =	.	73	.	89

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Pest Type				W Weed
Pest Code				AMAPA
Pest Scientific Name				Amaranthus pal>
Pest Name				Palmer amaranth
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Part Rated				PLOT P
Rating Date				7/16/2014
Rating Type				CONTRO
Rating Unit				%
Days After First/Last Applic.				32 27
Trt-Eval Interval				27 DA-B
ARM Action Codes				P
Number of Decimals				0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code	Plot	6
1 Untreated Check			101	0
			503	0
			706	0
			1002	0
			Mean =	0
2 CLARITY	8 fl oz/a A		102	20
PREFERENCE (NIS)	0.25 % v/v A		504	30
			601	11*
			901	20
			Mean =	20
3 CLARITY	16 fl oz/a A		103	15
PREFERENCE (NIS)	0.25 % v/v A		402	30
			605	14*
			1001	35
			Mean =	24
4 COBRA	10 fl oz/a A		104	20
COC	1 pt/a A		403	10
			606	4*
			1006	20
			Mean =	14
5 COBRA	12.5 fl oz/a A		105	25
COC	1 pt/a A		406	10
			602	3*
			904	10
			Mean =	12
6 COBRA	16 fl oz/a A		106	60
COC	1 pt/a A		505	20
			703	15
			906	10
			Mean =	26
7 CLARITY	8 fl oz/a A		201	80
COBRA	10 fl oz/a A		405	50
COC	1 pt/a A		701	40
			804	50
			Mean =	55
8 CLARITY	8 fl oz/a A		202	85
COBRA	12.5 fl oz/a A		306	85
COC	1 pt/a A		603	68*
			1003	70
			Mean =	77

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Pest Type				W Weed
Pest Code				AMAPA
Pest Scientific Name				Amaranthus pal>
Pest Name				Palmer amaranth
Crop Code				
BBCH Scale				
Crop Scientific Name				
Crop Name				
Part Rated				PLOT P
Rating Date				7/16/2014
Rating Type				CONTRO
Rating Unit				%
Days After First/Last Applic.				32 27
Trt-Eval Interval				27 DA-B
ARM Action Codes				P
Number of Decimals				0
Trt Treatment	Rate	Appl		
No. Name	Rate Unit	Code Plot	6	
9 CLARITY	16 fl oz/a	A 203	70	
COBRA	10 fl oz/a	A 404	75	
COC	1 pt/a	A 704	65	
		805	85	
		Mean =	74	
10 CLARITY	16 fl oz/a	A 204	70	
COBRA	12.5 fl oz/a	A 502	95	
COC	1 pt/a	A 604	71*	
		902	85	
		Mean =	80	
11 CLARITY	8 fl oz/a	A 205	90	
PREFERENCE (NIS)	0.25 % v/v	A 401	85	
COBRA	10 fl oz/a	B 705	85	
COC	1 pt/a	B 1005	80	
		Mean =	85	
12 CLARITY	8 fl oz/a	A 206	90	
PREFERENCE (NIS)	0.25 % v/v	A 304	95	
COBRA	12.5 fl oz/a	B 803	70	
COC	1 pt/a	B 1004	80	
		Mean =	84	
13 CLARITY	16 fl oz/a	A 301	95	
PREFERENCE (NIS)	0.25 % v/v	A 506	85	
COBRA	10 fl oz/a	B 702	80	
COC	1 pt/a	B 903	90	
		Mean =	88	
14 CLARITY	16 fl oz/a	A 302	95	
PREFERENCE (NIS)	0.25 % v/v	A 305	99	
COBRA	12.5 fl oz/a	B 801	90	
COC	1 pt/a	B 806	95	
		Mean =	95	
15 CLARITY	16 fl oz/a	A 303	90	
FLEXSTAR	1.5 pt/a	A 501	85	
COC	1 pt/a	A 802	60	
		905	90	
		Mean =	81	

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Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

AMAPA, Amaranthus palmeri, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Part Rated

PLOT = plot

C = Crop is Part Rated

P = Pest is Part Rated

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

ARM Action Codes

P = Rating scale of 0 to 100 (e.g. % control or injury)

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Pest Type			W Weed		W Weed		W Weed		W Weed
Pest Code			AMAPA		AMAPA		AMAPA		AMAPA
Pest Scientific Name			Amaranthus pal>		Amaranthus pal>		Amaranthus pal>		Amaranthus pal>
Pest Name			Palmer amaranth		Palmer amaranth		Palmer amaranth		Palmer amaranth
Crop Code	GLXMA			GLXMA					
BBCH Scale	BSOY			BSOY					
Crop Scientific Name	Glycine max			Glycine max					
Crop Name	Soybean			Soybean					
Part Rated	PLOT C		PLOT P	PLOT C		PLOT P		PLOT P	PLOT P
Rating Date	6/19/2014		6/19/2014	6/26/2014		6/26/2014		7/3/2014	7/16/2014
Rating Type	PHYGEN		CONTRO	PHYGEN		CONTRO		CONTRO	CONTRO
Rating Unit	%		%	%		%		%	%
Days After First/Last Applic.	5 5		5 5	12 7		12 7		19 14	32 27
Trt-Eval Interval	0 DA-B		0 DA-B	7 DA-B		7 DA-B		14 DA-B	27 DA-B
ARM Action Codes	P		P	P		P		P	P
Number of Decimals	0		0	0		0		0	0
Trt No.	Treatment Name	Rate	Appl						
		Rate Unit	Code	1	2	3	4	5	6
1	Untreated Check			0 b	0 d	0	0 e	0 e	0 d
2	CLARITY PREFERENCE (NIS)	8 fl oz/a A 0.25 % v/v A			19 cd		9 de	23 d	20 c
3	CLARITY PREFERENCE (NIS)	16 fl oz/a A 0.25 % v/v A			29 c		13 de	30 d	24 c
4	COBRA COC	10 fl oz/a A 1 pt/a A		15 a	19 cd		17 cde	15 de	14 cd
5	COBRA COC	12.5 fl oz/a A 1 pt/a A		18 a	30 c		27 cd	13 de	12 cd
6	COBRA COC	16 fl oz/a A 1 pt/a A		18 a	41 bc		33 c	28 d	26 c
7	CLARITY COBRA COC	8 fl oz/a A 10 fl oz/a A 1 pt/a A			60 ab		59 b	66 c	55 b
8	CLARITY COBRA COC	8 fl oz/a A 12.5 fl oz/a A 1 pt/a A			69 a		89 a	83 abc	77 a
9	CLARITY COBRA COC	16 fl oz/a A 10 fl oz/a A 1 pt/a A			56 ab		63 b	73 bc	74 a
10	CLARITY COBRA COC	16 fl oz/a A 12.5 fl oz/a A 1 pt/a A			60 ab		60 b	78 abc	80 a
11	CLARITY PREFERENCE (NIS) COBRA COC	8 fl oz/a A 0.25 % v/v A 10 fl oz/a B 1 pt/a B			19 cd		86 a	95 a	85 a
12	CLARITY PREFERENCE (NIS) COBRA COC	8 fl oz/a A 0.25 % v/v A 12.5 fl oz/a B 1 pt/a B			20 cd		86 a	90 ab	84 a
13	CLARITY PREFERENCE (NIS) COBRA COC	16 fl oz/a A 0.25 % v/v A 10 fl oz/a B 1 pt/a B			20 cd		91 a	91 ab	88 a

Means followed by same letter do not significantly differ (P=.05, Student-Newman-Keuls)
 Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.
 Missing data estimates are included in columns: Yates=2,4,5,6

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Pest Type		W Weed		W Weed	W Weed	W Weed			
Pest Code		AMAPA		AMAPA	AMAPA	AMAPA			
Pest Scientific Name		Amaranthus pal>		Amaranthus pal>	Amaranthus pal>	Amaranthus pal>			
Pest Name		Palmer amaranth		Palmer amaranth	Palmer amaranth	Palmer amaranth			
Crop Code	GLXMA		GLXMA						
BBCH Scale	BSOY		BSOY						
Crop Scientific Name	Glycine max		Glycine max						
Crop Name	Soybean		Soybean						
Part Rated	PLOT C	PLOT P	PLOT C	PLOT P	PLOT P	PLOT P			
Rating Date	6/19/2014	6/19/2014	6/26/2014	6/26/2014	7/3/2014	7/16/2014			
Rating Type	PHYGEN	CONTRO	PHYGEN	CONTRO	CONTRO	CONTRO			
Rating Unit	%	%	%	%	%	%			
Days After First/Last Applic.	5 5	5 5	12 7	12 7	19 14	32 27			
Trt-Eval Interval	0 DA-B	0 DA-B	7 DA-B	7 DA-B	14 DA-B	27 DA-B			
ARM Action Codes	P	P	P	P	P	P			
Number of Decimals	0	0	0	0	0	0			
Trt No.	Treatment Name	Rate	Appl Code	1	2	3	4	5	6
14	CLARITY PREFERENCE (NIS) COBRA COC	16 fl oz/a 0.25 % v/v 12.5 fl oz/a 1 pt/a	A A B B		19 cd		94 a	96 a	95 a
15	CLARITY FLEXSTAR COC	16 fl oz/a 1.5 pt/a 1 pt/a	A A A		73 a		89 a	88 ab	81 a
LSD (P=.05)				5.0	15.8	.	14.5	13.4	14.3
Standard Deviation				3.1	11.1	.	10.1	9.4	10.0
CV				24.94	31.16	.	18.63	16.13	18.46
Bartlett's X2				1.883	20.459	.	13.601	15.464	17.008
P(Bartlett's X2)				0.39	0.084	.	0.403	0.217	0.199
Skewness				-0.5366	0.5672	.	-0.36	-0.5001	-0.4377
Kurtosis				-0.9638	-0.8688	.	-1.4047*	-1.3631*	-1.4441*

Purdue University Weed Science

EVALUATION OF CLARITY + COBRA TANK-MIX VS. SEQUENTIAL COMBINATIONS ON GLYPHOSATE-RESISTANT PALMER AMARANTH

Trial ID: 14S-CCP-CTS-08 Location: 12 MILE Trial Year: 2014
 Protocol ID: 14S-CCP-CTS-08 Investigator: Dr. Bill Johnson
 Project ID: 64.02 Study Director: Joe Ikley
 Sponsor Contact: Valent - Eric Ott

Randomized Complete Block (RCB) AOV For GLXMA BSOY Glycine max Soybean PLOT C 6/19/2014 PHYGEN % 5 5 0 DA-B P 0 (Data Column 1)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	15	1050.000000			
Replicate	3	112.500000	37.500000	3.857	0.0502
Treatment	3	850.000000	283.333333	29.143	0.0001
Error	9	87.500000	9.722222		

Randomized Complete Block (RCB) AOV For W Weed AMAPA Amaranthus palmeri Palmer amaranth PLOT P 6/19/2014 CONTRO % 5 5 0 DA-B P 0 (Data Column 2)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	53	35039.077005			
Replicate	3	2267.373373	755.791124	6.178	0.0017
Treatment	14	28367.776927	2026.269780	16.564	0.0001
Error	36	4403.926705	122.331297		

Randomized Complete Block (RCB) AOV For W Weed AMAPA Amaranthus palmeri Palmer amaranth PLOT P 6/26/2014 CONTRO % 12 7 7 DA-B P 0 (Data Column 4)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	53	72545.100090			
Replicate	3	1590.343217	530.114406	5.181	0.0044
Treatment	14	67271.447992	4805.103428	46.964	0.0001
Error	36	3683.308880	102.314136		

Randomized Complete Block (RCB) AOV For W Weed AMAPA Amaranthus palmeri Palmer amaranth PLOT P 7/3/2014 CONTRO % 19 14 14 DA-B P 0 (Data Column 5)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	53	74182.276545			
Replicate	3	1998.197100	666.065700	7.603	0.0005
Treatment	14	69030.290538	4930.735038	56.284	0.0001
Error	36	3153.788907	87.605247		

Randomized Complete Block (RCB) AOV For W Weed AMAPA Amaranthus palmeri Palmer amaranth PLOT P 7/16/2014 CONTRO % 32 27 27 DA-B P 0 (Data Column 6)

Source	DF	Sum of Squares	Mean Square	F	Prob(F)
Total	53	70021.113436			
Replicate	3	1915.062726	638.354242	6.364	0.0014
Treatment	14	64494.909787	4606.779270	45.926	0.0001
Error	36	3611.140924	100.309470		

Pest Type

W, Weed, G-BYRW7, G-WedStg = Weed or volunteer crop

Pest Code

AMAPA, Amaranthus palmeri, = US

Crop Code

GLXMA, BSOY, Glycine max, = US

Part Rated

PLOT = plot

C = Crop is Part Rated

P = Pest is Part Rated

Rating Type

PHYGEN = phytotoxicity - general / injury

CONTRO = control / burndown or knockdown

Rating Unit

% = percent

ARM Action Codes

P = Rating scale of 0 to 100 (e.g. % control or injury)