University of Georgia

Residual control from preplant burndown applications of Staple.
USA-08-902

Trial ID: C3-08 Study Dir.: Stanley Culpepper
Location: Macon County Investigator: Stanley Culpepper

Reps: 3 Plots: 6 by 30 feet
Spray vol: 14.8 gal/ac Mix size: 1 liters (min .69451)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep 1	2	3
1	45 DBP									101	213	302
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
	Staple LX	3.2		L	1.7	OZ/A	preplant	A	0.8974 ml/mx			
2	45 DBP									102	211	316
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
	Staple LX	3.2		L	2.1	OZ/A	preplant	A	1.109 ml/mx			
3	45 DBP									103	215	306
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
	Direx	4		L	1.5	PT/A	preplant	A	12.67 ml/mx			
4	45 DBP									104	208	304
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
	Staple LX	3.2		L	1.7	OZ/A	preplant	A	0.8974 ml/mx			
	Direx	4		L	1.5	PT/A	preplant	A	12.67 ml/mx			
5	45 DBP									105	206	309
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
	Valor	51		DG	2	OZ/A	preplant	A	1.012 g/mx			
6	45 DBP									106	203	315
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
7	14 DPB									107	216	310
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	B	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	B	4.223 ml/mx			
	Staple LX	3.2		L	1.7	OZ/A	preplant	B	0.8974 ml/mx			
8	14 DPB									108	204	308
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	B	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	B	4.223 ml/mx			
	Staple LX	3.2		L	2.1	OZ/A	preplant	B	1.109 ml/mx			
9	14 DBP									109	207	301
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	B	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	B	4.223 ml/mx			
	Direx	4		L	1.5	PT/A	preplant	B	12.67 ml/mx			
10	14 DBP									110	205	318
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	B	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	B	4.223 ml/mx			
	Staple LX	3.2		L	1.7	OZ/A	preplant	B	0.8974 ml/mx			
	Direx	4		L	1.5	PT/A	preplant	B	12.67 ml/mx			
11	14 DBP									111	201	311
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	B	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	B	4.223 ml/mx			
	Valor	51		DG	2	OZ/A	preplant	B	1.012 g/mx			
12	14 DBP									112	210	312
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	B	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	B	4.223 ml/mx			

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Reps: 3 Plots: 6 by 30 feet
Spray vol: 14.8 gal/ac Mix size: 1 liters (min .69451)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep 1	2	3
13	45 DBP									113	217	307
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
	At Planting											
	Gramoxone Inteon	2		L	2.5	PT/A	PRE	C	21.11 ml/mx			
	Staple LX	3.2		L	1.7	OZ/A	PRE	C	0.8974 ml/mx			
	Crop Oil			L	1	% V/V	PRE	C	9.999 ml/mx			
14	45 DBP									114	212	313
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
	At Planting											
	Gramoxone Inteon	2		L	2.5	PT/A	PRE	C	21.11 ml/mx			
	Direx	4		L	1.5	PT/A	PRE	C	12.67 ml/mx			
	Crop Oil			L	1	% V/V	PRE	C	9.999 ml/mx			
15	45 DBP									115	214	305
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
	At Planting											
	Gramoxone Inteon	2		L	2.5	PT/A	PRE	C	21.11 ml/mx			
	Staple LX	3.2		L	1.7	OZ/A	PRE	C	0.8974 ml/mx			
	Direx	4		L	1.5	PT/A	PRE	C	12.67 ml/mx			
	Crop Oil			L	1	% V/V	PRE	C	9.999 ml/mx			
16	45 DBP									116	209	314
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
	At Planting											
	Gramoxone Inteon	2		L	2.5	PT/A	PRE	C	21.11 ml/mx			
	Cotoran	4		L	2	PT/A	PRE	C	16.89 ml/mx			
	Crop Oil			L	1	% V/V	PRE	C	9.999 ml/mx			
17	45 DBP									117	218	303
	Roundup PowerMax	4.5		L	22	OZ/A	preplant	A	11.61 ml/mx			
	Clarity	4		L	8	OZ/A	preplant	A	4.223 ml/mx			
	At Planting											
	Gramoxone Inteon	2		L	2.5	PT/A	PRE	C	21.11 ml/mx			
	Crop Oil			L	1	% V/V	PRE	C	9.999 ml/mx			
18	Non-treated									118	202	317

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
246.780	ml	Roundup PowerMax	4.5	L	
89.738	ml	Clarity	4	L	
9.502	ml	Staple LX	3.2	L	
95.007	ml	Direx	4	L	
2.530	g	Valor	51	DG	
131.954	ml	Gramoxone Inteon	2	L	
62.493	ml	Crop Oil		L	
21.113	ml	Cotoran	4	L	

* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1 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 liters.

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Residual control from preplant burndown applications of Staple.
USA-08-902

Trial ID: C3-08 Study Dir.: Stanley Culpepper
Location: Macon County Investigator: Stanley Culpepper

Trial Comments

OBJECTIVE: Determine residual control of Staple, diuron, and Valor applied preplant in conservation tillage cotton.

Note: Preplant herbicide treatments were made 45 or 14 days ahead of planting. At time of planting, a new KMC strip till rig was run followed immediately by planting.

Palmer response just before planting:
1. All treatments containing Staple provided complete control. Diuron alone was 17% less effective than Staple if applied 45 days prior to planting but provided similar control (100%) if applied 14 days before planting.
2. Residual control from Clarity applied 45 days prior to planting was only 23 to 35% but was 95% when applied 14 days before planting.

Palmer response in crop:
1. The strip tillage operation destroyed the herbicide layer from all preplant applications in that 10 inch zone and control rapidly fell off, especially with applications applied 45 days preplant. Staple was still far more effective than diuron and combinations of diuron + Staple were not more effective than Staple alone.
2. PRE treatments of Gramoxone killed all emerged Palmer plants at planting but Palmer emergence was very aggressive over the next two weeks.
3. PRE treatments containing Staple were more effective than diuron or Cotoran treatments.
4. The PRE treatment with Staple plus Diuron was more effective than Staple or diuron applied alone.

Cotton Injury:
1. Cotton injury was not significant. This is likely a response from the strip tillage operation destroying the herbicide layer in the drill.

CONCLUSIONS:
1. Staple preplant is effective but the strip tillage operation destroys the herbicide layer.
2. Staple applications need to go either PRE or preplant after the strip tillage operation is performed.

GENERAL COMMENTS:
1. May 23: oversprayed trial with 22 oz. of Roundup PowerMax.
2. Rainfall occurred within 4 days of each preplant application. Additional rainfall in the crop during time of herbicide application is as follows:

Apr 28	1 in
May 9	0.4 in
May 11	2.7 in
May 20	0.2 in
May 24	0.3 in
Jun 11	0.9 in
Jun 17	0.6 in
Jun 22	1 in
Jul 5	0.5 in
Jul 21	1 in

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Trial ID: C3-08 Study Dir.: Stanley Culpepper
Location: Macon County Investigator: Stanley Culpepper

Trt No.	Treatment Name	Rate	Rate Unit	1	2	3	4	5	6
	Weed Code			AMAPA	AMAPA	AMAPA	AMAPA		
	Crop Code			GOSHI	GOSHI	GOSHI	GOSHI	GOSHI	GOSHI
	Rating Data Type			control	control	control	control	injury	injury
	Rating Unit			%	%	%	%	%	%
	Rating Date			Apr-24-08	May-14-08	May-23-08	May-30-08	May-14-08	May-23-08
	Trt-Eval Interval			-1 DA-C	19 DA-C	28 DA-C	35 DA-C	19 DA-C	28 DA-C
1	45 DBP			100 a	37 hi	27 g	27 d	0 c	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	Staple LX	1.7	OZ/A						
2	45 DBP			100 a	62 ef	52 e	53 c	0 c	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	Staple LX	2.1	OZ/A						
3	45 DBP			83 b	23 j	23 g	3 e	0 c	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	Direx	1.5	PT/A						
4	45 DBP			100 a	45 gh	43 ef	30 d	0 c	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	Staple LX	1.7	OZ/A						
	Direx	1.5	PT/A						
5	45 DBP			100 a	52 fg	48 e	32 d	0 c	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	Valor	2	OZ/A						
6	45 DBP			23 d	3 k	0 h	0 e	0 c	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
7	14 DPB			100 a	90 ab	79 bc	65 b	3 b	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	Staple LX	1.7	OZ/A						
8	14 DPB			100 a	89 ab	85 abc	64 b	5 a	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	Staple LX	2.1	OZ/A						
9	14 DBP			100 a	30 ij	0 h	0 e	0 c	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	Direx	1.5	PT/A						
10	14 DBP			100 a	80 bcd	77 c	68 b	5 a	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	Staple LX	1.7	OZ/A						
	Direx	1.5	PT/A						
11	14 DBP			100 a	70 de	65 d	63 bc	5 a	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	Valor	2	OZ/A						

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Weed Code				AMAPA	AMAPA	AMAPA	AMAPA		
Crop Code				GOSHI	GOSHI	GOSHI	GOSHI	GOSHI	GOSHI
Rating Data Type				control	control	control	control	injury	injury
Rating Unit				%	%	%	%	%	%
Rating Date				Apr-24-08	May-14-08	May-23-08	May-30-08	May-14-08	May-23-08
Trt-Eval Interval				-1 DA-C	19 DA-C	28 DA-C	35 DA-C	19 DA-C	28 DA-C
Trt No.	Treatment Name	Rate	Rate Unit	1	2	3	4	5	6
12	14 DBP			95 a	0 k	0 h	0 e	0 c	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
13	45 DBP			27 cd	93 a	89 ab	70 b	0 c	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	At Planting								
	Gramoxone Inteon	2.5	PT/A						
	Staple LX	1.7	OZ/A						
	Crop Oil	1	% V/V						
14	45 DBP			30 cd	75 cd	33 fg	25 d	0 c	0 b
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	At Planting								
	Gramoxone Inteon	2.5	PT/A						
	Direx	1.5	PT/A						
	Crop Oil	1	% V/V						
15	45 DBP			30 cd	96 a	95 a	82 a	0 c	3 a
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	At Planting								
	Gramoxone Inteon	2.5	PT/A						
	Staple LX	1.7	OZ/A						
	Direx	1.5	PT/A						
	Crop Oil	1	% V/V						
16	45 DBP			33 c	82 bc	53 e	23 d	0 c	2 ab
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	At Planting								
	Gramoxone Inteon	2.5	PT/A						
	Cotoran	2	PT/A						
	Crop Oil	1	% V/V						
17	45 DBP			33 c	32 ij	0 h	0 e	0 c	2 ab
	Roundup PowerMax	22	OZ/A						
	Clarity	8	OZ/A						
	At Planting								
	Gramoxone Inteon	2.5	PT/A						
	Crop Oil	1	% V/V						
18	Non-treated			0 e	0 k	0 h	0 e	0 c	0 b
LSD (P=.05)				8.0	10.2	11.4	10.1	1.1	2.6
Standard Deviation				4.8	6.1	6.9	6.0	0.7	1.6
CV				6.91	11.51	16.04	17.9	66.8	427.37
Bartlett's X2				4.085	10.919	6.955	4.838	0.0	1.353
P(Bartlett's X2)				0.537	0.692	0.803	0.902	.	0.508

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

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USA-08-902

Trial ID: C3-08 Study Dir.: Stanley Culpepper
Location: Macon County Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

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

Investigator: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: Univ. of Georgia
Postal Code: 31794

TRIAL LOCATION

City: Macon Co. **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** good
Postal Code: 31068 **Initiation Date:** Mar-27-08
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.	TRZAW	Winter wheat	Triticum aestivum (winter)
2.	AMAPA	Amaranth, Palmer	Amaranthus palmeri

Crop 1: GOSHI COTTON, SHORT STAPLE **Variety:** WFR 485
Planting Date: Apr-24-08 **Planting Method:** hill dropped
Rate: 2 8 inch **Depth:** _____ __ **Perennial Age:** _____ _____
Row Spacing: 36 in **Spacing Within Row:** 8.5 in **Seed Bed:** bedded
Soil Temperature: 85 F **Soil Moisture:** moist **Emergence Date:** _____

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 30 FT **Reps:** 3
Site Type: On farm
Tillage Type: Conservation tillage **Study Design:** RANDOMIZED COMPLETE BLOCK

Trial Initiation Comments:

	Previous Crops	Previous Pesticides	Year
1.			

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MAINTENANCE

Field Prep./Maintenance:

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

SOIL DESCRIPTION

% Sand: 82 **% OM:** 2.0 **Texture:** loamy sand
% Silt: 14 **pH:** 6.3 **Soil Name:** _____
% Clay: 4 **CEC:** _____ **Fert. Level:** _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: see comments
Closest Weather Station: _____ **Distance:** _____ **Unit:** __

APPLICATION DESCRIPTION

	A	B	C
Application Date:	Mar-27-08	Apr-11-08	Apr-25-08
Time of Day:	11:00 am	7:00 am	2:00 pm
Application Method:	broadcast	broadcast	broadcast
Application Timing:	45DBP	POST	PRE
Applic. Placement:	overtop	overtop	on soil
Air Temp., Unit:	78 F	68 F	85 F
% Relative Humidity:	43	45	49
Wind Velocity, Unit:	4 mph	0 mph	5 mph
Dew Presence (Y/N):	N	Y	N
Water Hardness:			
Soil Temp., Unit:	78 F	65 F	82 F
Soil Moisture:	fair	moist	moist
% Cloud Cover:	0	15	30

CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GOSHI A	GOSHI B	GOSHI C
Stage Scale:	preplant	preplant	PRE
Height, Unit:	0 in	0 inch	0 inch

WEED STAGE AT EACH APPLICATION

	A	B	C
Weed 1 Code, Stage:	TRZAW A	TRZAW B	TRZAW C
Stage Scale:	15 in	30 in	30 in
Density, Unit:	18 ft	18 ft	18 ft
Weed 2 Code, Stage:	AMAPA A	AMAPA B	AMAPA C
Stage Scale:	not up	not up	0.5 in
Density, Unit:	0 ydsq	0 ydsq	15 ydsq

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APPLICATION EQUIPMENT

	A	B	C
Appl. Equipment:	backpack	backpack	backpack
Operating Pressure:	24	24	24
Nozzle Type:	flat fan	flat fan	flat fan
Nozzle Size:	11002	11002	11002
Nozzle Spacing, Unit:	18 in	18 in	18 in
Nozzles/Row:	2	2	2
Band Width, Unit:			
Boom Length, Unit:	4.5 ft	4.5 ft	4.5 in
Boom Height, Unit:	15 in	15 in	15 in
Ground Speed, Unit:	3 mph	3 mph	3 mph
Incorporation Equip.:			
Hours to Incorp.:			
Incorp. Depth, Unit:			
Carrier:	water	water	water
Spray Volume, Unit:	15 GPA	15 GPA	14.5 GPA
Spray pH:			
Propellant:	CO2	CO2	CO2
Tank Mix (Y/N):	Y	Y	Y

Trt No	Treatment Application Comment