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Cotton response to Aim mixtures applied at defoliation.

Trial ID: def1-03   Study Dir.: Stanley Culpepper
Location: Ponder farm   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 Science
Affiliation: University of Georgia
Postal Code: 31794

TRIAL LOCATION

City: TyTy   **Trial Status:**   completed
State/Prov.: GA   **Trial Reliability:**   fair
Postal Code: 31794   **Initiation Date:**   Sep-09-03
Country: USA

Conducted Under GLP (Y/N): N   **Conducted Under GEP (Y/N):** N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	.		

Crop 1: GOSHI   cotton   **Variety:** BXN 47
Planting Date: May-01-03   **Planting Method:** strip tillage
Rate: 3   seed/ft   **Depth:** 0.5   in
Row Spacing: 36   inch   **Spacing Within Row:** 4   inch   **Seed Bed:** flat
Soil Temperature: 0.   . **Soil Moisture:** .   **Emergence Date:** May-06-03

SITE AND DESIGN

Plot Width, Unit: 12   FT   **Plot Length, Unit:** 25   FT   **Reps:** 4
Site Type: research station
Tillage Type: reduced tillage   **Study Design:** RANDOMIZED COMPLETE BLOCK

SOIL DESCRIPTION

% Sand: 94   **% OM:**   1.3   **Texture:**   sand
% Silt: 2   **pH:**   5.7   **Soil Name:**   Tifton sandy loam
% Clay: 4

Overall Moisture Conditions: .

APPLICATION DESCRIPTION

	A	B
Application Date:	Sep-09-03	Sep-18-03
Time of Day:	8 am	12 pm
Application Method:	broadcast	broadcast
Application Timing:	defoliati	def + 7d
Applic. Placement:	overtop	overtop
Air Temp., Unit:	80 F	82 F
% Relative Humidity:	67	52
Wind Velocity, Unit:	2 mph	2 mph
Dew Presence (Y/N):	y	n
Soil Temp., Unit:	82 F	86 F
Soil Moisture:	moist	moist
% Cloud Cover:	0	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GOSHI defoliati	GOSHI def + 7d
Stage Scale:	see %open	see %open
Height, Unit:	60 inch	60 inch

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WEED STAGE AT EACH APPLICATION

	A	B
	.	
Stage Scale:	.	
Density, Unit:	. .	

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	spider	backpack
Operating Pressure:	40 psi	22 psi
Nozzle Type:	flat fan	flat fan
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	18 inch	18 inch
Nozzles/Row:	2	2
Boom Length, Unit:	6 feet	4.5 feet
Boom Height, Unit:	18 inch	15 inch
Ground Speed, Unit:	3.5 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA
Propellant:	CO_2	CO_2
Tank Mix (Y/N):	Y	Y

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Cotton response to Aim mixtures applied at defoliation.

Trial ID: def1-03   Study Dir.: Stanley Culpepper
Location: Ponder farm   Investigator: Stanley Culpepper

Weed Code Crop Code Rating Data Type Rating Unit Rating Date Trt-Eval Interval ARM Action Codes # Subsamples, Dec.			GOSHI defoliation percent Sep-12-03 3 DA-A	GOSHI defoliation percent Sep-19-03 10 DA-A	GOSHI defoliation percent Sep-26-03 17 DA-A	GOSHI regrowth percent Sep-19-03 10 DA-A	GOSHI regrowth percent Sep-26-03 17 DA-A	GOSHI open boll percent Sep-11-03 2 DA-A T3	GOSHI open boll percent Sep-17-03 8 DA-A T5	GOSHI open boll percent Sep-23-03 14 DA-A T6
Trt No.	Treatment Name	Rate Rate Unit	1	2	3	4	5	6	7	8
1	Aim COC	0.016 lb ai/a 1 % v/v	32.5	56.3	37.5	1.3	32.5	77.7	86.3	92.6
2	Aim COC	0.025 lb ai/a 1 % v/v	42.5	57.5	55.0	5.0	42.5	71.0	88.4	93.9
3	Aim COC Aim COC	0.016 lb ai/a 1 % v/v 0.016 lb ai/a 1 % v/v	37.5	60.0	85.0	1.3	13.0	70.5	81.1	89.9
4	Aim COC Prep	0.016 lb ai/a 1 % v/v 0.75 lb ai/a	37.5	60.0	54.5	6.3	45.0	77.7	92.8	97.1
5	Aim COC Prep Aim COC	0.016 lb ai/a 1 % v/v 0.75 lb ai/a 0.016 lb ai/a 1 % v/v	35.0	56.3	84.3	2.5	15.0	69.0	86.2	92.1
6	Aim COC Dropp SC	0.016 lb ai/a 1 % v/v 0.05 lb ai/a	33.8	60.0	52.5	2.5	30.0	71.5	87.8	94.8
7	Aim COC Dropp SC Aim COC	0.016 lb ai/a 1 % v/v 0.05 lb ai/a 0.016 lb ai/a 1 % v/v	35.0	60.0	89.5	3.8	10.0	67.3	80.8	91.0
8	Aim COC CottonQuick	0.016 lb ai/a 1 % v/v 2 qt/a	45.0	70.0	63.8	4.5	47.5	77.4	94.3	99.1
9	Aim COC CottonQuick Aim COC	0.016 lb ai/a 1 % v/v 2 qt/a 0.016 lb ai/a 1 % v/v	50.0	73.3	90.0	5.0	16.3	74.6	95.1	97.0
10	Def 6 Prep 6 COC	0.1 lb ai/a 1 lb ai/a 1 % v/v	30.5	65.0	61.3	18.3	47.5	71.2	90.0	94.5
11	Dropp SC Prep 6	0.1 lb ai/a 1 lb ai/a	13.8	77.3	79.5	20.0	28.8	79.1	96.5	99.2
12	Non-treated		0.0	0.0	0.0	0.0	0.0	76.3	84.7	90.3
13	Finish Ginstar	1.33 pt/a 4 oz/a	15.0	86.3	83.8	3.3	25.0	76.0	96.0	99.7
14	Finish Dropp Sc Def	1.33 pt/a 0.05 lb ai/a 0.1 lb ai/a	27.5	87.0	83.5	5.0	36.3	78.1	95.8	98.9
LSD (P=.05)			15.04	11.02	15.55	12.55	14.57	10.12	7.76	5.85
Standard Deviation			10.52	7.71	10.88	8.78	10.19	7.08	5.43	4.10
CV			33.82	12.43	16.56	156.65	36.67	9.56	6.05	4.31
Bartlett's X2			8.989	6.592	18.198	51.741	12.862	15.811	27.924	33.151
P(Bartlett's X2)			0.704	0.831	0.11	0.001*	0.379	0.26	0.009*	0.002*

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

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Weed Code								
Crop Code	GOSHI	GOSHI	GOSHI	GOSHI	GOSHI	GOSHI	GOSHI	GOSHI
Rating Data Type	defoliation	defoliation	defoliation	regrowth	regrowth	open boll	open boll	open boll
Rating Unit	percent	percent	percent	percent	percent	percent	percent	percent
Rating Date	Sep-12-03	Sep-19-03	Sep-26-03	Sep-19-03	Sep-26-03	Sep-11-03	Sep-17-03	Sep-23-03
Trt-Eval Interval	3 DA-A	10 DA-A	17 DA-A	10 DA-A	17 DA-A	2 DA-A	8 DA-A	14 DA-A
ARM Action Codes						T3	T5	T6
# Subsamples, Dec.								

Column 6: T3 = ([12]/[10])*100
Column 7: T5 = (100-([13]/[10]*100))
Column 8: T6 = (100-([14]/[10]*100))

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				GOSHI open boll percent Sep-30-03 21 DA-A T7	GOSHI total bolls number Sep-11-03 2 DA-A T1	GOSHI green boll number Sep-11-03 2 DA-A	GOSHI open boll number Sep-11-03 2 DA-A	GOSHI green boll number Sep-17-03 8 DA-A	GOSHI green boll number Sep-23-03 14 DA-A	GOSHI green boll number Sep-30-03 21 DA-A	Seed GOSHI yield lb/plot Oct-01-03 22 DA-A
Weed Code											
Crop Code											
Rating Data Type											
Rating Unit											
Rating Date											
Trt-Eval Interval											
ARM Action Codes											
# Subsamples, Dec.											
Trt No.	Treatment Name	Rate	Rate Unit	9	10	11	12	13	14	15	16
1	Aim	0.016	lb ai/a	97.1	60.0	13.8	46.3	8.8	4.3	1.8	9.5
	COC	1	% v/v								
2	Aim	0.025	lb ai/a	98.7	63.5	17.8	45.8	7.0	3.5	0.8	9.5
	COC	1	% v/v								
3	Aim	0.016	lb ai/a	95.4	57.0	16.5	40.5	10.5	5.5	2.5	9.8
	COC	1	% v/v								
	Aim	0.016	lb ai/a								
	COC	1	% v/v								
4	Aim	0.016	lb ai/a	100.0	67.3	15.0	52.3	5.0	1.8	0.0	10.0
	COC	1	% v/v								
	Prep	0.75	lb ai/a								
5	Aim	0.016	lb ai/a	95.7	70.0	21.8	48.3	9.8	5.5	3.0	8.8
	COC	1	% v/v								
	Prep	0.75	lb ai/a								
	Aim	0.016	lb ai/a								
	COC	1	% v/v								
6	Aim	0.016	lb ai/a	98.3	71.0	20.3	50.8	8.8	3.8	1.3	9.4
	COC	1	% v/v								
	Dropp SC	0.05	lb ai/a								
7	Aim	0.016	lb ai/a	95.2	71.3	23.5	47.8	13.8	6.3	3.5	8.9
	COC	1	% v/v								
	Dropp SC	0.05	lb ai/a								
	Aim	0.016	lb ai/a								
	COC	1	% v/v								
8	Aim	0.016	lb ai/a	99.1	60.5	13.5	47.0	3.3	0.5	0.5	10.0
	COC	1	% v/v								
	CottonQuick	2	qt/a								
9	Aim	0.016	lb ai/a	97.0	82.3	20.8	61.5	4.0	2.5	2.3	9.5
	COC	1	% v/v								
	CottonQuick	2	qt/a								
	Aim	0.016	lb ai/a								
	COC	1	% v/v								
10	Def 6	0.1	lb ai/a	98.1	77.8	22.5	55.3	7.8	4.3	1.5	9.8
	Prep 6	1	lb ai/a								
	COC	1	% v/v								
11	Dropp SC	0.1	lb ai/a	100.0	64.0	13.3	50.8	2.3	0.5	0.0	9.7
	Prep 6	1	lb ai/a								
12	Non-treated			95.6	59.5	14.5	45.0	8.8	5.5	2.5	9.8
13	Finish	1.33	pt/a	99.3	70.3	17.0	53.3	3.0	0.3	0.5	9.5
	Ginstar	4	oz/a								
14	Finish	1.33	pt/a	100.0	77.3	17.5	59.8	3.3	0.8	0.0	9.4
	Dropp Sc	0.05	lb ai/a								
	Def	0.1	lb ai/a								
LSD (P=.05)				3.61	16.33	8.29	13.52	5.03	3.69	2.23	1.20
Standard Deviation				2.53	11.42	5.80	9.46	3.52	2.58	1.56	0.84
CV				2.59	16.81	32.8	18.81	51.48	80.72	109.0	8.78
Bartlett's X2				13.465	10.648	14.259	6.191	24.158	27.279	11.251	20.841
P(Bartlett's X2)				0.199	0.64	0.356	0.939	0.03*	0.011*	0.338	0.076

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)
Column 9: T7 = (100-([15]/[10]*100))
Column 10: T1 = [C11]+[C12]

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Weed Code			Seed
Crop Code			GOSHI
Rating Data Type			yield
Rating Unit			lb/A
Rating Date			Oct-01-03
Trt-Eval Interval			22 DA-A
ARM Action Codes			TY2
# Subsamples, Dec.			1

Trt No.	Treatment Name	Rate	Rate Unit	17
1	Aim	0.016	lb ai/a	2747.2
	COC	1	% v/v	
2	Aim	0.025	lb ai/a	2753.0
	COC	1	% v/v	
3	Aim	0.016	lb ai/a	2845.9
	COC	1	% v/v	
	Aim	0.016	lb ai/a	
	COC	1	% v/v	
4	Aim	0.016	lb ai/a	2902.5
	COC	1	% v/v	
	Prep	0.75	lb ai/a	
5	Aim	0.016	lb ai/a	2551.2
	COC	1	% v/v	
	Prep	0.75	lb ai/a	
	Aim	0.016	lb ai/a	
	COC	1	% v/v	
6	Aim	0.016	lb ai/a	2724.0
	COC	1	% v/v	
	Dropp SC	0.05	lb ai/a	
7	Aim	0.016	lb ai/a	2594.7
	COC	1	% v/v	
	Dropp SC	0.05	lb ai/a	
	Aim	0.016	lb ai/a	
	COC	1	% v/v	
8	Aim	0.016	lb ai/a	2896.7
	COC	1	% v/v	
	CottonQuick	2	qt/a	
9	Aim	0.016	lb ai/a	2766.1
	COC	1	% v/v	
	CottonQuick	2	qt/a	
	Aim	0.016	lb ai/a	
	COC	1	% v/v	
10	Def 6	0.1	lb ai/a	2845.9
	Prep 6	1	lb ai/a	
	COC	1	% v/v	
11	Dropp SC	0.1	lb ai/a	2824.1
	Prep 6	1	lb ai/a	
12	Non-treated			2843.0
13	Finish	1.33	pt/a	2761.7
	Ginstar	4	oz/a	
14	Finish	1.33	pt/a	2722.5
	Dropp Sc	0.05	lb ai/a	
	Def	0.1	lb ai/a	

LSD (P=.05)	347.53
Standard Deviation	243.19
CV	8.78
Bartlett's X2	20.842
P(Bartlett's X2)	0.076

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

Column 17: TY2 = 290.4*[C16]

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Cotton response to Aim mixtures applied at defoliation.

Trial ID: def1-03   Study Dir.: Stanley Culpepper
Location: Ponder farm   Investigator: Stanley Culpepper

Trial Comments

OBJECTIVE: Evaluate Aim defoliation systems.

RESULTS:

Leaf defoliation:
1) Aim was quicker than Finish + Ginstar or Dropp plus Prep at 3 DAT.
2) Aim plus Cottonquick was generally the most effective treatment at 3 DAT.
3) By 10 d after defoliation and 1 day after defoliation + 7, Dropp plus Prep, Finish plus Ginstar and Finish plus Dropp + Def were more effective than most of the Aim treatments.
4) By 17 d after defoliation and 8 d after defoliation + 7, sequential Aim treatments, Dropp + Prep, Finish + Ginstar, and Finish + Ginstar plus Def provided similar control.

Regrowth:
1) At 10 day after defoliation and 1 d after defoliation + 7, regrowth in Aim treatments, Finish + Ginstar, or Finish + Dropp + Def was less than 5%.
2) By 17 d after defoliation and 8 d after defoliation + 7, regrowth was less than 16% with sequential Aim applications.

Open boll counts:
1) At time of defoliation application, percent open bolls ranged from 67 to 77% open and was similar among all treatments.
2) At 8 d after after defoliation, Dropp + Prep, Finish treatments, Cottonquick treatments, and Aim + Prep contained more open bolls than the non-treated control. No differences were noted with other treatments when compared to the non-treated control.
3) At 14 d after defoliation, the non-treated control contained 90% open bolls; however, trends in differences noted at 8 d after application were still apparent.
4) By 21 d after defoliation, open boll percentages were at least 96% by all treatments including the non-treated control

Cotton Yield:
1) Yield was extremely uniform with no differences among all treatments.
2) CV for yield comparisons was less than 10.

CONCLUSIONS:
1) Leaf defoliation in this trial by Aim was disappointing. Aim effectiveness was less than noted in previous work and also less than noted in Def2-03 which was conducted all of 2 hours after thistrial in the same field with the same application equipment. The only difference between conditions of Def1-03 and Def2-03 was that it was foggy and overcast with a little dew when treatments from def1-03 were applied and there was no fog with sunny conditions when def2-03 treatments were applied.

GENERAL COMMENTS:
1) On Sept 11, open and closed bolls were counted. Counts were taken from 1 meter of row on both of the middle two rows of the four row plot. After Sept 11, only closed bolls were counted.
2) Sept 26: Less than 7% of leaves stuck by any treatment.