

# University of Georgia

**Cotton response to layby herbicides applied with water and nitrogen as the carrier.**

Trial ID: C52-03  
Location: Moultrie

Study Director: Culpepper/Grey  
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:** Moultrie **Trial Status:** completed  
**State/Prov.:** GA **Trial Reliability:** good  
**Postal Code:** . **Initiation Date:** Jul-03-03  
**Country:** USA  
**Directions:**

**Objectives:**

**Conclusions:**

## Crop Description

**Crop 1:** GOSHI *Gossypium hirsutum* Cotton, American upland  
**Variety:** FM 989 B/RR  
**BBCH Scale:** BCOT **Planting Date:** May-09-03  
**Planting Method:** conventional **Rate, Unit:** 3 seed/ft  
**Depth, Unit:** 0.5 in  
**Row Spacing, Unit:** 36 inch **Spacing Within Row, Unit:** 4 inch  
**Seed Bed:** slight bed **Soil Temperature, Unit:** 78 F  
**Soil Moisture:** moist **Emergence Date:** May-14-03

## Site and Design

**Plot Width, Unit:** 6 FT **Site Type:** Sunbelt Expo  
**Plot Length, Unit:** 25 FT **Tillage Type:** Conventional  
**Replications:** 4 **Study Design:** Factorial

**Trial Initiation Comments:**

**Field Prep./Maintenance:**

## Soil Description

**% Sand:** 88 **% OM:** 1.2 **Texture:** .  
**% Silt:** 12 **pH:** 6 **Soil Name:** .  
**% Clay:** 0 **CEC:** 0.

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## Application Description

A	
Application Date:	Jul-03-03
Time of Day:	10 am
Application Method:	broadcast
Application Timing:	layby
Application Placement:	directed
Applied By:	Culpepper
Air Temperature, Unit:	84 F
% Relative Humidity:	60
Wind Velocity, Unit:	2 mph
Dew Presence (Y/N):	n
Soil Temperature, Unit:	80 F
Soil Moisture:	moist
% Cloud Cover:	75

## Crop Stage At Each Application

A	
Crop 1 Code, BBCH Scale:	GOSHI BCOT
Stage Scale Used:	DESC
Stage Majority, Percent:	11 leaf 100
Stage Minimum, Percent:	11 leaf 100
Stage Maximum, Percent:	11 leaf 100
Diameter, Unit:	0. .
Height, Unit:	20 in
Height Minimum, Maximum:	18 20

## Application Equipment

A	
Appl. Equipment:	backpack
Operating Pressure:	22
Pressure Unit:	PSI
Nozzle Type:	flat fan
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 inch
Nozzles/Row:	2
Boom Length, Unit:	4.5 feet
Boom Height, Unit:	15 inch
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume:	14.8
Volume Unit:	GPA
Propellant:	CO2
Tank Mix (Y/N):	Y

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Crop Code	GOSHI	GOSHI	GOSHI
BBCH Scale	BCOT	BCOT	BCOT
Rating Date	Jul-05-03	Jul-12-03	Jul-26-03
Rating Data Type	injury	injury	injury
Rating Unit	percent	percent	percent
Days After Last Applic.	2	9	23
Trt-Eval Interval	1 DA-A	9 DA-A	23 DA-A
Trt No.	Treatment Name	Rate	Unit
1	Water	0.0	
	WeatherMax	21.3	oz/a
2	Water	0.5	
	WeatherMax	21.3	oz/a
	Valor	1.5	oz/a
3	Water	1.0	
	WeatherMax	21.3	oz/a
	Aim	1.25	oz/a
4	Water	0.0	
	Direx	2	pt/a
	MSMA	2.5	pt/a
5	Water	0.0	
	Direx	2	pt/a
	MSMA	2.5	pt/a
	Cobra	8	oz/a
6	Water	8.0	
	Direx	2	pt/a
	MSMA	2.5	pt/a
	Aim	1.25	oz/a
7	34-0-0	0.0	
	WeatherMax	21.3	oz/a
8	34-0-0	1.0	
	WeatherMax	21.3	oz/a
	Valor	1.5	oz/a
9	34-0-0	9.3	
	WeatherMax	21.3	oz/a
	Aim	1.25	oz/a
10	34-0-0	5.3	
	Direx	2	pt/a
	MSMA	2.5	pt/a
11	34-0-0	2.0	
	Direx	2	pt/a
	MSMA	2.5	pt/a
	Cobra	8	oz/a
12	34-0-0	10.8	
	Direx	2	pt/a
	MSMA	2.5	pt/a
	Aim	1.25	oz/a
LSD (P=.05)	7.84	7.16	0.00
Standard Deviation	5.43	4.96	0.00
CV	172.51	108.72	0.0
Bartlett's X2	30.25	23.483	0.0
P(Bartlett's X2)	0.001*	0.001*	.

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

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## Trial Comments

**OBJECTIVE:** Determine the response of several layby herbicides applied in either water or 34-0-0.

**RESULTS** (Crop injury is a result of stem necrosis, no plants were lost).

- 1) The trial was a factorial and main effects were significant at the 2 and 9 DAT evaluations.
- 2) Injury from layby options applied in 34-0-0 were at least twice as injurious than when applied in water.
- 3) At 9 DAT, injury from layby options with Aim were more injurious than other options (pooled over carrier solutions).
- 4) Viewing non-pooled data at 9 DAT, WeatherMax plus Aim and Aim plus Direx plus MSMA caused 11 and 20% injury, respectively. All other treatments injured cotton less than 9%.

**CONCLUSIONS:**

- 1) This trial was applied to large, barky cotton. Needs to be repeated a little earlier to "push" the issue.