

University of Georgia

Weed management systems in Liberty Link cotton.

Trial ID: C48-03
Location: Attapulgus

Study Dir.: Stanley Culpepper
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: Attapulgus **Trial Status:** completed
State/Prov.: Ga **Trial Reliability:** excellent
Postal Code: . **Initiation Date:** May-28-03
Country: .

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	DTTAE	crowfootgrass	
2.	IAQTA	smallflower morningglory	
3.	CASOB	sicklepod	
4.	AMAPA	Palmer amaranth	
5.	PORPI	pink purslane	

Crop 1: GOSHI cotton **Variety:** FM 966 LL
Planting Date: May-28-03 **Planting Method:** conventional
Rate: 3 seed/ft **Depth:** 0.5 in
Row Spacing: 36 inch **Spacing Within Row:** 4 inch **Seed Bed:** bedded
Soil Temperature: 81 F **Soil Moisture:** moist **Emergence Date:** Jun-02-03

SITE AND DESIGN

Plot Width, Unit: 12 FT **Plot Length, Unit:** 22 FT **Reps:** 4
Site Type: research station
Tillage Type: conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

SOIL DESCRIPTION

% Sand: 84 **% OM:** 1.3 **Texture:** loamy sand
% Silt: 8 **pH:** 5.9
% Clay: 8

Overall Moisture Conditions: wet

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	May-28-03	Jun-20-03	Jul-11-03	Jul-27-03
Time of Day:	11 am	9 am	9 am	10 am
Application Method:	broadcast	broadcast	broadcast	broadcast
Application Timing:	PRE	POT 1	POT 2	PDIR
Applic. Placement:	on soil	overtop	overtop	directed
Air Temp., Unit:	83 F	80 F	83 F	81 F
% Relative Humidity:	44	64	63	69
Wind Velocity, Unit:	3 mph	2 mph	2 mph	2 mph
Dew Presence (Y/N):	n	n	n	y
Soil Temp., Unit:	80 F	84 F	83 F	79 F
Soil Moisture:	fair	moist	moist	moist
% Cloud Cover:	100	100	25	50

University of Georgia

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	GOSHI PRE	GOSHI POT1	GOSHI POT2	GOSHI PDIR
Stage Scale:	.	V3	V8-V9	V12
Height, Unit:	0. .	3 inch	11 inch	22 inch

WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	DTTAE PRE	DTTAE POT1	DTTAE POT2	DTTAE PDIR
Stage Scale:	.	2-3",0til	<3"	<2"
Density, Unit:	. . .	4 ydsq	. . .	. . .
Weed 2 Code, Stage:	IAQTA PRE	IAQTA POT1	IAQTA POT2	IAQTA PDIR
Stage Scale:	.	<2 inch	<3"	<2"
Density, Unit:	. . .	2 ydsq	. . .	. . .
Weed 3 Code, Stage:	CASOB PRE	CASOB POT1	CASOB POT2	CASOB PDIR
Stage Scale:	.	2-4"	<3"	<2"
Density, Unit:	. . .	3 ydsq	. . .	. . .
Weed 4 Code, Stage:	AMAPA PRE	AMAPA POT1	AMAPA POT2	AMAPA PDIR
Stage Scale:	.	1"	<3"	<2"
Density, Unit:	. . .	1 ydsq	. . .	. . .
Weed 5 Code, Stage:	PORPI PRE	PORPI POT1	PORPI POT2	PORPI PDIR
Stage Scale:	.	2"diamete	<3"	<2"
Density, Unit:	. . .	2 ydsq	. . .	. . .

APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	backpack	backpack	backpack	backpack
Operating Pressure:	22	22	22	18
Nozzle Type:	flat fan	flat fan	flat fan	flat fan
Nozzle Size:	11002	11002	11002	11002
Nozzle Spacing, Unit:	18 inch	18 inch	18 inch	12 inch
Nozzles/Row:	2	2	2	3
Boom Length, Unit:	4.5 feet	4.5 feet	4.5 feet	2 feet
Boom Height, Unit:	15 inch	15 inch	15 inch	12 inch
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph
Carrier:	water	water	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA	14.8 GPA	14.8 GPA
Propellant:	CO2	CO2	CO2	CO2
Tank Mix (Y/N):	Y	Y	Y	Y

University of Georgia

Weed management systems in Liberty Link cotton.

Trial ID: C48-03

Study Dir.: Stanley Culpepper

Location: Attapulcus

Investigator: Stanley Culpepper

Weed Code			GOSHI	GOSHI	GOSHI	DTTAE	DTTAE	DTTAE	DTTAE	CASOB
Crop Code			injury	injury	injury	control	control	control	control	control
Rating Data Type			percent	percent	percent	percent	percent	percent	percent	percent
Rating Unit										
Rating Date			Jun-30-03	Jul-27-03	Aug-11-03	Jun-30-03	Jul-27-03	Aug-11-03	Oct-01-03	Jun-30-03
Trt-Eval Interval			10 DA-A	37 DA-A	52 DA-A	10 DA-A	37 DA-A	52 DA-A	103 DA-A	10 DA-A
ARM Action Codes										
# Subsamples, Dec.										
Trt No.	Treatment Name	Rate	1	2	3	4	5	6	7	8
		Rate Unit								
1	Non-treated		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Liberty	32 oz/a	0.0	0.0	0.0	96.8	97.3	97.5	97.3	99.0
	Liberty	32 oz/a								
3	Liberty	32 oz/a	0.0	0.0	0.0	96.8	97.3	99.0	99.0	99.0
	Liberty	32 oz/a								
	Liberty	32 oz/a								
4	Liberty	32 oz/a	0.0	0.0	0.0	95.3	97.3	95.5	99.0	99.0
	Liberty	32 oz/a								
	Dual Magnum	1.2 pt/a								
5	Liberty	32 oz/a	0.0	0.0	0.0	96.5	94.8	96.3	99.0	99.0
	Liberty	32 oz/a								
	Staple	0.8 oz/a								
6	Prowl	2 pt/a	0.0	0.0	0.0	99.0	99.0	99.0	99.0	99.0
	Liberty	32 oz/a								
	Liberty	32 oz/a								
7	Prowl	2 pt/a	0.0	0.0	0.0	99.0	99.0	98.0	99.0	99.0
	Staple	0.8 oz/a								
	Liberty	32 oz/a								
	Liberty	32 oz/a								
8	Prowl	2 pt/a	0.0	0.0	0.0	99.0	99.0	99.0	99.0	99.0
	Cotoran	1.25 qt/a								
	Liberty	32 oz/a								
	Liberty	32 oz/a								
9	Cotoran	1.25 qt/a	0.0	0.0	0.0	99.0	99.0	99.0	99.0	99.0
	Liberty	32 oz/a								
	Liberty	32 oz/a								
10	Staple	0.8 oz/a	0.0	0.0	0.0	99.0	99.0	96.8	99.0	98.5
	Liberty	32 oz/a								
	Liberty	32 oz/a								
11	Prowl	2 pt/a	0.0	0.0	0.0	99.0	95.8	98.3	99.0	98.5
	Liberty	32 oz/a								
	Liberty	32 oz/a								
	Dual Magnum	1.2 pt/a								
12	Prowl	2 pt/a	0.0	0.0	0.0	99.0	98.0	98.3	99.0	99.0
	Liberty	32 oz/a								
	Liberty	32 oz/a								
	Staple	0.8 oz/a								
	LSD (P=.05)		0.00	0.00	0.00	3.09	3.51	3.81	1.46	0.60
	Standard Deviation		0.00	0.00	0.00	2.14	2.43	2.64	1.01	0.41
	CV		0.0	0.0	0.0	2.38	2.71	2.94	1.12	0.46
	Bartlett's X2		0.0	0.0	0.0	0.088	1.543	12.755	0.0	0.0
	P(Bartlett's X2)		.	.	.	0.993	0.908	0.047*	.	1.00

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

University of Georgia

Weed Code	CASOB	CASOB	CASOB	AMAPA	AMAPA	AMAPA	AMAPA	IAQTA			
Crop Code											
Rating Data Type	control	control	control	control	control	control	control	control			
Rating Unit	percent	percent	percent	percent	percent	percent	percent	percent			
Rating Date	Jul-27-03	Aug-11-03	Oct-01-03	Jun-30-03	Jul-27-03	Aug-11-03	Oct-01-03	Jun-30-03			
Trt-Eval Interval	37 DA-A	52 DA-A	103 DA-A	10 DA-A	37 DA-A	37 DA-A	103 DA-A	10 DA-A			
ARM Action Codes											
# Subsamples, Dec.											
Trt No.	Treatment Name	Rate	Unit	9	10	11	12	13	14	15	16
1	Non-treated			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Liberty	32	oz/a	99.0	97.3	99.0	99.0	97.3	97.3	99.0	99.0
	Liberty	32	oz/a								
3	Liberty	32	oz/a	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0
	Liberty	32	oz/a								
	Liberty	32	oz/a								
4	Liberty	32	oz/a	98.0	99.0	99.0	97.3	98.0	98.0	99.0	99.0
	Liberty	32	oz/a								
	Dual Magnum	1.2	pt/a								
5	Liberty	32	oz/a	98.0	98.0	99.0	99.0	98.0	98.0	99.0	99.0
	Liberty	32	oz/a								
	Staple	0.8	oz/a								
6	Prowl	2	pt/a	98.5	98.3	99.0	99.0	99.0	99.0	99.0	99.0
	Liberty	32	oz/a								
	Liberty	32	oz/a								
7	Prowl	2	pt/a	99.0	97.5	99.0	99.0	99.0	99.0	99.0	99.0
	Staple	0.8	oz/a								
	Liberty	32	oz/a								
	Liberty	32	oz/a								
8	Prowl	2	pt/a	99.0	98.0	99.0	99.0	99.0	99.0	99.0	99.0
	Cotoran	1.25	qt/a								
	Liberty	32	oz/a								
	Liberty	32	oz/a								
9	Cotoran	1.25	qt/a	99.0	97.8	99.0	99.0	99.0	99.0	99.0	99.0
	Liberty	32	oz/a								
	Liberty	32	oz/a								
10	Staple	0.8	oz/a	99.0	94.8	99.0	99.0	99.0	99.0	99.0	99.0
	Liberty	32	oz/a								
	Liberty	32	oz/a								
11	Prowl	2	pt/a	99.0	98.0	99.0	99.0	99.0	99.0	99.0	99.0
	Liberty	32	oz/a								
	Liberty	32	oz/a								
	Dual Magnum	1.2	pt/a								
12	Prowl	2	pt/a	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0
	Liberty	32	oz/a								
	Liberty	32	oz/a								
	Staple	0.8	oz/a								
LSD (P=.05)		1.25		2.13	0.00	1.46	1.93	1.93	0.00	0.00	0.00
Standard Deviation		0.87		1.47	0.00	1.01	1.33	1.33	0.00	0.00	0.00
CV		0.96		1.64	0.0	1.12	1.47	1.47	0.0	0.0	0.0
Bartlett's X2		1.532		1.238	0.0	0.0	1.319	1.319	0.0	0.0	0.0
P(Bartlett's X2)		0.465		0.99	.	.	0.517	0.517	.	.	.

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

University of Georgia

Weed Code	IAQTA	IAQTA	IAQTA	PORPI	PORPI	PORPI	GOSHI	GOSHI			
Crop Code											
Rating Data Type	control	control	control	control	control	control	seed/yl	seed/yl			
Rating Unit	percent	percent	percent	percent	percent	percent	lb/plot	lb/A			
Rating Date	Jul-27-03	Aug-11-03	Oct-01-03	Jul-27-03	Jun-30-03	Aug-11-03	Nov-17-03	Nov-17-03			
Trt-Eval Interval	37 DA-A	52 DA-A	103 DA-A	37 DA-A	10 DA-A	52 DA-A	150 DA-A	150 DA-A			
ARM Action Codes											
# Subsamples, Dec.								TY1 1			
Trt No.	Treatment Name	Rate	Unit	17	18	19	20	21	22	23	24
1	Non-treated			0.0	0.0	0.0	0.0	0.0	0.0	1.0	160.9
2	Liberty	32	oz/a	99.0	96.5	99.0	97.3	94.0	96.3	12.2	2007.2
3	Liberty	32	oz/a	99.0	99.0	99.0	97.3	93.8	99.0	12.1	1996.5
4	Liberty	32	oz/a	99.0	99.0	99.0	95.5	88.5	94.3	11.5	1897.5
	Liberty	32	oz/a								
	Dual Magnum	1.2	pt/a								
5	Liberty	32	oz/a	99.0	99.0	99.0	98.5	94.3	99.0	11.8	1952.0
	Liberty	32	oz/a								
	Staple	0.8	oz/a								
6	Prowl	2	pt/a	99.0	99.0	99.0	99.0	98.8	99.0	13.0	2151.6
	Liberty	32	oz/a								
	Liberty	32	oz/a								
7	Prowl	2	pt/a	99.0	99.0	99.0	99.0	99.0	99.0	12.3	2032.0
	Staple	0.8	oz/a								
	Liberty	32	oz/a								
	Liberty	32	oz/a								
8	Prowl	2	pt/a	99.0	99.0	99.0	99.0	99.0	99.0	11.8	1942.9
	Cotoran	1.25	qt/a								
	Liberty	32	oz/a								
	Liberty	32	oz/a								
9	Cotoran	1.25	qt/a	99.0	99.0	99.0	99.0	99.0	99.0	12.3	2032.0
	Liberty	32	oz/a								
	Liberty	32	oz/a								
10	Staple	0.8	oz/a	99.0	98.0	99.0	99.0	99.0	99.0	12.2	2007.2
	Liberty	32	oz/a								
	Liberty	32	oz/a								
11	Prowl	2	pt/a	99.0	99.0	99.0	99.0	99.0	99.0	12.1	2003.1
	Liberty	32	oz/a								
	Liberty	32	oz/a								
	Dual Magnum	1.2	pt/a								
12	Prowl	2	pt/a	99.0	99.0	99.0	99.0	99.0	99.0	11.8	1946.2
	Liberty	32	oz/a								
	Liberty	32	oz/a								
	Staple	0.8	oz/a								
LSD (P=.05)				0.00	2.27	0.00	2.46	6.51	4.39	1.24	204.07
Standard Deviation				0.00	1.57	0.00	1.71	4.51	3.04	0.86	141.33
CV				0.0	1.74	0.0	1.89	5.09	3.37	7.66	7.66
Bartlett's X2				0.0	2.199	0.0	4.596	14.792	0.843	14.857	14.856
P(Bartlett's X2)				.	0.138	.	0.204	0.005*	0.359	0.189	0.189

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

Column 24: TY1 = 165.0*[23]

University of Georgia

Weed management systems in Liberty Link cotton.

Trial ID: C48-03
Location: Attapulcus

Study Dir.: Stanley Culpepper
Investigator: Stanley Culpepper

Trial Comments

OBJECTIVE: Evaluate Liberty Link Weed Management Systems.

CROP RESPONSE:

1) No injury was noted with any treatment in this trial.

WEED CONTROL:

Crowfootgrass, Sicklepod, Palmer Amaranth, Smallflower morningglory, Pink Purslane:

1) Weeds were less than 3 inches at time of initial POST applications and with each sequential applicaiton; thus control was excellent throughout the season.

YIELD RESPONSE:

1) Yields from plots treated with an herbicide system were greater than the non-treated control.
2) Yields were generally similar among all herbicide treated plots.

CONCLUSION:

1) Soil herbicides are not required if growers are extremely timely and the environment is very favorable for postemergence weed control as was the case in 2003. However, the addition of a soil applied herbicide is still recommended.