

# University of Georgia

## Evaluating Diuron 80 SC in Roundup Ready cotton.

Trial ID: C29-07  
 Location: Attapulgus

Study Dir.: Culpepper  
 Investigator: Stanley Culpepper

Reps: 4                      Plots: 12 by 25 feet  
 Spray vol: 14.8 gal/ac      Mix size: 2 liters (min 1.5434)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Grow Unit	Appl Stg	Code	Amt Product to Measure	Plot No. By Rep			
										1	2	3	4
1	Diuron	6.67	L		0.81	LB A/A	PRE	A	16.41 ml/mx	101	203	305	408
	Glyfos X-TRA	4	L		1	LB A/A	POT	B	33.78 ml/mx				
2	Direx	4	L		0.81	LB A/A	PRE	A	27.36 ml/mx	102	207	306	403
	Glyfos X-TRA	4	L		1	LB A/A	POT	B	33.78 ml/mx				
3	Diuron	6.67	L		1.67	LB A/A	PRE	A	33.83 ml/mx	103	206	310	409
	Glyfos X-TRA	4	L		1	LB A/A	POT	B	33.78 ml/mx				
4	Glyfos X-TRA	4	L		1	LB A/A	POT	B	33.78 ml/mx	104	209	301	402
	Diuron	6.67	L		0.42	LB A/A	Layby	C	8.508 ml/mx				
	MSMA	6	L		2.25	LB A/A	Layby	C	50.67 ml/mx				
	NIS		L		0.25	% V/V	Layby	C	4.999 ml/mx				
5	Glyfos X-TRA	4	L		1	LB A/A	POT	B	33.78 ml/mx	105	210	307	401
	Direx	4	L		0.42	LB A/A	Layby	C	14.19 ml/mx				
	MSMA	6	L		2.25	LB A/A	Layby	C	50.67 ml/mx				
	NIS		L		0.25	% V/V	Layb	C	4.999 ml/mx				
6	Glyfos X-TRA	4	L		1	LB A/A	POT	B	33.78 ml/mx	106	201	309	407
	Glyfos X-TRA	4	L		1	LB A/A	Layby	C	33.78 ml/mx				
	Diuron	6.67	L		0.75	LB A/A	Layby	C	15.19 ml/mx				
7	Glyfos X-TRA	4	L		1	LB A/A	POT	B	33.78 ml/mx	107	208	302	404
	Glyfos X-TRA	4	L		1	LB A/A	Layby	C	33.78 ml/mx				
	Direx	4	L		0.75	LB A/A	Layby	C	25.34 ml/mx				
8	Nontreated									108	202	308	406
9	Glyfos X-TRA	4	L		1	LB A/A	POT	B	33.78 ml/mx	109	205	304	405
	Diuron	6.67	L		1	LB A/A	Layby	C	20.26 ml/mx				
	MSMA	6	L		2.25	LB A/A	Layby	C	50.67 ml/mx				
	NIS		L		0.25	% V/V	Layby	C	4.999 ml/mx				
10	Glyfos X-TRA	4	L		1	LB A/A	POT	B	33.78 ml/mx	110	204	303	410
	Direx	4	L		1	LB A/A	Layby	C	33.78 ml/mx				
	MSMA	6	L		2.25	LB A/A	Layby	C	50.67 ml/mx				
	NIS		L		0.25	% V/V	Layby	C	4.999 ml/mx				

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
117.750	ml	Diuron	6.67	L	
464.478	ml	Glyfos X-TRA	4	L	
125.831	ml	Direx	4	L	
253.352	ml	MSMA	6	L	
24.997	ml	NIS		L	

\* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 2 liters (mix size basis).  
 \* Product amount calculations increased 25 % for overage adjustment.  
 \* 'Per volume' calculations use spray volume= 14.8 gal/ac, mix size= 2 liters.

# University of Georgia

## Evaluating Diuron 80 SC in Roundup Ready cotton.

Trial ID: C29-07  
Location: Attapulgus

Study Dir.: Culpepper  
Investigator: Stanley Culpepper

### Trial Comments

OBJECTIVE: Compare a 6.67 lb ai formulation of diuron to Direx 4 L.

#### COTTON RESPONSE:

1. PRE applications were watered in with irrigation. No differences in diuron formulation were noted but 1.67 lb/A of Direx caused severe cotton injury.
2. POT or Layby treatments did not injure the crop.

#### WEED RESPONSE:

##### Texas Panicum

1. Texas panicum was the dominant weed species present.
2. PRE applications provided statistically similar control when comparing diuron formulations. There was a slight trend for greater control prior to the POT application with Direx compared to the 6.67 lb/A new diuron formulation. Little differences in control were noted by the two rates.
3. Glyphosate POT provided complete control.
4. Directed applications of glyphosate plus diuron were more effective than MSMA mixtures with no differences noted in diuron products.

##### Carpetweed:

1. Control was excellent with all programs.

##### Smallflower morningglory:

1. PRE applications provided good to excellent control; the higher rate of diuron was more effective than lower rates but no differences in diuron formulations were noted.
2. POT and layby treatments provided complete control.
3. Ratings at harvest were not possible because of the intense grass infestation.

##### Bristly Starbur:

1. PRE diuron applications provided excellent early season control; by mid-season the higher rate of diuron was much more effective than the lower rate. At 53 d after the PRE and 35 d after POT, there was a 5% advantage for Direx over the 6.67 lb diuron formulation when applied at the same rate; however, this difference was not noted 9 d later.
2. POT and layby treatments provided excellent control with no differences noted.
3. Ratings at harvest were not possible because of the intense grass infestation.

##### Florida beggarweed:

1. PRE diuron applications provided excellent early season control; by mid-season control by the higher rate of diuron was much more effective than the lower rate. At 31 d after PRE and 13 d after POT, there was a 5% advantage for Direx over the 6.67 lb diuron formulation when applied at the same rate; however, differences were not noted at any other evaluation.
2. POT and layby treatments provided excellent control with no differences noted.
3. Ratings at harvest were not possible because of the intense grass infestation.

#### COTTON YIELD:

1. Trends in yield followed that noted with Texas panicum control.
2. Yields with layby treatments of glyphosate mixtures and Diuron 1 lb ai/A plus MSMA mixtures were greater than those with diuron at 0.42 lb ai/A plus MSMA.
3. Systems with PRE and POT only systems could not be harvested because the lack of grass control.
4. Although not significant, there was a trend for 94 to 221 lb/A more seed cotton in plots treated with Direx when compared to the same system with the diuron 6.67 formulation.

#### CONCLUSIONS:

1. A diuron formulation with 6.67 lb ai per gallon would be beneficial for growers; however with the minor differences noted in this trial, a study or studies similar to this should be repeated prior to launching the 6.67 lb diuron.

# University of Georgia

## Evaluating Diuron 80 SC in Roundup Ready cotton.

Trial ID: C29-07  
 Location: Attapulgus

Study Dir.: Culpepper  
 Investigator: Stanley Culpepper

Weed Code	INJURY	INJURY	INJURY	PANTE	PANTE	PANTE	PANTE	PANTE			
Crop Code	cotton	cotton	cotton								
Rating Data Type	%	%	%	%	%	%	%	%			
Rating Unit	control	control	control	control	control	control	control	control			
Rating Date	May-28-07	Jun-10-07	Jul-02-07	May-28-07	Jun-10-07	Jul-02-07	Jul-11-07	Jul-25-07			
Trt-Eval Interval	18 DA-A	13 DA-B	8 DA-C	18 DA-A	13 DA-B	8 DA-C	17 DA-C	31 DA-C			
ARM Action Codes											
# Subsamples, Dec.											
Trt No.	Treatment Name	Rate	Rate Unit	1	2	3	4	5	6	7	8
1	Diuron Glyfos X-TRA	0.81 1	LB A/A LB A/A	7 c	3 b	0 b	78 b	94 b	68 b	72 b	63 c
2	Direx Glyfos X-TRA	0.81 1	LB A/A LB A/A	11 b	3 b	2 b	84 ab	95 ab	71 b	76 b	68 c
3	Diuron Glyfos X-TRA	1.67 1	LB A/A LB A/A	34 a	25 a	10 a	86 a	97 a	73 b	75 b	62 c
4	Glyfos X-TRA Diuron MSMA NIS	1 0.42 2.25 0.25	LB A/A LB A/A LB A/A % V/V	2 d	0 b	0 b	0 c	90 c	90 a	94 a	89 b
5	Glyfos X-TRA Direx MSMA NIS	1 0.42 2.25 0.25	LB A/A LB A/A LB A/A % V/V	0 d	0 b	0 b	0 c	90 c	88 a	91 a	89 b
6	Glyfos X-TRA Glyfos X-TRA Diuron	1 1 0.75	LB A/A LB A/A LB A/A	0 d	0 b	1 b	0 c	90 c	90 a	92 a	99 a
7	Glyfos X-TRA Glyfos X-TRA Direx	1 1 0.75	LB A/A LB A/A LB A/A	0 d	0 b	1 b	0 c	90 c	90 a	97 a	99 a
8	Nontreated			0 d	0 b	0 b	0 c	0 d	0 c	0 c	0 d
9	Glyfos X-TRA Diuron MSMA NIS	1 1 2.25 0.25	LB A/A LB A/A LB A/A % V/V	0 d	0 b	0 b	0 c	90 c	91 a	92 a	86 b
10	Glyfos X-TRA Direx MSMA NIS	1 1 2.25 0.25	LB A/A LB A/A LB A/A % V/V	0 d	0 b	0 b	0 c	91 c	95 a	97 a	93 ab
LSD (P=.05)				3.2	4.6	1.9	6.9	2.4	7.9	7.5	7.2
Standard Deviation				2.2	3.2	1.3	4.7	1.6	5.4	5.2	5.0
CV				41.54	102.32	96.58	19.24	1.99	7.22	6.6	6.68
Bartlett's X2				6.526	0.649	0.682	4.855	8.007	1.439	6.694	15.403
P(Bartlett's X2)				0.089	0.723	0.711	0.088	0.046*	0.994	0.57	0.031*

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

# University of Georgia

Weed Code	PANTE	MOLVE	MOLVE	MOLVE	MOLVE	IAQTA	IAQTA	IAQTA			
Crop Code											
Rating Data Type	%	%	%	%	%	%	%	%			
Rating Unit	control	control	control	control	control	control	control	control			
Rating Date	Oct-09-07	May-28-07	Jun-10-07	Jul-02-07	Jul-11-07	May-28-07	Jul-11-07	Jul-25-07			
Trt-Eval Interval	107 DA-C	18 DA-A	13 DA-B	8 DA-C	17 DA-C	18 DA-A	17 DA-C	31 DA-C			
ARM Action Codes											
# Subsamples, Dec.											
Trt No.	Treatment Name	Rate	Unit	9	10	11	12	13	14	15	16
1	Diuron Glyfos X-TRA	0.81 1	LB A/A LB A/A	0 d	99 a	94 b	99 a	99 a	97 a	91 c	89 c
2	Direx Glyfos X-TRA	0.81 1	LB A/A LB A/A	0 d	99 a	99 a	99 a	99 a	98 a	90 c	90 c
3	Diuron Glyfos X-TRA	1.67 1	LB A/A LB A/A	0 d	99 a	99 a	99 a	99 a	99 a	97 b	95 b
4	Glyfos X-TRA Diuron MSMA NIS	1 0.42 2.25 0.25	LB A/A LB A/A LB A/A % V/V	64 c	0 b	90 c	99 a	99 a	0 b	99 a	99 a
5	Glyfos X-TRA Direx MSMA NIS	1 0.42 2.25 0.25	LB A/A LB A/A LB A/A % V/V	67 bc	0 b	90 c	99 a	99 a	0 b	99 a	99 a
6	Glyfos X-TRA Glyfos X-TRA Diuron	1 1 0.75	LB A/A LB A/A LB A/A	90 a	0 b	90 c	99 a	99 a	0 b	99 a	99 a
7	Glyfos X-TRA Glyfos X-TRA Direx	1 1 0.75	LB A/A LB A/A LB A/A	93 a	0 b	90 c	99 a	99 a	0 b	99 a	99 a
8	Nontreated			0 d	0 b	0 d	0 b	0 b	0 b	0 d	0 d
9	Glyfos X-TRA Diuron MSMA NIS	1 1 2.25 0.25	LB A/A LB A/A LB A/A % V/V	73 b	0 b	90 c	99 a	99 a	0 b	99 a	99 a
10	Glyfos X-TRA Direx MSMA NIS	1 1 2.25 0.25	LB A/A LB A/A LB A/A % V/V	74 b	0 b	91 c	99 a	99 a	0 b	99 a	99 a
LSD (P=.05)	7.9	0.0	2.2	0.0	0.0	2.2	2.2	2.8			
Standard Deviation	5.4	0.0	1.5	0.0	0.0	1.5	1.5	1.9			
CV	11.78	0.0	1.78	0.0	0.0	5.08	1.71	2.19			
Bartlett's X2	6.23	0.0	0.488	0.0	0.0	1.759	1.362	6.342			
P(Bartlett's X2)	0.284	.	0.485	.	.	0.185	0.506	0.042*			

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

# University of Georgia

Weed Code	ACNHI	ACNHI	ACNHI	ACNHI	DEDTO	DEDTO	DEDTO	DEDTO	DEDTO			
Crop Code												
Rating Data Type	%	%	%	%	%	%	%	%	%			
Rating Unit	control	control	control	control	control	control	control	control	control			
Rating Date	May-28-07	Jul-02-07	Jul-11-07	Jul-25-07	May-28-07	Jun-10-07	Jul-02-07	Jul-11-07	Jul-25-07			
Trt-Eval Interval	18 DA-A	8 DA-C	17 DA-C	31 DA-C	18 DA-A	13 DA-B	8 DA-C	17 DA-C	31 DA-C			
ARM Action Codes												
# Subsamples, Dec.												
Trt No.	Treatment Name	Rate	Unit	17	18	19	20	21	22	23	24	25
1	Diuron Glyphos X-TRA	0.81 1	LB A/A LB A/A	92 b	66 d	92 b	81 c	95 b	94 b	69 c	87 b	93 b
2	Direx Glyphos X-TRA	0.81 1	LB A/A LB A/A	94 b	71 c	92 b	82 c	96 b	99 a	71 c	90 b	95 ab
3	Diuron Glyphos X-TRA	1.67 1	LB A/A LB A/A	99 a	92 b	94 b	90 b	99 a	99 a	92 b	90 b	95 ab
4	Glyphos X-TRA Diuron MSMA NIS	1 0.42 2.25 0.25	LB A/A LB A/A LB A/A % V/V	0 c	99 a	99 a	99 a	0 c	90 c	99 a	99 a	99 a
5	Glyphos X-TRA Direx MSMA NIS	1 0.42 2.25 0.25	LB A/A LB A/A LB A/A % V/V	0 c	99 a	99 a	99 a	0 c	90 c	99 a	99 a	99 a
6	Glyphos X-TRA Glyphos X-TRA Diuron	1 1 0.75	LB A/A LB A/A LB A/A	0 c	99 a	99 a	99 a	0 c	90 c	99 a	99 a	99 a
7	Glyphos X-TRA Glyphos X-TRA Direx	1 1 0.75	LB A/A LB A/A LB A/A	0 c	99 a	99 a	99 a	0 c	90 c	99 a	99 a	99 a
8	Nontreated			0 c	0 e	0 c	0 d	0 c	0 d	0 d	0 c	0 c
9	Glyphos X-TRA Diuron MSMA NIS	1 1 2.25 0.25	LB A/A LB A/A LB A/A % V/V	0 c	99 a	99 a	99 a	0 c	90 c	99 a	99 a	99 a
10	Glyphos X-TRA Direx MSMA NIS	1 1 2.25 0.25	LB A/A LB A/A LB A/A % V/V	0 c	99 a	99 a	99 a	0 c	91 c	99 a	99 a	99 a
LSD (P=.05)				2.8	4.0	3.8	4.4	2.6	2.2	3.7	6.9	4.3
Standard Deviation				1.9	2.8	2.6	3.0	1.8	1.5	2.6	4.8	2.9
CV				6.77	3.39	3.03	3.55	6.27	1.78	3.12	5.56	3.35
Bartlett's X2				0.091	3.203	15.521	8.033	1.456	0.488	7.914	0.198	0.495
P(Bartlett's X2)				0.763	0.202	0.001*	0.018*	0.228	0.485	0.048*	0.906	0.781

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

# University of Georgia

Weed Code	SEED	SEED	
Crop Code	cotton	cotton	
Rating Data Type	lb	YIELD	
Rating Unit	plot	LB/A	
Rating Date	Oct-09-07	Oct-09-07	
Trt-Eval Interval	152 DA-A	152 DA-A	
ARM Action Codes		TY1	
# Subsamples, Dec.		1	
Trt No.	Treatment Name	Rate	Unit
		Rate	Unit
		26	27
1	Diuron Glyfos X-TRA	0.81 LB A/A 1 LB A/A	0 c 0.0 c
2	Direx Glyfos X-TRA	0.81 LB A/A 1 LB A/A	0 c 0.0 c
3	Diuron Glyfos X-TRA	1.67 LB A/A 1 LB A/A	0 c 0.0 c
4	Glyfos X-TRA Diuron MSMA NIS	1 LB A/A 0.42 LB A/A 2.25 LB A/A 0.25 % V/V	8 b 2391.4 b
5	Glyfos X-TRA Direx MSMA NIS	1 LB A/A 0.42 LB A/A 2.25 LB A/A 0.25 % V/V	9 b 2485.8 b
6	Glyfos X-TRA Glyfos X-TRA Diuron	1 LB A/A 1 LB A/A 0.75 LB A/A	10 a 2863.3 a
7	Glyfos X-TRA Glyfos X-TRA Direx	1 LB A/A 1 LB A/A 0.75 LB A/A	11 a 3082.6 a
8	Nontreated		0 c 0.0 c
9	Glyfos X-TRA Diuron MSMA NIS	1 LB A/A 1 LB A/A 2.25 LB A/A 0.25 % V/V	9 ab 2721.0 ab
10	Glyfos X-TRA Direx MSMA NIS	1 LB A/A 1 LB A/A 2.25 LB A/A 0.25 % V/V	10 a 2921.4 a
LSD (P=.05)		1.2	343.41
Standard Deviation		0.8	236.67
CV		14.37	14.37
Bartlett's X2		6.544	6.544
P(Bartlett's X2)		0.257	0.257

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

Column 27: TY1 = 290.4\*[C26]



# University of Georgia

	Previous Crops	Previous Pesticides	Year
1.			

### MAINTENANCE

Field Prep./Maintenance:

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

### SOIL DESCRIPTION

% Sand: 84	% OM: 1.3	Texture: loamy sand
% Silt: 8	pH: 6.0	Soil Name: _____
% Clay: 8	CEC: _____	Fert. Level: _____

### ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

### MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: irrigated

Closest Weather Station: \_\_\_\_\_ Distance: \_\_\_\_\_ Unit: \_\_\_\_

### APPLICATION DESCRIPTION

	A	B	C
Application Date:	May-10-07	May-28-07	Jun-24-07
Time of Day:	11:00 am	8:00 am	9:00 am
Application Method:	broadcast	broadcast	broadcast
Application Timing:	PRE	POT	Layby
Applic. Placement:	on soil	overtop	directed
Air Temp., Unit:	84 F	76 F	82 F
% Relative Humidity:	38	63	49
Wind Velocity, Unit:	3 mph	3 mph	3 mph
Dew Presence (Y/N):	N	N	Y
Water Hardness:			
Soil Temp., Unit:	82 F	74 F	84 F
Soil Moisture:	moist	fair	moist
% Cloud Cover:	0	0	100

### CROP STAGE AT EACH APPLICATION

	A	B	C
Crop 1 Code, Stage:	GOSHI PRE	GOSHI POST	GOSHI Layby
Stage Scale:	not up	2-3 leaf	11 leaf
Height, Unit:	0 inch	4 inch	15 in

# University of Georgia

## WEED STAGE AT EACH APPLICATION

	A	B	C
<b>Weed 1 Code, Stage:</b>	ACNHI PRE	ACNHI POT	ACNHI Layby
<b>Stage Scale:</b>	not up	< 3 inch	up to 4in
<b>Density, Unit:</b>	0 ydsq	12 ydsq	4 ydsq
<b>Weed 2 Code, Stage:</b>	IAQTA PRE	IAQTA POT	IAQTA Layby
<b>Stage Scale:</b>	not up	< 3 inch	up to 4in
<b>Density, Unit:</b>	0 ydsq	4 ydsq	2 ydsq
<b>Weed 3 Code, Stage:</b>	PANTE PRE	PANTE POT	PANTE Layby
<b>Stage Scale:</b>	not up	< 3 inch	up to 4in
<b>Density, Unit:</b>	0 ydsq	30 ydsq	15 ydsq
<b>Weed 4 Code, Stage:</b>	DEDTO PRE	DEDTO POT	DEDTO Layby
<b>Stage Scale:</b>	not up	< 3 inch	up to 4in
<b>Density, Unit:</b>	0 ydsq	15 ydsq	15 ydsq
<b>Weed 5 Code, Stage:</b>	MOLVE PRE	MOLVE POT	MOLVE Layby
<b>Stage Scale:</b>	not up	< 3 inch	none pres
<b>Density, Unit:</b>	0 ydsq	3 ydsq	0 ydsq

## APPLICATION EQUIPMENT

	A	B	C
<b>Appl. Equipment:</b>	backpack	backpack	backpack
<b>Operating Pressure:</b>	24	24	26
<b>Nozzle Type:</b>	flat fan	flat fan	floodjet
<b>Nozzle Size:</b>	11002	11002	TK2
<b>Nozzle Spacing, Unit:</b>	18 in	18 in	36 in
<b>Nozzles/Row:</b>	2	2	1
<b>Band Width, Unit:</b>			
<b>Boom Length, Unit:</b>	4.5 ft	4.5 ft	
<b>Boom Height, Unit:</b>	15 in	15 in	12 in
<b>Ground Speed, Unit:</b>	3 mph	3 mph	3 mph
<b>Incorporation Equip.:</b>			
<b>Hours to Incorp.:</b>			
<b>Incorp. Depth, Unit:</b>			
<b>Carrier:</b>	water	water	water
<b>Spray Volume, Unit:</b>	15 GPA	15 GPA	15 GPA
<b>Spray pH:</b>			
<b>Propellant:</b>	CO2	CO2	CO2
<b>Tank Mix (Y/N):</b>			

Trt No	Treatment Application Comment