

University of Georgia

Roundup Ready Flex cotton efficacy and tolerance study.

Trial ID: C37-06 Study Dir.: Stanley Culpepper
Location: Ponder farm (5161) Investigator: Stanley Culpepper

Reps: 4 Plots: 12 by 30 feet
Spray vol: 14.8 gal/ac Mix size: 2 liters (min 1.852)

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	4
1	NUP-05073	3.75	L	L	1.125	LB A/A	2 If	A	40.54 ml/mx	101	206	309	405
	NUP-05073	3.75	L	L	1.125	LB A/A	6 If	B	40.54 ml/mx				
	NUP-05073	3.75	L	L	1.125	LB A/A	10 If	C	40.54 ml/mx				
	NUP-05073	3.75	L	L	1.125	LB A/A	14 If	D	40.54 ml/mx				
2	NUP 3C 02	3	L	L	1.125	LB A/A	2 If	A	50.67 ml/mx	102	209	306	404
	NUP 3C 02	3	L	L	1.125	LB A/A	6 If	B	50.67 ml/mx				
	NUP 3C 02	3	L	L	1.125	LB A/A	10 If	C	50.67 ml/mx				
	NUP 3C 02	3	L	L	1.125	LB A/A	14 If	D	50.67 ml/mx				
3	NUP 10B 04	3	L	L	1.125	LB A/A	2 If	A	50.67 ml/mx	103	202	303	402
	NUP 10B 04	3	L	L	1.125	LB A/A	6 If	B	50.67 ml/mx				
	NUP 10B 04	3	L	L	1.125	LB A/A	10 If	C	50.67 ml/mx				
	NUP 10B 04	3	L	L	1.125	LB A/A	14 If	D	50.67 ml/mx				
4	NUP 4U 05	3	L	L	1.125	LB A/A	2 If	A	50.67 ml/mx	104	207	305	403
	NUP 4U 05	3	L	L	1.125	LB A/A	6 If	B	50.67 ml/mx				
	NUP 4U 05	3	L	L	1.125	LB A/A	10 If	C	50.67 ml/mx				
	NUP 4U 05	3	L	L	1.125	LB A/A	14 If	D	50.67 ml/mx				
5	NUP-06004	3	L	L	1.125	LB A/A	2 If	A	50.67 ml/mx	105	201	307	409
	NUP-06004	3	L	L	1.125	LB A/A	6 If	B	50.67 ml/mx				
	NUP-06004	3	L	L	1.125	LB A/A	10 If	C	50.67 ml/mx				
	NUP-06004	3	L	L	1.125	LB A/A	14 If	D	50.67 ml/mx				
6	NUP-06042	3	L	L	1.125	LB A/A	2 If	A	50.67 ml/mx	106	203	304	406
	NUP-06042	3	L	L	1.125	LB A/A	6 If	B	50.67 ml/mx				
	NUP-06042	3	L	L	1.125	LB A/A	10 If	C	50.67 ml/mx				
	NUP-06042	3	L	L	1.125	LB A/A	14 If	D	50.67 ml/mx				
7	NUP-06044	4.5	L	L	1.125	LB A/A	2 If	A	33.78 ml/mx	107	204	308	401
	NUP-06044	4.5	L	L	1.125	LB A/A	6 If	B	33.78 ml/mx				
	NUP-06044	4.5	L	L	1.125	LB A/A	10 If	C	33.78 ml/mx				
	NUP-06044	4.5	L	L	1.125	LB A/A	14 If	D	33.78 ml/mx				
8	NUP-06077	4.5	L	L	1.125	LB A/A	2 If	A	33.78 ml/mx	108	205	302	408
	NUP-06077	4.5	L	L	1.125	LB A/A	6 If	B	33.78 ml/mx				
	NUP-06077	4.5	L	L	1.125	LB A/A	10 If	C	33.78 ml/mx				
	NUP-06077	4.5	L	L	1.125	LB A/A	14 If	D	33.78 ml/mx				
9	Non-treated									109	208	301	407

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
202.681	ml	NUP-05073	3.75	L	
253.352	ml	NUP 3C 02	3	L	
253.352	ml	NUP 10B 04	3	L	
253.352	ml	NUP 4U 05	3	L	
253.352	ml	NUP-06004	3	L	
253.352	ml	NUP-06042	3	L	
168.901	ml	NUP-06044	4.5	L	
168.901	ml	NUP-06077	4.5	L	

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Reps: 4 Plots: 12 by 30 feet
 Spray vol: 14.8 gal/ac Mix size: 2 liters (min 1.852)

Trt No.	Tr> N>	Form Conc	Form Unit	Form Type	Rate	Plot No. By Rep
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Product quantities required for listed treatments and applications in one trial:

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
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- * '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.

Trial Comments

OBJECTIVE: Compare cotton response from 8 glyphosate formulations.

VISUAL COTTON RESPONSE:

1. Cotton was injured less than 7% by all glyphosate formulations throughout the season.
2. Cotton in the control was stunted 35% in late May and 70% by late June from weed competition.
3. Treatments were applied under various conditions that should have caused injury; however, this season was dry which may have made the cotton more tolerant.

WEED RESPONSE:

1. Control of all weed species was essentially similar when comparing all glyphosate formulations. Late-season control was excellent with all programs.

SEED YIELD RESPONSE:

1. Yield was similar among most treatments. Yield was generally less in the NUP 4U 05 treatment but this was not in response to visual injury or weed control and may just be an anomaly.

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Roundup Ready Flex cotton efficacy and tolerance study.

Trial ID: C37-06

Study Dir.: Stanley Culpepper

Location: Ponder farm (5161)

Investigator: Stanley Culpepper

Weed Code					OEOLA	OEOLA	OEOLA	MOLVE	
Crop Code	GOSHI	GOSHI	GOSHI	GOSHI					
Rating Data Type	necrosis	necrosis	necrosis	necrosis	control	control	control	control	
Rating Unit	%	%	%	%	%	%	%	%	
Rating Date	May-25-06	Jun-03-06	Jun-20-06	Jul-03-06	May-31-06	Jun-20-06	Jul-05-06	May-31-06	
Assessed By	AD	SC	AD	SC	AD	AD	AD	AD	
Trt-Eval Interval	9 DA-A	3 DA-B	4 DA-C	5 DA-D	15 DA-A	35 DA-A	50 DA-A	15 DA-A	
ARM Action Codes									
# Subsamples, Dec.									
Trt Treatment	Rate								
No. Name	Rate Unit	1	2	3	4	5	6	7	8
1 NUP-05073	1.125 LB A/A	0 a	0 b	0 a	0 a	100 a	100 a	100 a	94 a
NUP-05073	1.125 LB A/A								
NUP-05073	1.125 LB A/A								
NUP-05073	1.125 LB A/A								
2 NUP 3C 02	1.125 LB A/A	0 a	0 b	3 a	0 a	99 a	100 a	100 a	96 a
NUP 3C 02	1.125 LB A/A								
NUP 3C 02	1.125 LB A/A								
NUP 3C 02	1.125 LB A/A								
3 NUP 10B 04	1.125 LB A/A	0 a	0 b	0 a	0 a	96 a	100 a	100 a	94 a
NUP 10B 04	1.125 LB A/A								
NUP 10B 04	1.125 LB A/A								
NUP 10B 04	1.125 LB A/A								
4 NUP 4U 05	1.125 LB A/A	0 a	0 b	1 a	0 a	100 a	100 a	100 a	96 a
NUP 4U 05	1.125 LB A/A								
NUP 4U 05	1.125 LB A/A								
NUP 4U 05	1.125 LB A/A								
5 NUP-06004	1.125 LB A/A	0 a	0 b	2 a	0 a	96 a	100 a	100 a	95 a
NUP-06004	1.125 LB A/A								
NUP-06004	1.125 LB A/A								
NUP-06004	1.125 LB A/A								
6 NUP-06042	1.125 LB A/A	0 a	7 a	0 a	0 a	96 a	100 a	100 a	91 a
NUP-06042	1.125 LB A/A								
NUP-06042	1.125 LB A/A								
NUP-06042	1.125 LB A/A								
7 NUP-06044	1.125 LB A/A	0 a	0 b	3 a	0 a	96 a	100 a	100 a	95 a
NUP-06044	1.125 LB A/A								
NUP-06044	1.125 LB A/A								
NUP-06044	1.125 LB A/A								
8 NUP-06077	1.125 LB A/A	0 a	0 b	0 a	0 a	98 a	100 a	100 a	98 a
NUP-06077	1.125 LB A/A								
NUP-06077	1.125 LB A/A								
NUP-06077	1.125 LB A/A								
9 Non-treated		0 a	0 b	0 a	0 a	0 b	0 b	0 b	0 b
LSD (P=.05)		0.0	2.2	3.1	0.0	6.3	0.0	0.0	6.9
Standard Deviation		0.0	1.5	2.1	0.0	4.3	0.0	0.0	4.7
CV		0.0	203.27	225.48	0.0	4.99	0.0	0.0	5.59
Bartlett's X2		0.0	0.0	2.599	0.0	5.289	0.0	0.0	3.134
P(Bartlett's X2)		.	.	0.458	.	0.382	.	.	0.872

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

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Weed Code	MOLVE	DTTAE	DTTAE	IAQTA	IAQTA	IAQTA	IAQTA	PORPI			
Crop Code											
Rating Data Type	control	control	control	control	control	control	control	control			
Rating Unit	%	%	%	%	%	%	%	%			
Rating Date	Jun-20-06	May-31-06	Jul-05-06	May-31-06	Jun-07-06	Jun-20-06	Jul-05-06	May-31-06			
Assessed By	AD	AD	AD	AD	AD	AD	AD	AD			
Trt-Eval Interval	35 DA-A	15 DA-A	50 DA-A	15 DA-A	22 DA-A	35 DA-A	50 DA-A	15 DA-A			
ARM Action Codes											
# Subsamples, Dec.											
Trt No.	Treatment Name	Rate	Rate Unit	9	10	11	12	13	14	15	16
1	NUP-05073	1.125	LB A/A	100 a	96 ab	100 ab	93 a	89 a	90 a	100 a	95 a
	NUP-05073	1.125	LB A/A								
	NUP-05073	1.125	LB A/A								
	NUP-05073	1.125	LB A/A								
2	NUP 3C 02	1.125	LB A/A	100 a	95 ab	100 a	85 a	88 a	95 a	100 a	89 a
	NUP 3C 02	1.125	LB A/A								
	NUP 3C 02	1.125	LB A/A								
	NUP 3C 02	1.125	LB A/A								
3	NUP 10B 04	1.125	LB A/A	100 a	85 b	99 b	94 a	89 a	99 a	100 a	85 a
	NUP 10B 04	1.125	LB A/A								
	NUP 10B 04	1.125	LB A/A								
	NUP 10B 04	1.125	LB A/A								
4	NUP 4U 05	1.125	LB A/A	100 a	98 a	100 a	88 a	89 a	97 a	100 a	85 a
	NUP 4U 05	1.125	LB A/A								
	NUP 4U 05	1.125	LB A/A								
	NUP 4U 05	1.125	LB A/A								
5	NUP-06004	1.125	LB A/A	100 a	99 a	100 ab	94 a	90 a	98 a	100 a	91 a
	NUP-06004	1.125	LB A/A								
	NUP-06004	1.125	LB A/A								
	NUP-06004	1.125	LB A/A								
6	NUP-06042	1.125	LB A/A	100 a	96 ab	100 ab	88 a	86 a	95 a	100 a	86 a
	NUP-06042	1.125	LB A/A								
	NUP-06042	1.125	LB A/A								
	NUP-06042	1.125	LB A/A								
7	NUP-06044	1.125	LB A/A	100 a	90 ab	100 ab	93 a	85 a	97 a	100 a	86 a
	NUP-06044	1.125	LB A/A								
	NUP-06044	1.125	LB A/A								
	NUP-06044	1.125	LB A/A								
8	NUP-06077	1.125	LB A/A	100 a	94 ab	100 a	95 a	90 a	91 a	100 a	95 a
	NUP-06077	1.125	LB A/A								
	NUP-06077	1.125	LB A/A								
	NUP-06077	1.125	LB A/A								
9	Non-treated			0 b	0 c	0 c	0 b	0 b	0 b	0 b	0 b
LSD (P=.05)	0.0	10.5	0.7	9.5	12.5	9.2	0.6	19.9			
Standard Deviation	0.0	7.2	0.5	6.5	8.6	6.3	0.4	13.7			
CV	0.0	8.58	0.58	8.04	10.98	7.45	0.49	17.24			
Bartlett's X2	0.0	16.329	3.681	9.009	8.751	26.899	2.443	4.354			
P(Bartlett's X2)	.	0.012*	0.451	0.252	0.271	0.001*	0.486	0.629			

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

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Weed Code	PORPI	AMAPA	AMAPA	AMAPA	RAPRA	Seed Yld GOSHI	Seed Yld GOSHI			
Crop Code	control	control	control	control	control	weight	YIELD			
Rating Data Type	%	%	%	%	%	lb/plot	LB			
Rating Unit	Jun-20-06	May-31-06	Jun-20-06	Jul-05-06	May-31-06	Oct-25-06	Oct-25-06			
Rating Date	AD	AD	AD	AD	AD					
Assessed By	35 DA-A	15 DA-A	35 DA-A	50 DA-A	15 DA-A					
Trt-Eval Interval							TY1			
ARM Action Codes							1			
# Subsamples, Dec.										
Trt No.	Treatment Name	Rate	Unit	17	18	19	20	21	22	23
1	NUP-05073	1.125	LB A/A	100 a	89 b	100 a	100 a	100 a	8 a	1870.7 a
	NUP-05073	1.125	LB A/A							
	NUP-05073	1.125	LB A/A							
	NUP-05073	1.125	LB A/A							
2	NUP 3C 02	1.125	LB A/A	100 a	99 a	100 a	100 a	100 a	7 ab	1654.1 ab
	NUP 3C 02	1.125	LB A/A							
	NUP 3C 02	1.125	LB A/A							
	NUP 3C 02	1.125	LB A/A							
3	NUP 10B 04	1.125	LB A/A	100 a	100 a	100 a	100 a	100 a	8 a	1915.4 a
	NUP 10B 04	1.125	LB A/A							
	NUP 10B 04	1.125	LB A/A							
	NUP 10B 04	1.125	LB A/A							
4	NUP 4U 05	1.125	LB A/A	100 a	93 ab	100 a	100 a	99 a	6 b	1437.5 b
	NUP 4U 05	1.125	LB A/A							
	NUP 4U 05	1.125	LB A/A							
	NUP 4U 05	1.125	LB A/A							
5	NUP-06004	1.125	LB A/A	100 a	96 a	100 a	100 a	100 a	7 ab	1702.5 ab
	NUP-06004	1.125	LB A/A							
	NUP-06004	1.125	LB A/A							
	NUP-06004	1.125	LB A/A							
6	NUP-06042	1.125	LB A/A	100 a	96 a	100 a	100 a	100 a	7 a	1790.8 a
	NUP-06042	1.125	LB A/A							
	NUP-06042	1.125	LB A/A							
	NUP-06042	1.125	LB A/A							
7	NUP-06044	1.125	LB A/A	100 a	98 a	100 a	100 a	100 a	7 ab	1644.4 ab
	NUP-06044	1.125	LB A/A							
	NUP-06044	1.125	LB A/A							
	NUP-06044	1.125	LB A/A							
8	NUP-06077	1.125	LB A/A	100 a	99 a	100 a	100 a	100 a	7 ab	1683.1 ab
	NUP-06077	1.125	LB A/A							
	NUP-06077	1.125	LB A/A							
	NUP-06077	1.125	LB A/A							
9	Non-treated			0 b	0 c	0 b	0 b	0 b	0 c	0.0 c
LSD (P=.05)		0.0	6.8	0.0	0.0	1.2	1.2	287.86		
Standard Deviation		0.0	4.7	0.0	0.0	0.8	0.8	197.24		
CV		0.0	5.45	0.0	0.0	0.94	12.96	12.96		
Bartlett's X2		0.0	11.46	0.0	0.0	0.0	3.958	3.958		
P(Bartlett's X2)		.	0.075	.	.	.	0.785	0.785		

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

Column 23: TY1 = 242.0*[22]

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	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: 94	% OM: 1.1	Texture: sand	
% Silt: 2	pH: 6.1	Soil Name: Tifton sandy loam	
% Clay: 4	CEC: _____	Fert. Level: _____	

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: dryland

Closest Weather Station: _____ Distance: _____ Unit: ____

APPLICATION DESCRIPTION

	A	B	C	D
Application Date:	May-16-06	May-31-06	Jun-16-06	Jun-28-06
Time of Day:	7 am	11 am	8 am	8 am
Application Method:	broadcast	broadcast	broadcast	broadcast
Application Timing:	2 lf	6 lf	10 lf	14 lf
Applic. Placement:	overtop	overtop	overtop	overtop
Air Temp., Unit:	58 F	86 F	77 F	78 F
% Relative Humidity:	73	49	72	69
Wind Velocity, Unit:	0 mph	0 mph	3 mph	2 mph
Dew Presence (Y/N):	y	n	y	y
Water Hardness:				
Soil Temp., Unit:	60 F	93 F	75 F	78 F
Soil Moisture:	moist	moist	moist	moist
% Cloud Cover:	40	0	0	0

CROP STAGE AT EACH APPLICATION

	A	B	C	D
Crop 1 Code, Stage:	GOSHI 2 lf	GOSHI 6 lf	GOSHI 10 lf	GOSHI 14 lf
Stage Scale:	2 leaf	6 leaf	10-11leaf	14 leaf
Height, Unit:	3 in	8 in	14 in	20 in

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WEED STAGE AT EACH APPLICATION

	A	B	C	D
Weed 1 Code, Stage:	OEOLA 2 lf	OEOLA 6 lf	OEOLA 10 lf	OEOLA 14 lf
Stage Scale:	matureout	matured	matured	matured
Density, Unit:	3 ydsq	3 ydsq	3 ydsq	3 ydsq
Weed 2 Code, Stage:	MOLVE 2 lf	MOLVE 6 lf	MOLVE 10 lf	MOLVE 14 lf
Stage Scale:	1-2 inch	2-3 inch	3-4 inch	3-4 inch
Density, Unit:	4 ydsq	1 ydsq	1 ydsq	1 ydsq
Weed 3 Code, Stage:	DTTAE 2 lf	DTTAE 6 lf	DTTAE 10 lf	DTTAE 14 lf
Stage Scale:	2-4 inch	1-3 inch	1-4 inch	1-3 inch
Density, Unit:	12 ydsq	5 ydsq	3 ydsq	1 ydssq
Weed 4 Code, Stage:	IAQTQ 2 lf	IAQTQ 6 lf	IAQTQ 10 lf	IAQTQ 14 lf
Stage Scale:	1 inch	1-3 inch	1-3 inch	1-4 inch
Density, Unit:	2 ydsq	4 ydsq	2 ydsq	2 ydsq
Weed 5 Code, Stage:	AMAPA 2 lf	AMAPA 6 lf	AMAPA 10 lf	AMAPA 14 lf
Stage Scale:	1-2 inch	2-3 inch	3-4 inch	3-4 inch
Density, Unit:	4 ydsq	1 ydsq	1 ydsq	1 ydsq
Weed 6 Code, Stage:	RAPRA 2 lf	RAPRA 6 lf	RAPRA 10 lf	RAPRA 14 lf
Stage Scale:	matured	matured	matured	matured
Density, Unit:	1 ydsq	0 ydsq	0 ydsq	0 ydsq
Weed 7 Code, Stage:	PORPI 2 lf	PORPI 6 lf	PORPI 10 lf	PORPI 14 lf
Stage Scale:	1 inch	2 inch	2 inch	1 inch
Density, Unit:	3 ydsq	2 ydsq	1 ydsq	1 ydsq

APPLICATION EQUIPMENT

	A	B	C	D
Appl. Equipment:	backpack	backpack	backpack	backpack
Operating Pressure:	24	24	24	24
Nozzle Type:	flat fan	flat fan	flat fan	flat fan
Nozzle Size:	11002	11002	11002	11002
Nozzle Spacing, Unit:	18 in	18 in	18 in	18 in
Nozzles/Row:	2	2	2	2
Band Width, Unit:				
Boom Length, Unit:	4.5 feet	4.5 feet	4.5 feet	4.5 feet
Boom Height, Unit:	15 inch	15 inch	15 inch	15 inch
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph
Incorporation Equip.:				
Hours to Incorp.:				
Incorp. Depth, Unit:				
Carrier:	water	water	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA	14.8 GPA	14.8 GPA
Spray pH:				
Propellant:	CO2	CO2	CO2	CO2
Tank Mix (Y/N):	Y	Y	Y	Y

Trt No	Treatment Application Comment