

University of Georgia

Cotton response to topical mixtures of glyphosate and V-10142 or V-10169.

Trial ID: C43-05

Study Dir.: Stanley Culpepper

Location: Sunbelt Expo

Investigator: Stanley Culpepper

Reps: 3

Plots: 12 by 25 feet

Spray vol: 14.8 gal/ac

Mix size: 1.5 liters (min 1.1575)

Trt No.	Treatment Name	Form Conc	Form Type	Rate Rate	Grow Unit	Appl Stg	Amt Code	Product to Measure	Plot No. By Rep				
									1	2	3		
1	None								101	213	304		
2	Roundup WeatherMax	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	102	214	313
3	Roundup WeatherMax V-10142	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	103	211	303
		75	DF	0.2	lb ai/a	2-4	leaf	A	3.239	g/mx			
4	Roundup WeatherMax V-10142	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	104	210	305
		75	DF	0.3	lb ai/a	2-4	leaf	A	4.858	g/mx			
5	Roundup WeatherMax V-10142	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	105	212	310
		75	DF	0.4	lb ai/a	2-4	leaf	A	6.477	g/mx			
6	Roundup WeatherMax V-10169	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	106	207	302
		0.41	EC	0.009	lb ai/a	2-4	leaf	A	2.225	ml/mx			
7	Roundup WeatherMax V-10169	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	107	202	314
		0.41	EC	0.018	lb ai/a	2-4	leaf	A	4.449	ml/mx			
8	Roundup WeatherMax V-10169	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	108	203	308
		0.41	EC	0.027	lb ai/a	2-4	leaf	A	6.674	ml/mx			
9	Roundup WeatherMax	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	109	208	301
	Roundup WeatherMax	4.5	L	16	oz/a	8-10	lf	B	12.67	ml/mx			
	V-10142	75	DF	0.2	lb ai/a	8-10	lf	B	3.239	g/mx			
10	Roundup WeatherMax	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	110	204	306
	Roundup WeatherMax	4.5	L	16	oz/a	8-10	lf	B	12.67	ml/mx			
	V-10142	75	DF	0.3	lb ai/a	8-10	lf	B	4.858	g/mx			
11	Roundup WeatherMax	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	111	205	307
	Roundup WeatherMax	4.5	L	16	oz/a	8-10	lf	B	12.67	ml/mx			
	V-10142	75	DF	0.4	lb ai/a	8-10	lf	B	6.477	g/mx			
12	Roundup WeatherMax	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	112	209	312
	Roundup WeatherMax	4.5	L	16	oz/a	8-10	lf	B	12.67	ml/mx			
	V-10169	0.41	EC	0.009	lb ai/a	8-10	lf	B	2.225	ml/mx			
13	Roundup WeatherMax	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	113	201	309
	Roundup WeatherMax	4.5	L	16	oz/a	8-10	lf	B	12.67	ml/mx			
	V-10169	0.41	EC	0.018	lb ai/a	8-10	lf	B	4.449	ml/mx			
14	Roundup WeatherMax	4.5	L	16	oz/a	2-4	leaf	A	12.67	ml/mx	114	206	311
	Roundup WeatherMax	4.5	L	16	oz/a	8-10	lf	B	12.67	ml/mx			
	V-10169	0.41	EC	0.027	lb ai/a	8-10	lf	B	6.674	ml/mx			

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Lot Code
300.887	ml	Roundup WeatherMax 4.5 L	
36.434	g	V-10142 75 DF	
33.368	ml	V-10169 0.41 EC	

* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1.5 liters (mix size basis).

* Product amount calculations increased 25 % for overage adjustment.

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Trial ID: C43-05

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Location: Sunbelt Expo

Investigator: Stanley Culpepper

Trial Comments

OBJECTIVE: Determine cotton response to glyphosate mixed with V-10142 or V-10169 and applied topically.

VISUAL COTTON RESPONSE:

1. When applied to 3 leaf cotton, glyphosate alone caused little injury. Mixing V-10142 with glyphosate increased injury to at least 30% and severe injury was still detectable at 53 days after application. Applying this mixture to 11 leaf cotton also caused at least 35% injury by 12 d after application.
2. Any mixture with V-10169, regardless of rate, destroyed the cotton crop. A few plants that were 14 inches at time of application did survive, although barley.

WEED RESPONSE:

1. Weed response to treatments was complicated as the cotton crop was injured often eliminating crop competition.

Large Crabgrass:

1. No antagonism was noted and mixtures provided excellent initial control.
2. At 32 d after the first application to small cotton, crabgrass control was greater in plots treated with either 10142 or 10169 plus glyphosate than with glyphosate alone, suggesting these herbicides suppressed continual crabgrass emergence.

Doveweed:

1. The majority of this weeds population had just began to emerge at the second POST application and was very small.
2. The experimental design was flawed because there was not a treatment with two POST glyphosate only applications. However, the results did suggest that V-10169 at higher rates may have some activity.

Pitted Morningglory:

1. At 12 to 15 d after each application, mixing 10142 (0.3 to 0.4 lb) or 10169 (0.018 to 0.027 lb) with glyphosate improved morningglory control.

Residual activity from 10142 at all rates and 10169 at the higher rates was noted.

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Weed Code			GOSHI	GOSHI	GOSHI	GOSHI	DIGSA	DIGSA	MUDNU
Crop Code			injury	injury	injury	injury	control	control	control
Rating Data Type			percent	percent	percent	percent	percent	percent	percent
Rating Unit									
Rating Date			Jun-02-05	Jun-07-05	Jun-20-05	Jun-27-05	Jun-07-05	Jun-27-05	Jun-27-05
Trt-Eval Interval			8 DA-A	13 DA-A	26 DA-A	33 DA-A	13 DA-A	33 DA-A	33 DA-A
Trt No.	Treatment Name	Rate	1	2	3	4	5	6	7
		Unit							
1	None		0	0	0	0	0	0	0
2	Roundup WeatherMax	16 oz/a	3	0	0	0	77	25	25
3	Roundup WeatherMax V-10142	16 oz/a 0.2 lb ai/a	33	40	43	40	85	73	25
4	Roundup WeatherMax V-10142	16 oz/a 0.3 lb ai/a	38	37	47	38	82	70	23
5	Roundup WeatherMax V-10142	16 oz/a 0.4 lb ai/a	45	42	52	42	80	75	30
6	Roundup WeatherMax V-10169	16 oz/a 0.009 lb ai/a	100	100	100	100	73	37	20
7	Roundup WeatherMax V-10169	16 oz/a 0.018 lb ai/a	100	100	100	100	85	52	22
8	Roundup WeatherMax V-10169	16 oz/a 0.027 lb ai/a	100	100	100	100	78	83	23
9	Roundup WeatherMax Roundup WeatherMax V-10142	16 oz/a 16 oz/a 0.2 lb ai/a	0	0	17	35	67	99	86
10	Roundup WeatherMax Roundup WeatherMax V-10142	16 oz/a 16 oz/a 0.3 lb ai/a	0	0	12	38	73	99	83
11	Roundup WeatherMax Roundup WeatherMax V-10142	16 oz/a 16 oz/a 0.4 lb ai/a	0	0	12	40	70	99	85
12	Roundup WeatherMax Roundup WeatherMax V-10169	16 oz/a 16 oz/a 0.009 lb ai/a	0	0	100	99	73	99	84
13	Roundup WeatherMax Roundup WeatherMax V-10169	16 oz/a 16 oz/a 0.018 lb ai/a	0	0	100	99	71	99	96
14	Roundup WeatherMax Roundup WeatherMax V-10169	16 oz/a 16 oz/a 0.027 lb ai/a	0	0	100	99	76	99	93
LSD (P=.05)			6.8	5.2	9.3	6.5	12.2	17.3	9.7
Standard Deviation			4.0	3.1	5.5	3.9	7.3	10.3	5.8
CV			13.45	10.3	9.93	6.57	10.29	14.34	11.64

Means followed by same letter do not significantly differ (P=.05, LSD)

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Weed Code			IPOLA	IPOLA
Crop Code				
Rating Data Type			control	control
Rating Unit			percent	percent
Rating Date			Jun-07-05	Jun-27-05
Trt-Eval Interval			13 DA-A	33 DA-A
Trt No.	Treatment Name	Rate Rate Unit	8	9
1	None		0	0
2	Roundup WeatherMax	16 oz/a	77	25
3	Roundup WeatherMax V-10142	16 oz/a 0.2 lb ai/a	80	95
4	Roundup WeatherMax V-10142	16 oz/a 0.3 lb ai/a	92	96
5	Roundup WeatherMax V-10142	16 oz/a 0.4 lb ai/a	93	98
6	Roundup WeatherMax V-10169	16 oz/a 0.009 lb ai/a	88	37
7	Roundup WeatherMax V-10169	16 oz/a 0.018 lb ai/a	93	75
8	Roundup WeatherMax V-10169	16 oz/a 0.027 lb ai/a	95	82
9	Roundup WeatherMax Roundup WeatherMax V-10142	16 oz/a 16 oz/a 0.2 lb ai/a	78	99
10	Roundup WeatherMax Roundup WeatherMax V-10142	16 oz/a 16 oz/a 0.3 lb ai/a	77	99
11	Roundup WeatherMax Roundup WeatherMax V-10142	16 oz/a 16 oz/a 0.4 lb ai/a	77	99
12	Roundup WeatherMax Roundup WeatherMax V-10169	16 oz/a 16 oz/a 0.009 lb ai/a	79	99
13	Roundup WeatherMax Roundup WeatherMax V-10169	16 oz/a 16 oz/a 0.018 lb ai/a	81	99
14	Roundup WeatherMax Roundup WeatherMax V-10169	16 oz/a 16 oz/a 0.027 lb ai/a	77	99
LSD (P=.05)			11.9	17.3
Standard Deviation			7.1	10.3
CV			9.16	13.13

Means followed by same letter do not significantly differ (P=.05, LSD)

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MAINTENANCE

Field Prep./Maintenance:

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

SOIL DESCRIPTION

% Sand: 88	% OM: 1.2	Texture: loamy sand
% Silt: 12	pH: 6	Soil Name: _____
% Clay: 0	CEC: _____	Fert. Level: _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

No.	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: wet

Closest Weather Station: _____ Distance: _____ Unit: ____

APPLICATION DESCRIPTION

	A	B
Application Date:	May-25-05	Jun-15-05
Time of Day:	9 am	5 pm
Application Method:	broadcast	broadcast
Application Timing:	2-4 leaf	8-10 lf
Applic. Placement:	overtop	overtop
Air Temp., Unit:	76 F	92 F
% Relative Humidity:	48	56
Wind Velocity, Unit:	3 mph	3 mph
Dew Presence (Y/N):	n	n
Water Hardness:		
Soil Temp., Unit:	78 F	89 F
Soil Moisture:	fair	wet
% Cloud Cover:	0	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	GOSHI 2-4 leaf	GOSHI 10-12 lf
Stage Scale:	2-3 leaf	10 leaf
Height, Unit:	3.5 inch	14 inch

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WEED STAGE AT EACH APPLICATION

	A	B
Weed 1 Code, Stage:	DIGSA 2-4 leaf	DIGSA 8-10lf
Stage Scale:	<1.5 inch	< 4 inch
Density, Unit:	26 ydsq	14 ydsq
Weed 2 Code, Stage:	MUDNU 2-4 leaf	MUDNU 8-10 lf
Stage Scale:	not up	<0.25 in
Density, Unit:	0 ydsq	18 ydsq
Weed 3 Code, Stage:	IPOLA 2-4 leaf	IPOLA 8-10lf
Stage Scale:	<1.5 inch	< 4 inch
Density, Unit:	6 ydsq	14 ydsq

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	backpack	backpack
Operating Pressure:	23	23
Nozzle Type:	flat fan	flat fan
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	18 inch	18 inch
Nozzles/Row:	2	2
Band Width, Unit:		
Boom Length, Unit:	4.5 feet	4.5 feet
Boom Height, Unit:	15 inch	15 inch
Ground Speed, Unit:	3 mph	3 mph
Incorporation Equip.:		
Hours to Incorp.:		
Incorp. Depth, Unit:		
Carrier:	water	water
Spray Volume, Unit:	14.8 GPA	14.8 GPA
Spray pH:		
Propellant:	CO2	CO2
Tank Mix (Y/N):	Y	Y

Trt No	Treatment Application Comment