

University of Georgia

Tomato tolerance to Matrix.

Trial ID: Veg12-03
Location: Ponder farm

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: TyTy **Trial Status:** completed
State/Prov.: Ga **Trial Reliability:** excellent
Postal Code: 31794 **Initiation Date:** Feb-20-03
Country: 31794

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	.		

Crop 1: LYPES tomato **Variety:** Amelia
Planting Date: Mar-18-03 **Planting Method:** transplant
Rate: 1 per foot
Row Spacing: 6 feet **Spacing Within Row:** 12 inch **Seed Bed:** bedded
Soil Temperature: 79 F **Soil Moisture:** great

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 30 FT **Reps:** 4
Site Type: research station
Tillage Type: plastic **Study Design:** RANDOMIZED COMPLETE BLOCK

SOIL DESCRIPTION

% Sand: 94 **% OM:** 1.1 **Texture:** sand
% Silt: 2 **pH:** 5.9 **Soil Name:** Tifton sandy loam
% Clay: 4

Overall Moisture Conditions: drip

APPLICATION DESCRIPTION

	A	B
Application Date:	Feb-20-03	Apr-12-03
Time of Day:	2:00pm	10:00am
Application Method:	Broadcast	Broadcast
Application Timing:	PRE	POST
Applic. Placement:	underplas	overtop
Air Temp., Unit:	68 F	67 F
% Relative Humidity:	46	49
Wind Velocity, Unit:	2 mph	1 mph
Dew Presence (Y/N):	N	N
Soil Temp., Unit:	62 F	76 F
Soil Moisture:	moist	mois
% Cloud Cover:	100	0

CROP STAGE AT EACH APPLICATION

	A	B
Crop 1 Code, Stage:	LYPES PRE	LYPES POST
Stage Scale:	.	8 leaf
Height, Unit:	0. .	9 inch

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WEED STAGE AT EACH APPLICATION

	A	B
	.	
Stage Scale:	.	
Density, Unit:	.	.

APPLICATION EQUIPMENT

	A	B
Appl. Equipment:	superbedd	backpack
Operating Pressure:	24	22
Nozzle Type:	flat fan	flat fan
Nozzle Size:	11002	11002
Nozzle Spacing, Unit:	12 inch	18 inch
Nozzles/Row:	5	4
Boom Length, Unit:	6 feet	4.5 feet
Boom Height, Unit:	12 inch	15 inch
Ground Speed, Unit:	2.5 mph	3 mph
Carrier:	water	water
Spray Volume, Unit:	25 GPA	14.8 GPA
Propellant:	CO2	CO2
Tank Mix (Y/N):	Y	Y

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Weed Code		LYPES	LYPES	LYPES	LYPES	Plant1	Plant2	Plant3	Plant4
Crop Code		stunting	stunting	stunting	injury	LYPES	LYPES	LYPES	LYPES
Rating Data Type		percent	percent	percent	percent	height	height	height	height
Rating Unit						cm	cm	cm	cm
Rating Date		Apr-21-03	May-02-03	Jun-10-03	May-26-03	Apr-20-03	Apr-20-03	Apr-20-03	Apr-20-03
Trt-Eval Interval		60 DA-A	71 DA-A	71 DA-A		42 DA-A	42 DA-A	42 DA-A	42 DA-A
ARM Action Codes									
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit
		1	2	3	4	5	6	7	8
1	non-treated								
		0.0	0.0	0.0	0.0	10.5	12.5	12.9	12.6
2	Matrix	2 oz/a							
		0.0	0.0	0.0	0.0	10.5	12.9	12.4	13.0
3	Matrix	4 oz/a							
		0.0	0.0	0.0	0.0	10.5	13.4	13.0	12.6
4	Matrix	2 oz/a							
	Sandea	0.75 oz/a							
		2.5	0.0	0.0	0.0	10.5	13.8	13.6	12.5
5	Matrix	2 oz/a							
	NIS	0.25 % v/v							
		0.0	0.0	0.0	0.0	10.5	14.0	14.0	14.1
6	Matrix	4 oz/a							
	NIS	0.25 % v/v							
		0.0	0.0	0.0	0.0	10.5	14.8	14.0	14.1
7	Matrix	2 oz/a							
	Sandea	0.75 oz/a							
	NIS	0.25 % v/v							
		0.0	3.8	3.8	2.5	10.5	13.3	14.0	15.3
LSD (P=.05)		2.81	4.21	4.21	2.81	0.00	2.57	2.21	1.77
Standard Deviation		1.89	2.83	2.83	1.89	0.00	1.73	1.49	1.19
CV		529.15	529.15	529.15	529.15	0.0	12.82	11.09	8.87
Bartlett's X2		0.0	0.0	0.0	0.0	0.0	12.335	2.597	6.501
P(Bartlett's X2)		0.055	0.857	0.369

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

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Weed Code	Plant5 LYPES height cm	Plant6 LYPES height cm	Plant7 LYPES height cm	Average LYPES height cm	LYPES Jumbo number	LYPES Jumbo wt	LYPES large number	LYPES large wt			
Crop Code	Apr-20-03	Apr-20-03	Apr-20-03	Apr-20-03	Jun-23-03	Jun-23-03	Jun-23-03	Jun-23-03			
Rating Data Type	42 DA-A	42 DA-A	42 DA-A								
Rating Unit											
Rating Date											
Trt-Eval Interval											
ARM Action Codes				T1							
Trt No.	Treatment Name	Rate	Unit	9	10	11	12	13	14	15	16
1	non-treated			14.6	14.6	14.1	13.1	63.0	38.7	20.0	7.1
2	Matrix	2 oz/a		13.1	14.3	13.4	12.8	68.3	35.5	23.0	7.7
3	Matrix	4 oz/a		13.9	13.0	13.5	12.8	63.3	36.9	21.0	7.2
4	Matrix Sanda	2 oz/a 0.75 oz/a		14.0	13.0	13.8	13.0	77.7	47.2	23.7	8.1
5	Matrix NIS	2 oz/a 0.25 % v/v		13.8	14.3	14.3	13.6	68.0	39.5	20.7	7.1
6	Matrix NIS	4 oz/a 0.25 % v/v		14.3	14.9	14.8	13.9	75.0	43.8	16.0	5.3
7	Matrix Sanda NIS	2 oz/a 0.75 oz/a 0.25 % v/v		15.0	14.0	14.5	13.8	75.0	44.2	26.7	9.5
LSD (P=.05)				2.33	2.59	2.43	1.54	15.82	11.97	9.45	3.40
Standard Deviation				1.57	1.75	1.64	1.04	8.89	6.73	5.31	1.91
CV				11.16	12.47	11.66	7.82	12.7	16.48	24.61	25.72
Bartlett's X2				6.415	11.283	2.919	8.856	9.663	12.344	4.571	3.626
P(Bartlett's X2)				0.378	0.08	0.819	0.182	0.14	0.055	0.60	0.727

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

Column 12: T1 = @AVG([5],[11])

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Weed Code								
Crop Code								
Rating Data Type	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES		
Rating Unit	medium	medium	small	small	cul	cul		
Rating Date	number	wt	number	wt	number	wt		
Trt-Eval Interval	Jun-23-03	Jun-23-03	Jun-23-03	Jun-23-03	Jun-23-03	Jun-23-03		
ARM Action Codes								
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate		
		Unit						
1	non-treated		23.0	5.7	45.7	6.2	23.3	14.6
2	Matrix	2 oz/a	23.3	5.8	36.3	4.5	18.3	11.3
3	Matrix	4 oz/a	20.7	5.0	30.0	4.1	22.0	12.9
4	Matrix Sandea	2 oz/a 0.75 oz/a	18.7	4.7	26.3	3.5	20.7	13.0
5	Matrix NIS	2 oz/a 0.25 % v/v	16.0	3.9	30.0	4.3	21.7	14.0
6	Matrix NIS	4 oz/a 0.25 % v/v	19.7	4.8	23.0	3.3	21.7	14.3
7	Matrix Sandea NIS	2 oz/a 0.75 oz/a 0.25 % v/v	17.3	4.7	20.3	3.0	23.3	13.5
LSD (P=.05)			14.13	3.33	30.58	4.26	8.16	7.04
Standard Deviation			7.94	1.87	17.19	2.40	4.59	3.96
CV			40.08	37.99	56.84	58.25	21.27	29.58
Bartlett's X2			6.742	7.903	3.784	4.723	7.229	4.759
P(Bartlett's X2)			0.345	0.245	0.706	0.58	0.30	0.575

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

Trial Comments

GENERAL COMMENTS: Entire trial was fumigated with Telone C35. Trial was maintained weed free.

OBJECTIVE: Determine tomato tolerance to Matrix applied POST and PRE under plastic.

RESULTS:

Visual Injury:

1) No treatment caused injury of tomato throughout the trial.

Plant heights:

1) Averaged over seven plants per plot, herbicide treatments did not impact plant height at 8 days after POST and 4 wk after planting.

Yields (a once over harvest was conducted in an attempt to lower variability):

1) Herbicide treatments did not impact the number or weight of Jumbo, large, medium, small, or cull fruit.

CONCLUSIONS:

- 1) The only weakness of the trial was the delay in planting for 4 weeks after applying PRE's and laying plastic due to rainfall.
- 2) Tomato tolerance to Matrix or Matrix plus Sandea combinations was excellent.