

University of Georgia

Watermelon tolerance to Sandea applied PRE under plastic.

Trial ID: Veg18-03
 Location: RDC

Study Dir.:
 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: Tifton	Trial Status: completed
State/Prov.: Ga	Trial Reliability: good
Postal Code: 31794	Initiation Date: Apr-10-03
Country: USA	

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

Crop 1: CITLA watermelon	Variety: AU producer
Planting Date: Apr-10-03	Planting Method: transplant
Rate: 1 4 feet	Depth: 1 in
Row Spacing: 6 feet	Seed Bed: plastic
Soil Temperature: 0. .	Soil Moisture: drip

SITE AND DESIGN

Plot Width, Unit: 6 FT	Plot Length, Unit: 40 FT	Reps: 4
Site Type: research station		
Tillage Type: plastic	Study Design: RANDOMIZED COMPLETE BLOCK	

SOIL DESCRIPTION

% Sand: 88	% OM: 1.1	Texture: sand
% Silt: 10	pH: 5.9	Soil Name: Tifton sandy loam
% Clay: 2		

APPLICATION DESCRIPTION

	A
Application Date:	Mar-26-03
Time of Day:	10:00am
Application Method:	Broadcast
Application Timing:	PRE
Applic. Placement:	under pla
Air Temp., Unit:	78 F
% Relative Humidity:	49
Wind Velocity, Unit:	2 mph
Dew Presence (Y/N):	N
Soil Temp., Unit:	74 F
Soil Moisture:	moist
% Cloud Cover:	20

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	CITLA PRE
Stage Scale:	.
Height, Unit:	0. .

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APPLICATION EQUIPMENT

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

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Weed Code					Plant 1	Plant 2	Plant 3	Plant 4			
Crop Code					watermel	watermel	watermel	watermel			
Rating Data Type					vine length	vine length	vine length	vine length			
Rating Unit					cm	cm	cm	cm			
Rating Date					May-06-03	May-06-03	May-06-03	May-06-03			
Trt-Eval Interval					41 DA-A	41 DA-A	41 DA-A	41 DA-A			
ARM Action Codes											
Trt No.	Treatment Name	Rate	Unit								
				1	2	3	4	5			
1	Non-treated			0.0	0.0	0.0	0.0	79.0	81.5	75.8	83.0
2	Sandea	0.75	oz/a	3.8	0.0	0.0	0.0	81.8	73.5	81.8	68.5
3	Sandea	1.5	oz/a	23.3	16.5	10.0	0.0	70.5	58.8	66.0	51.8
LSD (P=.05)				6.43	1.73	0.82	0.00	16.58	16.84	21.86	22.80
Standard Deviation				3.72	1.00	0.47	0.00	9.58	9.73	12.63	13.18
CV				41.28	18.18	14.14	0.0	12.43	13.66	16.96	19.45
Bartlett's X2				0.083	0.0	0.0	0.0	1.012	1.293	0.454	9.712
P(Bartlett's X2)				0.774	.	.	.	0.603	0.524	0.797	0.008*

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

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Weed Code	Plant 5	Plant 6	Plant 7	Plant 8	Average	in.melon	in.melon	in.melon
Crop Code	watermel	watermel	watermel	watermel	CITLA	CITLA	CITLA	CITLA
Rating Data Type	vine length	vine length	vine length	vine length	vine length	<10 lbs	<10 lbs	<10 lbs
Rating Unit	cm	cm	cm	cm	cm	wt	wt	wt
Rating Date	May-06-03	May-06-03	May-06-03	May-06-03	May-06-03	Jul-02-03	Jul-02-03	Jul-02-03
Trt-Eval Interval	41 DA-A	41 DA-A	41 DA-A	41 DA-A	41 DA-A	98 DA-A	98 DA-A	98 DA-A
ARM Action Codes					T1			
Trt Treatment								
Rate								
No. Name	Rate	Unit						
9	10	11	12	13	15	16	17	
1 Non-treated	77.3	66.3	79.3	78.0	77.5	5.5	3.8	4.1
2 Sandea 0.75 oz/a	70.8	71.5	54.5	81.8	73.0	4.8	0.0	0.0
3 Sandea 1.5 oz/a	66.8	77.0	68.5	55.3	64.3	3.4	2.1	1.1
LSD (P=.05)	16.91	34.36	24.24	16.79	10.02	2.89	6.98	5.95
Standard Deviation	9.78	19.86	14.01	9.70	5.79	1.67	4.03	3.44
CV	13.66	27.74	20.78	13.54	8.08	36.77	206.87	198.25
Bartlett's X2	0.133	7.695	2.726	5.178	0.339	0.438	0.018	1.7
P(Bartlett's X2)	0.936	0.021*	0.256	0.075	0.844	0.803	0.894	0.192

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

Column 13: T1 = @AVG([C5].[C12])

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Weed Code	total CITLA	total CITLA	in.melon CITLA	in.melon CITLA	in.melon CITLA	in.melon CITLA	in.melon CITLA	in.melon CITLA	in.melon CITLA	in.melon CITLA		
Crop Code	<10lbs	<10lbs	10-20lbs	10-20lbs	10-20lbs	10-20lbs	10-20lbs	10-20lbs	10-20lbs	10-20lbs		
Rating Data Type	number	wt/lbs	wt	wt	wt	wt	wt	wt	wt	wt		
Rating Unit	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03		
Rating Date	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A		
Trt-Eval Interval												
ARM Action Codes												
Trt No.	Treatment Name	Rate	Unit	18	19	21	22	23	24	25	26	27
1	Non-treated			1.8	13.3	15.6	14.1	15.4	15.5	8.3	7.8	7.8
2	Sandea	0.75	oz/a	0.8	4.8	13.1	13.3	11.7	12.7	10.2	7.3	3.1
3	Sandea	1.5	oz/a	2.3	6.6	15.1	17.1	16.3	8.7	8.3	8.4	4.4
LSD (P=.05)				1.29	13.45	10.07	8.54	10.28	12.77	17.30	17.13	15.84
Standard Deviation				0.75	7.77	5.82	4.94	5.94	7.38	10.00	9.90	9.15
CV				47.08	94.43	39.95	33.35	41.12	60.16	112.12	127.16	180.66
Bartlett's X2				3.121	4.161	5.579	8.791	4.129	2.589	0.315	0.063	0.507
P(Bartlett's X2)				0.21	0.125	0.061	0.012*	0.127	0.274	0.854	0.969	0.776

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

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Weed Code	in.melon CITLA	in.melon CITLA	total CITLA	total CITLA	in.melon CITLA	in.melon CITLA	in.melon CITLA	in.melon CITLA	in.melon CITLA
Crop Code	10-20lbs	10-20lbs	10-20lbs	10-20lbs	>20lbs	>20lbs	>20lbs	>20lbs	>20lbs
Rating Data Type	wt	wt	number	wt/lbs	wt	wt	wt	wt	wt
Rating Unit	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03
Rating Date	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A
Trt-Eval Interval									
ARM Action Codes									
Trt No.	28	29	30	31	33	34	35	36	37
Treatment Name									
Rate									
Unit									
1 Non-treated	0.0	0.0	6.0	84.2	20.0	19.7	18.6	17.1	5.8
2 Sandea 0.75 oz/a	4.0	0.0	5.0	75.3	25.3	17.0	16.9	18.1	12.9
3 Sandea 1.5 oz/a	4.7	4.8	5.5	87.5	23.7	16.6	7.5	5.6	7.1
LSD (P=.05)	13.24	9.49	5.50	81.33	14.06	20.46	15.86	13.48	24.92
Standard Deviation	7.65	5.48	3.18	47.01	8.13	11.82	9.16	7.79	14.40
CV	265.28	346.41	57.81	57.1	35.39	66.56	64.08	57.36	167.82
Bartlett's X2	0.085	0.0	0.628	1.929	9.16	0.12	0.214	0.05	0.195
P(Bartlett's X2)	0.77	.	0.731	0.381	0.01*	0.942	0.899	0.975	0.907

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

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Weed Code	in.melon	in.melon	in.melon	in.melon	in.melon	total	total	TOTAL	TOTAL	
Crop Code	CITLA	CITLA	CITLA	CITLA	CITLA	CITLA	CITLA	CITLA	CITLA	
Rating Data Type	>20lbs	>20lbs	>20lbs	>20lbs	>20lbs	>20lbs	>20lbs	all	all	
Rating Unit	wt	wt	wt	wt	wt	number	wt/lbs	number	wt/lbs	
Rating Date	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	Jul-02-03	
Trt-Eval Interval	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	98 DA-A	
ARM Action Codes							T2		T3	
Trt Treatment	Rate									
No. Name	Rate Unit	38	39	40	41	42	43	44	46	48
1 Non-treated		0.0	0.0	0.0	0.0	0.0	3.3	81.1	11.0	178.6
2 Sandea	0.75 oz/a	6.5	5.7	6.7	8.0	5.1	5.0	121.9	10.8	202.0
3 Sandea	1.5 oz/a	5.4	0.0	0.0	0.0	0.0	2.8	65.8	10.5	159.9
LSD (P=.05)		11.98	11.29	13.29	15.88	10.09	3.38	78.14	4.29	60.90
Standard Deviation		6.92	6.52	7.68	9.18	5.83	1.95	45.16	2.48	35.20
CV		175.23	346.41	346.41	346.41	346.41	53.2	50.41	23.05	19.54
Bartlett's X2		0.089	0.0	0.0	0.0	0.0	1.073	1.182	7.499	0.09
P(Bartlett's X2)		0.765	0.585	0.554	0.024*	0.956

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

Column 41: T2 = [C33]+[C34]+[C35]+[C36]+[C37]+[C38]+[C39]+[C40]+[C41]+[C42]

Column 43: T3 = [C19]+[C31]+[C44]

Trial Comments

OBJECTIVE: Determine potential for applying Sandea under plastic for watermelon transplant production. Methyl bromide was applied over entire trial area to remove other pest from impacting the trial. Bromide was applied and plastic was laid on March 26. A once over harvest was conducted to try to reduce variability. The thought was if the herbicide stunted plant growth an increase of smaller fruit would be noted.

RESULTS:

Visual injury:

- 1) Sandea at 0.75 oz/A did not visually stunt melons.
- 2) Sandea at 1.5 oz/A stunted melons 23 percent 3 wk after transplant. Stunting disappeared over time.

Melon vine lengths:

- 1) Compared to the non-treated control, Sandea at 1.5 oz/A reducedvine growth by 18% at 4 WAT.
- 2) Vine lenth from the non-treated and the 0.75 oz rate of Sandea were similar.

Yields:

- 1) The number and weight of fruit less than 10lbs, between 10 and 20 lbs, and greater than 20 lbs were not affected by treatments.
- 2) The total number and weight of fruit harvested were not affected.

CONCLUSION:

- 1) Sandea at the labeled use rate did not negatively impact melon growth or production in this trial.