

University of Georgia

Tomato and cantaloupe response to simulated drift rates of 2,4-D, DHT-014, and triclopyr.

Trial ID: Veg20-09
Location: Ponder Farm

Study Director: Jill Chafin
Investigator: Stanley Culpepper

Use 1 liters(s) per treatment mixture to spray 14.8 gal/ac
Plots: 18 by 15 feet

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Unit	Growth Stage	Appl Code	Amt Product to Measure	Plot No.	By Rep	Rep
									1	2	3
1	2,4-D	3.8	L	0.015	lb ai/a	POST	A	0.2667 ml/mx	101	204	307
2	2,4-D	3.8	L	0.005	lb ai/a	POST	A	.0889 ml/mx	102	207	305
3	Remedy	4	L	0.015	lb ai/a	POST	A	0.2534 ml/mx	103	205	306
4	Remedy	4	L	0.005	lb ai/a	POST	A	.08445 ml/mx	104	201	304
5	DHT-014	2	L	0.015	lb ai/a	POST	A	0.5067 ml/mx	105	202	303
6	DHT-014	2	L	0.005	lb ai/a	POST	A	0.1689 ml/mx	106	203	302
7	Non-treated control								107	206	301

Sort Order: Treatment

Trial Comments

OBJECTIVE: Compare relative pounds of active ingredient of 2,4-D amine, Remedy, and DHT-014 on cantaloupe and tomato.

VISUAL INJURY:

1. Greatest level of injury was noted with Remedy fb 2,4-D fb DHT-014 at the same pounds of active per acre for both cantaloupe and tomato.

YIELD:

1. Cantaloupe were harvested 8 times. Treatments did not impact yield. No impact on yield was likely a response to the crop already being "made" before treatment.
2. Tomato were striped with a one time harvest. Extra large fruit were not impacted by DHT or 2,4-D which was likely a response in time of application. Large fruit were reduced by all treatments except DHT-014 at the lowest rate.

CONCLUSIONS:

1. Cantaloupe and tomato were most sensitive to Remedy followed by 2,4-D followed by DHT-014.

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Pest Code					HAR1-4	HAR1-4	HAR 1-8	HAR 1-8
Crop Code	CUMMC	CUMMC	LYPES	LYPES	CUMMC	CUMMC	CUMMC	CUMMC
BBCH Scale	BVVT	BVVT	BVSO	BVSO	BVVT	BVVT	BVVT	BVVT
Description								
Rating Date	6/2/2009	6/11/2009	6/2/2009	6/11/2009	6/22/2009	6/22/2009	7/3/2009	7/3/2009
Rating Data Type	INJURY	INJURY	INJURY	INJURY	HARVEST	HARVEST	HARVEST	HARVEST
Rating Unit	%	%	%	%	#/plot	lb/plot	#/plot	lb/plot
Days After Last Applic.	2	11	2	11	22	22	33	33
Trt-Eval Interval	2 DA-A	11 DA-A	2 DA-A	11 DA-A	22 DA-A	22 DA-A	33 DA-A	33 DA-A
ARM Action Codes					T1	T2	T3	T4

Trt No.	Treatment Name	Rate	Unit	1	2	4	5	15	16	27	28
1	2,4-D	0.015	lb ai/a	14.0	c 7.3	b 5.0	bc 16.0	b 8.3	a 38.967	a 17.3	a 70.367
2	2,4-D	0.005	lb ai/a	0.0	d 0.0	c 0.0	c 6.3	cd 8.3	a 32.167	a 21.0	a 77.467
3	Remedy	0.015	lb ai/a	40.0	a 34.3	a 23.3	a 38.3	a 6.0	a 29.333	a 14.7	a 83.033
4	Remedy	0.005	lb ai/a	20.0	b 6.7	b 18.3	ab 9.7	bc 8.0	a 42.853	a 16.0	a 74.353
5	DHT-014	0.015	lb ai/a	0.0	d 0.0	c 0.0	c 4.3	cd 9.3	a 36.300	a 24.0	a 84.967
6	DHT-014	0.005	lb ai/a	0.0	d 0.0	c 0.0	c 1.7	cd 7.0	a 27.167	a 21.0	a 76.167
7	Non-treated control			0.0	d 0.0	c 0.0	c 0.0	d 6.0	a 22.667	a 22.0	a 77.467
LSD (P=.05)				1.16	3.65	14.35	8.14	4.74	19.7145	9.52	35.7459
Standard Deviation				0.65	2.05	8.07	4.57	2.66	11.0809	5.35	20.0916
CV				6.19	29.7	121.01	41.94	35.18	33.8	27.53	25.86
Bartlett's X2				0.0	5.566	7.015	3.495	10.885	8.871	5.465	4.427
P(Bartlett's X2)				.	0.062	0.03*	0.624	0.054	0.181	0.486	0.619
Replicate F				1.000	0.894	1.171	0.248	1.470	2.796	2.936	3.750
Replicate Prob(F)				0.3966	0.4345	0.3432	0.7841	0.2686	0.1008	0.0916	0.0543
Treatment F				1649.334	112.125	4.567	25.060	0.685	1.214	1.245	0.184
Treatment Prob(F)				0.0001	0.0001	0.0122	0.0001	0.6660	0.3635	0.3502	0.9757

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

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

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Pest Code									
Crop Code	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES
BBCH Scale	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO
Description	XL	XL	L	L	M	M	S	S	S
Rating Date	7/7/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009	7/7/2009
Rating Data Type	HARVEST	HARVEST	HARVEST	HARVEST	HARVEST	HARVEST	HARVEST	HARVEST	HARVEST
Rating Unit	#/plot	lb/plot	#/plot	lb/plot	#/plot	lb/plot	#/plot	lb/plot	lb/plot
Days After Last Applic.	37	37	37	37	37	37	37	37	37
Trt-Eval Interval	37 DA-A	37 DA-A	37 DA-A	37 DA-A	37 DA-A	37 DA-A	37 DA-A	37 DA-A	37 DA-A
ARM Action Codes									

Trt No.	Treatment Name	Rate	Unit	30	31	32	33	34	35	36	37								
1	2,4-D	0.015	lb ai/a	58.0	ab	37.97	ab	6.3	c	2.10	c	5.3	bc	1.40	bc	6.3	a	1.10	a
2	2,4-D	0.005	lb ai/a	52.0	ab	30.13	bc	13.3	b	4.97	b	9.7	abc	2.50	abc	9.3	a	1.60	a
3	Remedy	0.015	lb ai/a	3.3	d	1.67	e	1.0	d	0.60	c	1.3	c	0.33	c	0.7	a	0.13	a
4	Remedy	0.005	lb ai/a	21.7	c	11.73	d	12.3	b	4.23	b	13.0	ab	3.20	ab	8.7	a	1.43	a
5	DHT-014	0.015	lb ai/a	65.3	a	39.97	a	14.3	b	5.23	b	11.0	abc	3.03	abc	9.0	a	1.50	a
6	DHT-014	0.005	lb ai/a	48.0	ab	26.13	c	23.0	a	8.00	a	17.3	a	4.77	a	11.7	a	1.83	a
7	Non-treated control			43.0	b	23.87	c	23.3	a	8.17	a	19.0	a	4.77	a	10.3	a	1.67	a
LSD (P=.05)				18.02		9.232		4.95		2.008		11.06		2.712		7.92		1.322	
Standard Deviation				10.13		5.189		2.78		1.129		6.22		1.524		4.45		0.743	
CV				24.34		21.18		20.8		23.73		56.76		53.35		55.67		56.13	
Bartlett's X2				9.499		11.806		4.268		3.881		7.745		6.461		6.742		7.814	
P(Bartlett's X2)				0.147		0.066		0.64		0.693		0.257		0.374		0.345		0.252	
Replicate F				6.487		8.398		0.670		0.385		0.064		0.019		0.202		0.363	
Replicate Prob(F)				0.0123		0.0052		0.5298		0.6888		0.9382		0.9812		0.8201		0.7029	
Treatment F				13.866		21.166		25.596		18.459		3.046		3.457		1.983		1.778	
Treatment Prob(F)				0.0001		0.0001		0.0001		0.0001		0.0476		0.0321		0.1473		0.1865	

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Study Director: Jill Chafin
Investigator: Stanley Culpepper

General Trial Information

Study Director: Jill Chafin	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: Ty Ty	Trial Status: Completed
State/Prov.: Georgia	Trial Reliability: good
Postal Code: 31795	Initiation Date: 5/31/2009
Country: USA	
Directions:	

Objectives:

Conclusions:

Crop Description

Crop 1: CUMMC Cucumis melo cantaloupensis	Cantaloup melon
BBCH Scale: BVVT	Planting Date: 3/10/2009
Planting Method: TRANSPLANT-HAND	Rate, Unit: 1 2 FEET
Depth, Unit: 2 IN	
Row Spacing, Unit: 6 FT	Spacing Within Row, Unit: 24 IN
Seed Bed: RAISED, MULCH	

Crop 2: LYPES Lycopersicon esculentum	Tomato
BBCH Scale: BVSO	Planting Date: 3/10/2009
Planting Method: TRANSPLANT-HAND	Rate, Unit: 1 2 FEET
Depth, Unit: 2 IN	
Row Spacing, Unit: 6 FT	Spacing Within Row, Unit: 24 IN
Seed Bed: RAISED, MULCH	

Site and Design

Plot Width, Unit: 18 FT	Site Type: PONDER FARM
Plot Length, Unit: 15 FT	Tillage Type: PLASTICULTURE
Replications: 3	Study Design: Randomized Complete Block

Trial Initiation Comments:

Field Prep./Maintenance:

Soil Description

% Sand: 90	% OM: 0.8	
% Silt: 5	pH: 6.5	Soil Name: TIFTON SANDY LOAM
% Clay: 5	CEC: 400	

Moisture Conditions

Overall Moisture Conditions: DRIP IRRIGATION	
Closest Weather Station: www.griffin.uga.edu/aemn/	Distance: 200 Unit: yd

Application Description

Application Date:	5/31/2009
Time of Day:	7:00 PM
Application Method:	BROADCAST
Application Timing:	POST
Application Placement:	OVERTOP
Applied By:	Culpepper
Air Temperature, Unit:	92 F
% Relative Humidity:	50
Wind Velocity, Unit:	0 MPH
Dew Presence (Y/N):	N
Soil Temperature, Unit:	94 F
Soil Moisture:	MOIST
% Cloud Cover:	0

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Crop Stage At Each Application

A

Crop 1 Code, BBCH Scale: CUMMC BVVT
 Stage Scale Used: BBCH
 Stage Majority, Percent: 5ftrunne 100
 Stage Minimum, Percent: 5ftrunne 100
 Stage Maximum, Percent: 5ftrunne 100
 Diameter, Unit: 5 ft
 Height, Unit: 0. .
 Height Minimum, Maximum: 5 5
 Crop 2 Code, BBCH Scale: LYPES BVSO
 Stage Scale Used: BBCH
 Stage Majority, Percent: 20 inch 100
 Stage Minimum, Percent: 20 inch 100
 Stage Maximum, Percent: 20 inch 100
 Height, Unit: 20 IN
 Height Minimum, Maximum: 18 22

Application Equipment

A

Appl. Equipment: BACKPACK
 Operating Pressure: 26
 Pressure Unit: PSI
 Nozzle Type: FLAT FAN
 Nozzle Spacing, Unit: 18 IN
 Nozzles/Row: 2
 Boom Length, Unit: 4.5 FT
 Boom Height, Unit: 15 IN
 Ground Speed, Unit: 3 MPH
 Carrier: H2O
 Spray Volume: 15
 Volume Unit: GAL/AC
 Propellant: CO2
 Tank Mix (Y/N): Y

Trt No Treatment Application Comment

1 APPLICATION APPLIED WHILE TOMATO FRUIT WERE QUARTER SIZE AND CANTALOUPE FRUIT WERE WEBBING.