

University of Georgia

Tomato row middle weed control with Valor.

Trial ID: Veg10-03
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:** good
Postal Code: 31794 **Initiation Date:** Mar-16-03
Country: USA

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

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	OEOLA	cutleaf eveningprimrose	
2.	COPSS	Swinecress	Coronopus sp.
3.	MOLVE	carpetweed	
4.	IAQTA	smallflower morningglory	

Crop 1: LYPES TOMATO **Variety:** Amelia
Planting Date: Mar-20-03 **Planting Method:** transplant
Rate: 1 18" **Depth:** 1.5 in
Row Spacing: 6 feet **Spacing Within Row:** 18 inch **Seed Bed:** plastic
Soil Temperature: 84 F **Soil Moisture:** drip

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 20 FT **Reps:** 5
Site Type: research station
Tillage Type: conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

SOIL DESCRIPTION

% Sand: 94 **% OM:** 1.1 **Texture:** sand
% Silt: 2 **pH:** 5.8 **Soil Name:** Tifton sandy loam
% Clay: 4

Overall Moisture Conditions: wet

APPLICATION DESCRIPTION

	A
Application Date:	Mar-16-03
Time of Day:	3:00pm
Application Method:	Broadcast
Application Timing:	PRE TRANS
Applic. Placement:	Row middl
Air Temp., Unit:	76 F
% Relative Humidity:	56
Wind Velocity, Unit:	3 mph
Dew Presence (Y/N):	N
Soil Temp., Unit:	74 F
Soil Moisture:	wet
% Cloud Cover:	40

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	LYPES prior to
Stage Scale:	planting

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WEED STAGE AT EACH APPLICATION

A	
Weed 1 Code, Stage:	OEOLA Pretrans
Stage Scale:	<0.5"
Density, Unit:	5 ydsq
Weed 2 Code, Stage:	COPSS Pretrans
Stage Scale:	<0.5"
Density, Unit:	4 ydsq
Weed 3 Code, Stage:	MOLVE Pretrans
Stage Scale:	<0.5"
Density, Unit:	2 ydsq
Weed 4 Code, Stage:	IAQTA Pretrans
Stage Scale:	<0.5"
Density, Unit:	3 ydsq

APPLICATION EQUIPMENT

A	
Appl. Equipment:	backpack
Operating Pressure:	18
Nozzle Type:	floodjet
Nozzle Size:	D2
Nozzle Spacing, Unit:	32 inch
Nozzles/Row:	1
Band Width, Unit:	32 inch
Boom Height, Unit:	15 inch
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	14.8 GPA
Propellant:	CO2
Tank Mix (Y/N):	Y

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Weed Code			LYPES	LYPES	LYPES	IAQTA	IAQTA	DTTAE	DTTAE	OEOLA	
Crop Code			injury	injury	injury	control	control	control	control	control	
Rating Data Type			percent	percent	percent	percent	percent	percent	percent	percent	
Rating Unit											
Rating Date			Mar-30-03	Apr-16-03	Apr-30-03	Apr-16-03	May-26-03	May-26-03	May-26-03	Apr-16-03	
Trt-Eval Interval			14 DA-A	31 DA-A	45 DA-A	71 DA-A	71 DA-A	71 DA-A	71 DA-A	71 DA-A	
Trt No.	Treatment Name	Rate	Unit	1	2	3	4	5	6	7	8
1	Valor	2	oz/a	0.0	0.0	0.0	96.8	94.8	90.2	88.4	92.6
	COC	1	pt/a								
2	Valor	3	oz/a	0.0	0.0	0.0	97.0	94.4	95.4	92.4	95.4
	COC	1	pt/a								
3	Valor	4	oz/a	0.0	0.0	0.0	98.8	97.4	97.8	97.2	96.2
	COC	1	pt/a								
4	Valor	3	oz/a	0.0	0.0	0.0	98.8	98.2	96.2	96.2	96.4
	Dual Magnum	1	pt/a								
	Prowl	2.4	pt/a								
	COC	1	pt/a								
5	Cobra	12	oz/a	0.0	0.0	0.0	97.2	94.6	61.8	53.0	85.0
	COC	1	pt/a								
6	Cobra	24	oz/a	0.0	0.0	0.0	93.8	90.4	83.8	79.0	85.6
	COC	1	pt/a								
7	Cobra	32	oz/a	0.0	0.0	0.0	94.0	90.8	87.6	83.8	81.0
	COC	1	pt/a								
8	Aim	1.5	oz/a	0.0	0.0	0.0	73.4	70.0	19.0	0.0	14.0
	COC	1	pt/a								
9	Aim	1.5	oz/a	0.0	0.0	0.0	96.0	92.0	55.8	49.8	95.0
	Cobra	24	oz/a								
	COC	1	pt/a								
10	Non-treated			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LSD (P=.05)			0.00	0.00	0.00	17.12	16.76	9.86	9.90	9.56
	Standard Deviation			0.00	0.00	0.00	13.39	13.11	7.71	7.75	7.48
	CV			0.0	0.0	0.0	15.83	15.94	11.22	12.11	10.09
	Bartlett's X2			0.0	0.0	0.0	106.665	70.914	14.211	24.533	13.387
	P(Bartlett's X2)			.	.	.	0.001*	0.001*	0.076	0.001*	0.099

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

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Weed Code		OEOLA	MOLVE	MOLVE
Crop Code				
Rating Data Type		control	control	control
Rating Unit		percent	percent	percent
Rating Date		May-26-03	Apr-16-03	May-26-03
Trt-Eval Interval		71 DA-A	71 DA-A	71 DA-A
Trt No.	Treatment Name	Rate	Unit	
1	Valor	2	oz/a	85.2
	COC	1	pt/a	97.8
2	Valor	3	oz/a	94.6
	COC	1	pt/a	98.2
3	Valor	4	oz/a	92.4
	COC	1	pt/a	98.8
4	Valor	3	oz/a	93.6
	Dual Magnum	1	pt/a	98.8
	Prowl	2.4	pt/a	
	COC	1	pt/a	98.2
5	Cobra	12	oz/a	70.0
	COC	1	pt/a	88.8
6	Cobra	24	oz/a	76.2
	COC	1	pt/a	89.6
7	Cobra	32	oz/a	73.0
	COC	1	pt/a	81.2
8	Aim	1.5	oz/a	8.0
	COC	1	pt/a	18.0
9	Aim	1.5	oz/a	88.4
	Cobra	24	oz/a	64.4
	COC	1	pt/a	56.4
10	Non-treated			0.0
				0.0
				0.0
LSD (P=.05)		14.28		6.12
Standard Deviation		11.17		4.79
CV		16.39		6.51
Bartlett's X2		19.184		47.456
P(Bartlett's X2)		0.014*		0.001*
				0.352

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

Trial Comments

GENERAL COMMENTS: Fumigated with 26 G of C35 on Feb 3. Laid plastic on Feb 13. Applied row middle herbicides on March 16. Planted crop on March 20.

OBJECTIVE: Evaluate Valor and Cobra for row middle weed control in tomato.

CROP TOLERANCE:

1) No injury was noted at any time throughout the study.

WEED CONTROL:

Smallflower morningglory:

1) At 4 and 9 WAT, all programs provided excellent control except for Aim applied alone. Aim provided excellent control of emerged mg but had no residual activity.

Crowfootgrass:

- 1) Valor plus COC controlled emerged plants. Plants were at most 0.5 inch in size at time of application.
- 2) Valor also provided excellent residual grass control. Although this does not consistently happen, it does occur.
- 3) Cobra at 12 and 24 oz/A were less effective than Valor. However, 32 oz/A of Cobra provided control similar to Valor at 2 oz/A at 11 WAT.
- 4) Aim provided little to no control.

Cutleaf eveningprimrose:

- 1) Systems with Valor provided excellent control.
- 2) In general, Cobra and Aim systems were less effective than Valor systems.

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Carpetweed:

- 1) Excellent control was noted with all Valor systems.
- 2) Cobra systems were less effective than Valor systems but provided fair control.
- 3) Aim systems provided poor control.

CONCLUSIONS:

- 1) Valor is an excellent option for row middle weed control in vegetables. Valor should be applied prior to transplanting the vegetable crop and when weeds are small.
- 2) Although the addition of Dual and Prowl were not beneficial in this trial, they would likely be beneficial for grass and sedge control in most fields.
- 3) Aim is a contact herbicide and repeated applications or the addition of residual herbicides will be needed.