

# University of Georgia

## First crop drip injection of DMDS, Vapam, and Eptam

Trial ID: Veg37-07  
 Location: Ponder Farm

Protocol ID:  
 Study Director: Stanley Culpepper  
 Investigator: Stanley Culpepper

Reps: 3                      Plots: 6 by 30 feet  
 Spray vol: 14.8 gal/ac      Mix size: 2 liters (min .69451)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Growth Unit	Appl Code	Amt to Measure	Product	Plot No. 1	Plot No. 2	Plot No. 3	By Rep
1	None						A			103	205	304	
2	Eptam 4 pt/A						A			101	203	305	
3	Vapam 55 GPA						A			105	202	301	
4	DMDS EC @ 53 GPA						A			102	204	303	
5	DMDS EC @ 70 GPA						A			104	201	302	

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
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\* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 2 liters (mix size basis).  
 \* Product amount calculations increased 25 % for overage adjustment.

### Trial Comments

OBJECTIVE: Determine potential for DMDS and Eptam to be effective when drip injected on 1st crop mulch.

**Eggplant Injury:**

1. Injury was detected at 9 d after planting with Vapam.
2. By 45 d after transplanting, Eptam caused 15% stunting while Vapam caused severe injury (60%).
3. No injury from DMDS was noted throughout the season.

**Eggplant heights:**

1. Eggplant heights averaged over 10 plants per plot noted 47% stunting from Vapam.
2. No other treatment reduced plant heights although there was a trend for Eptam to reduce plant heights slightly.

**Nutsedge control:**

1. Vapam provided excellent control in a 26 inch band; however, control of the shoulders did not exist. Control was similar throughout the season.
2. Eptam provided excellent control in a 12 inch band with poor control on the edges of the bed.
3. Initially, the DMDS treatments provided excellent control for 14 days but then control began falling off and was non-existent by late season.

**Yields:**

1. Eggplant were harvested 8 times.
2. When adding harvests 1 and 2, 1 through 4, or 1 through 8, the two DMDS treatments produced the greatest yield.
3. Lowest yields were produced in the Vapam plots because of significant injury.
4. Eggplant treated with Eptam likely yielded less than the DMDS systems because of minor early season stunting and lack of early season weed control.

**CONCLUSIONS:**

1. DMDS moved throughout the bed profile with one drip tape causing no crop injury but nutsedge control only lasted two weeks.
2. Eptam could not be moved throughout the bed profile.
3. Vapam could not be moved throughout the entire bed profile with a single drip tape and caused severe crop injury which was likely a response to application under 1st crop VIF mulch (ie no holes) at a very high rate.
4. Research continues to show that first crop fumigating is completely dependent on shank injection of fumigants.

# University of Georgia

**GENERAL COMMENTS:**

1. All treatments were drip injected in cooperation with Hendrix and Dale.
2. Bedtops were 32 inches across with only 1 drip take laid down the center.
3. Injected DMDS treatments over 1 hour. Irrigated 1 hr on days 2, 4, and 5 following injection.
4. Vapam and Eptam were mixed in 3 gallons of water and injected over 10 minutes followed by watering for 1 hour. Beds wer also watered for 1 hr on days 2, 4, and 5.

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Pest Code	SOLME	SOLME	SOLME	CYPRO	CYPRO	CYPRO	CYPRO	CYPRO
Crop Code	BVSO	BVSO	BVSO					
BBCH Scale								
Rating Date	Aug-24-07	Sep-07-07	Oct-01-07	Aug-05-07	Aug-10-07	Aug-24-07	Sep-07-07	Oct-01-07
Rating Data Type	injury	injury	injury	control	control	control	control	control
Rating Unit	%	%	%	%	%	%	%	%
Assessed By	SC	SC	SC	SC	SC	SC	SC	SC
Days After First/Last Applic.	37	51	75	18	23	37	51	75
ARM Action Codes								
Trt No.	1	2	3	4	5	6	7	8
Treatment Name								
Rate								
Unit								
1 None	0 b	0 a	0 c	0 c	0 d	17 c	0 c	0 b
2 Eptam 4 pt/A	0 b	17 a	15 b	32 b	43 c	13 c	27 bc	15 b
3 Vapam 55 GPA	13 a	40 a	60 a	78 a	73 b	83 a	80 a	73 a
4 DMDS EC @ 53 GPA	0 b	0 a	0 c	87 a	87 a	67 ab	46 b	18 b
5 DMDS EC @ 70 GPA	0 b	0 a	0 c	87 a	78 ab	55 b	47 b	23 b
LSD (P=.05)	9.7	42.8	12.6	10.8	10.4	24.2	30.5	22.8
Standard Deviation	5.2	22.7	6.7	5.7	5.5	12.9	16.2	12.1
CV	193.65	199.47	44.72	10.12	9.79	27.47	40.53	46.51
Bartlett's X2	0.0	0.081	0.0	1.697	0.275	7.67	4.164	1.181
P(Bartlett's X2)	.	0.776	.	0.638	0.965	0.104	0.244	0.758

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

## University of Georgia

Pest Code	plant 1	plant 2	plant 3	plant 4	plant 5	plant 6	plant 7
Crop Code	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME
BBCH Scale	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO
Rating Date	Sep-04-07	Sep-04-07	Sep-04-07	Sep-04-07	Sep-04-07	Sep-04-07	Sep-04-07
Rating Data Type	ht	ht	ht	ht	ht	ht	ht
Rating Unit	cm	cm	cm	cm	cm	cm	cm
Assessed By							
Days After First/Last Applic.	48	48	48	48	48	48	48
ARM Action Codes							
Trt Treatment	Rate						
No. Name	Rate Unit	9	10	11	12	13	14
1 None		31 a	31 ab	32 a	32 a	29 a	32 a
2 Eptam 4 pt/A		29 a	26 ab	29 a	29 ab	30 a	29 a
3 Vapam 55 GPA		19 b	18 b	15 b	18 b	18 b	14 b
4 DMDS EC @ 53 GPA		34 a	30 ab	33 a	34 a	31 a	32 a
5 DMDS EC @ 70 GPA		31 a	32 a	33 a	35 a	35 a	32 a
LSD (P=.05)		9.9	12.2	13.1	10.9	9.7	12.9
Standard Deviation		4.9	6.1	6.5	5.5	4.9	6.5
CV		17.16	22.38	23.04	18.65	17.05	23.2
Bartlett's X2		2.133	1.087	1.529	5.551	4.098	4.177
P(Bartlett's X2)		0.711	0.896	0.676	0.235	0.393	0.383

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

## University of Georgia

Pest Code	plant 8	plant 9	plant 10	AVG10PLA	Harv 1	Harv 1	Harv 2	Harv 2	
Crop Code	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME	
BBCH Scale	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	
Rating Date	Sep-04-07	Sep-04-07	Sep-04-07	Sep-04-07	Sep-27-07	Sep-27-07	Oct-02-07	Oct-02-07	
Rating Data Type	ht	ht	ht	ht	#	wt/lb	#	wt/lb	
Rating Unit	cm	cm	cm	cm	per plot	per plot	per plot	per plot	
Assessed By									
Days After First/Last Applic.	48	48	48	48	71	71	76	76	
ARM Action Codes				T1					
Trt Treatment	Rate								
No. Name	Rate Unit	16	17	18	19	20	21	22	23
1 None		34 a	39 a	35 a	33 a	1 b	1 b	3 b	3 bc
2 Eptam 4 pt/A		29 a	30 b	26 b	28 a	2 ab	1 ab	1 b	1 c
3 Vapam 55 GPA		20 b	17 c	15 c	17 b	0 b	0 b	0 b	0 c
4 DMDS EC @ 53 GPA		32 a	35 ab	26 b	32 a	4 a	3 a	6 a	8 ab
5 DMDS EC @ 70 GPA		29 a	35 ab	32 ab	33 a	2 ab	2 ab	8 a	11 a
LSD (P=.05)		8.0	7.0	6.1	7.0	2.7	2.5	3.1	5.2
Standard Deviation		4.0	3.5	3.0	3.5	1.3	1.2	1.6	2.6
CV		13.99	11.16	11.35	12.13	77.29	82.7	44.97	57.43
Bartlett's X2		1.231	7.845	1.976	6.972	1.631	2.107	4.561	6.068
P(Bartlett's X2)		0.746	0.097	0.74	0.137	0.652	0.55	0.207	0.108

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

Column 19: T1 = @AVG([C9],[C18])

## University of Georgia

Pest Code	Harv 3	Harv 3	Harv 4	Harv 4	Harv 5	Harv 5	Harv 6	Harv 6
Crop Code	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME
BBCH Scale	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO
Rating Date	Oct-11-07	Oct-11-07	Oct-17-07	Oct-17-07	Oct-25-07	Oct-25-07	Oct-30-07	Oct-30-07
Rating Data Type	#	wt/lb	#	wt/lb	#	wt/lb	#	wt/lb
Rating Unit	per plot	per plot	per plot	per plot	per plot	per plot	per plot	per plot
Assessed By								
Days After First/Last Applic.	85	85	91	91	99	99	104	104
ARM Action Codes								
Trt Treatment	Rate							
No. Name	Rate Unit	24	25	26	27	28	29	30
1 None	1 c	1 c	8 cd	9 cd	13 ab	14 ab	6 ab	5 ab
2 Eptam 4 pt/A	6 ab	8 ab	13 c	14 c	18 ab	19 ab	7 ab	6 ab
3 Vapam 55 GPA	1 c	1 c	4 d	4 d	9 b	8 b	6 b	5 b
4 DMDS EC @ 53 GPA	5 b	6 b	30 a	30 a	21 a	20 a	12 a	11 a
5 DMDS EC @ 70 GPA	9 a	10 a	21 b	22 b	22 a	22 a	10 ab	10 ab
LSD (P=.05)	2.8	3.8	6.8	5.9	10.5	10.7	5.4	5.6
Standard Deviation	1.4	1.9	3.4	2.9	5.2	5.3	2.7	2.8
CV	31.21	36.71	22.56	18.63	31.9	32.5	33.06	37.53
Bartlett's X2	1.098	3.679	1.78	4.988	5.038	5.303	1.263	2.019
P(Bartlett's X2)	0.778	0.298	0.776	0.289	0.283	0.258	0.868	0.732

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

# University of Georgia

Pest Code	Harv 7	Harv 7	Harv 1-2	Harv 1-2	Harv 1-4	Harv 1-4	Harv 1-8	Harv 1-8	
Crop Code	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME	SOLME	
BBCH Scale	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	
Rating Date	Nov-06-07	Nov-06-07	Nov-06-07	Nov-06-07	Nov-06-07	Nov-06-07	Nov-06-07	Nov-06-07	
Rating Data Type	#	wt/lb	#	wt/lb	#	wt/lb	#	wt/lb	
Rating Unit	per plot	per plot	per plot	per plot	per plot	per plot	per plot	per plot	
Assessed By									
Days After First/Last Applic.	111	111	111	111	111	111	111	111	
ARM Action Codes			T2	T3	T4	T7	T5	T6	
Trt Treatment	Rate								
No. Name	Rate Unit	32	33	34	35	36	37	38	39
1 None		12 a	12 b	4 b	4 b	38 b	14 bc	44 b	46 bc
2 Eptam 4 pt/A		12 a	12 ab	2 b	2 b	28 bc	24 b	58 b	61 b
3 Vapam 55 GPA		12 a	12 ab	0 b	0 b	4 c	5 c	32 b	30 c
4 DMDS EC @ 53 GPA		22 a	23 a	10 a	11 a	98 a	47 a	99 a	101 a
5 DMDS EC @ 70 GPA		19 a	19 ab	10 a	13 a	112 a	45 a	91 a	95 a
LSD (P=.05)		11.1	10.7	3.4	4.7	32.5	11.2	25.7	29.8
Standard Deviation		5.6	5.3	1.7	2.4	16.3	5.6	12.9	14.9
CV		35.99	34.07	32.65	39.55	29.04	20.66	19.88	22.39
Bartlett's X2		3.033	4.47	2.479	4.429	3.585	10.893	2.635	1.857
P(Bartlett's X2)		0.552	0.346	0.479	0.219	0.465	0.028*	0.621	0.762

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

Column 34: T2 = ((C20)+[C22])

Column 35: T3 = ((C21)+[C23])

Column 36: T4 = ((C20)+[C22]0+[C24]+[C26])

Column 37: T7 = [C21]+[C23]+[C25]+[C27]

Column 38: T5 = ((C20)+[C22]+[C24]+[C26]+[C28]+[C30]+[C32])

Column 39: T6 = ((C21)+[C23]+[C25]+[C27]+[C29]+[C31]+[C33])

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Trial ID: Veg37-07  
Location: Ponder Farm

Protocol ID:  
Study Director: Stanley Culpepper  
Investigator: Stanley Culpepper

### General Trial Information

**Study Director:** Culpepper **Title:** Ex. Weed Science  
**Affiliation:** University of Georgia  
**Postal Code:** 31794 **E-mail:** \_\_\_\_\_

**Investigator:** Stanley Culpepper **Title:** Ex. Weed Science  
**Affiliation:** University of Georgia  
**Postal Code:** 31794 **E-mail:** \_\_\_\_\_

**Keywords:**

### Trial Location

**City:** TyTy **Trial Status:** completed  
**State/Prov.:** GA **Trial Reliability:** good  
**Postal Code:** 31795 **Initiation Date:** Jul-18-07  
**Country:** USA **Planned Completion Date:** \_\_\_\_\_  
\_ -Latitude of LL Corner °: \_\_\_\_\_ \_ -Longitude of LL Corner °: \_\_\_\_\_  
**Altitude of LL Corner:** \_\_\_\_\_ **Unit:** \_\_\_\_\_ **Angle y-axis to North °:** \_\_\_\_\_  
**Map Reference:** \_\_\_\_\_  
**Directions:**

**Conducted Under GLP:** \_ **Official Trial Code:** \_\_\_\_\_  
**Conducted Under GEP:** \_ **Other Trial Code:** \_\_\_\_\_

Guideline	Description
1.	

Objectives:

Conclusions:

**Cooperator/Landowner**

**Cooperator:** \_\_\_\_\_ **Country:** \_\_\_\_\_  
**Organization:** \_\_\_\_\_ **Phone No:** \_\_\_\_\_  
**Address 1:** \_\_\_\_\_ **Fax No:** \_\_\_\_\_  
**Address 2:** \_\_\_\_\_  
**City:** \_\_\_\_\_  
**State/Prov:** \_\_\_\_\_  
**Postal Code:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_



# University of Georgia

Crop Description			
Crop 1: SOLME Solanum melongena		Aubergine	
Variety: Santana	Description: _____		
BBCH Scale: BVSO	Planting Date: Aug-15-07		
Planting Method: transplant	Rate, Unit: 1 20 inch		
Depth, Unit: 1.5 in	Perennial Age, Unit: _____		
Row Spacing, Unit: 6 foot	Spacing Within Row, Unit: 20 inch		
Seed Bed: mulched	Soil Temperature, Unit: 98 F		
Soil Moisture: drip	Emergence Date: _____		
Harvest Date: _____	Harvest Equipment: _____		
Harvested Width, Unit: _____	Harvested Length, Unit: _____		
% Standard Moisture: _____	Moisture Meter: _____		
Weighing Equipment: _____			

Pest Description	
Pest 1 Type: W	Code: CYPRO _____
Common Name: Cyperus rotundus	
Description: purple nutsedge	

Site and Design			
Plot Width, Unit: 6	FT	Site Type:	Ponder Farm
Plot Length, Unit: 30	FT	Tillage Type:	Conventional
Replications: 3		Study Design:	Randomized Complete Block
% Slope: _____		Soil Drainage: _	_____

Trial Initiation Comments:

	Previous Crops	Previous Pesticides	Year
1.			

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

Comment:

Field Prep./Maintenance:

Soil Description			
Description Name: _____			
% Sand: 94	% OM: 6.4	Texture:	Sand
% Silt: 2	pH: 1.3	Soil Name:	Tifton sandy loam
% Clay: 4	CEC: _____	Fert. Level:	_____
Analyzed By: _____			

Additional Measured Elements		
Element	Quantity	Unit

Moisture Conditions		
Overall Moisture Conditions: Drip Irrigation		
Closest Weather Station: _____	Distance: _____	Unit: _____

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	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

### Application Description

	A
Application Date:	Jul-18-07
Time of Day:	4:00pm
Application Method:	broadcast
Application Timing:	preplant
Application Placement:	on soil
Applied By:	
Air Temperature, Unit:	89 F
% Relative Humidity:	25
Wind Velocity, Unit:	4 mph
Wind Direction:	
Dew Presence (Y/N):	n
Water Hardness:	
Soil Temperature, Unit:	90 F
Soil Moisture:	dry
% Cloud Cover:	0
Next Rain Occurred On:	

### Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	SOLME BVSO
Stage Scale Used:	BBCH
Stage Majority, Percent:	.
Stage Minimum, Percent:	
Stage Maximum, Percent:	
Diameter, Unit:	
Height, Unit:	
Height Minimum, Maximum:	

### Pest Stage At Each Application

	A
Pest 1 Code, Disc., Scale:	CYPRO W .
Stage Majority, Percent:	.
Stage Minimum, Percent:	
Stage Maximum, Percent:	
Diameter, Unit:	
Height, Unit:	
Height Minimum, Maximum:	
Density, Unit:	0. .
Coverage, Unit:	

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## Application Equipment

	A
Appl. Equipment:	drip
Operating Pressure, Unit:	injected PSI
Nozzle Type:	
Nozzle Size:	
Nozzle Spacing, Unit:	
Nozzles/Row:	
Nozzle Calibration, Unit:	
Band Width, Unit:	
Boom ID:	
Boom Length, Unit:	
Boom Height, Unit:	
Ground Speed, Unit:	
Incorporation Equip.:	
Hours to Incorp.:	
Incorp. Depth, Unit:	
Carrier:	water
Spray Volume, Unit:	
Mix Size, Unit:	
Spray pH:	
Propellant:	CO2
Tank Mix (Y/N):	Y

Equipment Comment:

Trt No    Treatment Application Comment

\_\_\_\_\_

Date                      By                      Notes

\_\_\_\_\_

Date                      By                      Deviations

\_\_\_\_\_

Reasons: