

# University of Georgia

**Nutsedge and cantaloupe response to DMDS applied under LDPE and VIF mulch.**

Trial ID: Veg17-07

Study Dir.: Stanley Culpepper

Location: Ponder Farm

Investigator: Stanley Culpepper

Reps: 3

Plots: 6 by 55 feet

Spray vol: 14.8 gal/ac

Mix size: 1 liters (min 1.2733)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Grow Unit	Stg	Appl Code	Amt to Measure	Product	Plot No. 1	By Rep 2	3
1	DMDS 79:21 @ 74 G LDPE 1.25 mil							A			101	202	305
2	MB 67:33 @ 350 lb LDPE 1.25 mil							A			102	205	302
3	DMDS 79:21 @ 56 G LDPE 1.25 mil							A			103	201	304
4	No Fumigant LDPE 1.25 mil										104	206	301
5	DMDS 79:21 @ 74 G VIF 1.25 mil Blocade							A			105	203	306
6	DMDS 79:21 @ 56 G VIF 1.25 mil Blocade							A			106	204	303

Sort Order: Treatment

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

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
---------	------	----------------	-----------	-----------	----------

\* 'Per area' calculations based on spray volume= 14.8 gal/ac, mix size= 1 liters (mix size basis).

\* Product amount calculations increased 25 % for overage adjustment.

### Trial Comments

OBJECTIVE: Determine the most effective rate and mulch to use with DMDS.

## Cantaloupe Injury:

1. Cantaloupe were transplanted 25 d after fumigating.
2. DMDS applied under LDPE mulch did not impact cantaloupe growth; however, DMDS applied under VIF mulch stunted cantaloupe up to 18% by 12 d after transplanting.

## Visual nutsedge control and nutsedge counts (entire plot was counted):

1. DMDS at 56 G under LDPE mulch provided poor control.
2. DMDS at 74 G under LDPE mulch provided good control.
3. DMDS at either rate applied under VIF provided excellent control.

## Visual large crabgrass:

1. Control was excellent with MB and DMDS applied under VIF mulch.
2. Poor crabgrass control (rate response was noted) was observed with DMDS under LDPE mulch.

## Cantaloupe growth (average of 10 plants per plot):

1. In early April, cantaloupe planted on beds treated with DMDS under VIF mulch were shorter than other treated plots because of the early season stunting from the DMDS still under the mulch.

## Cantaloupe yield:

1. When averaging the first three harvests; lowest yields were generally noted with DMDS applied under VIF because of crop injury as well as the non-treated control.

## University of Georgia

2. When averaging the first three harvests; only DMDS at 74 G under LDPE mulch provided equal yield to MB.
3. When averaging all harvests, yields were similar with all treatments except lower yields were noted in the no fumigant plots and when DMDS was applied at 56 G under LDPE mulch. Yield loss was a response to nutsedge competition.

# University of Georgia

Nutsedge and cantaloupe response to DMDS applied under LDPE and VIF mulch.

Trial ID: Veg17-07

Study Dir.: Stanley Culpepper

Location: Ponder Farm

Investigator: Stanley Culpepper

Weed Code	CUMMC	CUMMC	CYPRO	CYPRO	DIGSA	CYPRO	CYPRO	CYPRO	
Crop Code									
Rating Data Type	injury	injury	control	control	control	plants/plot	plants/plot	plants/plot	
Rating Unit	%	%	%	%	%	#	#	#	
Rating Date	Apr-03-07	May-14-07	Apr-03-07	May-14-07	May-14-07	Mar-28-07	Apr-12-07	Apr-25-07	
Assessed By	SC	SC	SC	SC	SC				
Trt-Eval Interval	35 DA-A	76 DA-A	35 DA-A	76 DA-A	76 DA-A	29 DA-A	44 DA-A	57 DA-A	
ARM Action Codes									
# Subsamples, Dec.									
Trt Treatment	Rate								
No. Name	Rate Unit	1	2	3	4	5	6	7	8
1 DMDS 79:21 @ 74 G LDPE 1.25 mil		0 c	0 a	89 b	87 b	47 b	14 c	29 c	41 c
2 MB 67:33 @ 350 lb LDPE 1.25 mil		0 c	3 a	99 a	99 a	99 a	4 c	4 c	4 c
3 DMDS 79:21 @ 56 G LDPE 1.25 mil		0 c	0 a	57 c	60 c	27 c	168 b	247 b	241 b
4 No Fumigant LDPE 1.25 mil		0 c	0 a	0 d	0 d	0 d	358 a	417 a	425 a
5 DMDS 79:21 @ 74 G VIF 1.25 mil Blocade		18 a	0 a	99 a	99 a	99 a	0 c	0 c	0 c
6 DMDS 79:21 @ 56 G VIF 1.25 mil Blocade		10 b	0 a	99 a	99 a	99 a	0 c	0 c	0 c
LSD (P=.05)		7.0	4.3	5.5	9.8	15.5	148.7	141.1	102.3
Standard Deviation		3.8	2.4	3.0	5.4	8.5	81.8	77.6	56.3
CV		81.25	424.26	4.12	7.3	13.88	90.34	66.67	47.5
Bartlett's X2		1.962	0.0	1.683	21.057	25.481	19.144	18.624	15.05
P(Bartlett's X2)		0.161	.	0.431	0.001*	0.001*	0.001*	0.001*	0.002*

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

## University of Georgia

Weed Code	plant 1	plant 2	plant 3	plant 4	plant 5	plant 6	plant 7	plant 8	
Crop Code	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	
Rating Data Type	ht	ht	ht	ht	ht	ht	ht	ht	
Rating Unit	cm	cm	cm	cm	cm	cm	cm	cm	
Rating Date	Apr-12-07	Apr-12-07	Apr-12-07	Apr-12-07	Apr-12-07	Apr-12-07	Apr-12-07	Apr-12-07	
Assessed By									
Trt-Eval Interval	44 DA-A	44 DA-A	44 DA-A	44 DA-A	44 DA-A	44 DA-A	44 DA-A	44 DA-A	
ARM Action Codes									
# Subsamples, Dec.									
Trt Treatment	Rate								
No. Name	Rate Unit	9	10	11	12	13	14	15	16
1 DMDS 79:21 @ 74 G LDPE 1.25 mil		14 ab	14 ab	14 a	15 ab	17 a	13 a	14 ab	13 ab
2 MB 67:33 @ 350 lb LDPE 1.25 mil		15 ab	18 a	15 a	18 a	17 a	13 a	15 ab	14 ab
3 DMDS 79:21 @ 56 G LDPE 1.25 mil		19 a	14 ab	13 a	15 ab	16 ab	15 a	19 a	16 a
4 No Fumigant LDPE 1.25 mil		11 b	15 ab	13 a	14 ab	14 abc	14 a	12 b	12 ab
5 DMDS 79:21 @ 74 G VIF 1.25 mil Blocade		10 b	8 c	9 a	9 b	9 c	10 a	11 b	12 ab
6 DMDS 79:21 @ 56 G VIF 1.25 mil Blocade		13 ab	12 bc	14 a	9 b	10 bc	10 a	12 b	8 b
LSD (P=.05)		5.0	4.9	5.8	6.3	5.7	5.5	5.6	5.7
Standard Deviation		2.8	2.7	3.2	3.4	3.1	3.0	3.1	3.1
CV		20.16	20.18	24.37	26.08	22.8	23.72	22.28	24.98
Bartlett's X2		0.685	2.987	0.876	2.148	1.491	1.324	2.726	4.198
P(Bartlett's X2)		0.984	0.702	0.972	0.828	0.914	0.932	0.742	0.521

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

# University of Georgia

Weed Code	plant 9	plant10	avg10pla	harv 1	harv 1	harv 2	harv 2	harv 3	
Crop Code	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	
Rating Data Type	ht	ht	ht	yld/plot	yld/plot	yld/plot	yld/plot	yld/plot	
Rating Unit	cm	cm	cm	#	wt/lbs	#	wt/lbs	#	
Rating Date	Apr-12-07	Apr-12-07	Apr-12-07	May-23-07	May-23-07	May-28-07	May-28-07	Jun-01-07	
Assessed By									
Trt-Eval Interval	44 DA-A	44 DA-A	44 DA-A	85 DA-A	85 DA-A	90 DA-A	90 DA-A	94 DA-A	
ARM Action Codes			T1						
# Subsamples, Dec.			1						
Trt Treatment	Rate								
No. Name	Rate Unit	17	18	19	20	21	22	23	24
1 DMDS 79:21 @ 74 G LDPE 1.25 mil		12 a	16 a	14.3 a	2 abc	5 ab	14 a	29 a	10 ab
2 MB 67:33 @ 350 lb LDPE 1.25 mil		14 a	12 bc	15.1 a	5 a	10 a	14 a	32 a	8 ab
3 DMDS 79:21 @ 56 G LDPE 1.25 mil		14 a	13 ab	15.4 a	4 ab	8 ab	11 ab	23 a	6 b
4 No Fumigant LDPE 1.25 mil		12 a	15 ab	13.2 ab	1 bc	3 bc	7 b	12 b	10 ab
5 DMDS 79:21 @ 74 G VIF 1.25 mil Blocade		9 a	9 cd	9.7 c	0 c	0 c	2 c	3 b	11 a
6 DMDS 79:21 @ 56 G VIF 1.25 mil Blocade		11 a	8 d	10.8 bc	0 c	0 c	2 c	4 b	6 b
LSD (P=.05)		6.2	3.7	2.96	2.6	4.7	4.6	9.9	4.9
Standard Deviation		3.4	2.0	1.63	1.4	2.6	2.5	5.4	2.7
CV		28.11	16.48	12.45	70.12	60.5	31.0	31.49	31.64
Bartlett's X2		11.395	6.05	7.141	0.342	0.378	10.487	13.355	6.741
P(Bartlett's X2)		0.044*	0.109	0.21	0.952	0.945	0.063	0.02*	0.15

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

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

## University of Georgia

Weed Code	harv 3	harv 4	harv 4	harv 5	harv 5	harv 6	harv 6	harv 7	
Crop Code	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	
Rating Data Type	yld/plot	yld/plot	yld/plot	yld/plot	yld/plot	yld/plot	yld/plot	yld/plot	
Rating Unit	wt/lbs	#	wt/lbs	#	wt/lbs	#	wt/lbs	#	
Rating Date	Jun-01-07	Jun-04-07	Jun-04-07	Jun-07-07	Jun-07-07	Jun-11-07	Jun-11-07	Jun-14-07	
Assessed By									
Trt-Eval Interval	94 DA-A	97 DA-A	97 DA-A	100 DA-A	100 DA-A	104 DA-A	104 DA-A	107 DA-A	
ARM Action Codes									
# Subsamples, Dec.									
Trt Treatment	Rate								
No. Name	Rate Unit	25	26	27	28	29	30	31	32
1 DMDS 79:21 @ 74 G LDPE 1.25 mil		29 ab	10 bc	36 b	13 ab	51 ab	6 b	25 b	18 b
2 MB 67:33 @ 350 lb LDPE 1.25 mil		26 ab	20 a	77 a	12 ab	47 ab	5 b	22 b	14 b
3 DMDS 79:21 @ 56 G LDPE 1.25 mil		17 b	12 b	41 b	10 bc	41 bc	7 b	28 b	13 b
4 No Fumigant LDPE 1.25 mil		30 ab	9 bc	31 b	6 cd	23 cd	8 b	30 b	14 b
5 DMDS 79:21 @ 74 G VIF 1.25 mil Blocade		33 a	8 bc	26 b	4 d	17 d	16 a	68 a	30 a
6 DMDS 79:21 @ 56 G VIF 1.25 mil Blocade		15 b	6 c	23 b	17 a	67 a	9 b	38 b	37 a
LSD (P=.05)		14.8	5.2	18.3	5.1	19.8	6.8	27.2	9.0
Standard Deviation		8.1	2.8	10.0	2.8	10.9	3.7	14.9	4.9
CV		32.39	26.44	25.85	27.41	26.4	43.86	42.43	23.36
Bartlett's X2		11.333	3.818	3.182	1.51	1.578	5.311	7.004	3.184
P(Bartlett's X2)		0.045*	0.576	0.672	0.912	0.904	0.379	0.22	0.672

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

## University of Georgia

Weed Code	harv 7	harv 8	harv 8	harv 9	harv 9	harv 10	harv 10	harv 11	
Crop Code	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC	
Rating Data Type	yld/plot	yld/plot	yld/plot	yld/plot	yld/plot	yld/plot	yld/plot	yld/plot	
Rating Unit	wt/lbs	#	wt/lbs	#	wt/lbs	#	wt/lbs	#	
Rating Date	Jun-14-07	Jun-18-07	Jun-18-07	Jun-21-07	Jun-21-07	Jun-25-07	Jun-25-07	Jun-29-07	
Assessed By									
Trt-Eval Interval	107 DA-A	111 DA-A	111 DA-A	114 DA-A	114 DA-A	118 DA-A	118 DA-A	122 DA-A	
ARM Action Codes									
# Subsamples, Dec.									
Trt Treatment	Rate								
No. Name	Rate Unit	33	34	35	36	37	38	39	40
1 DMDS 79:21 @ 74 G LDPE 1.25 mil		66 b	20 a	66 a	14 a	41 a	8 ab	27 ab	5 a
2 MB 67:33 @ 350 lb LDPE 1.25 mil		54 b	19 a	65 a	13 a	47 a	11 a	36 a	2 b
3 DMDS 79:21 @ 56 G LDPE 1.25 mil		52 b	17 a	65 a	13 a	42 a	7 ab	22 ab	2 b
4 No Fumigant LDPE 1.25 mil		54 b	22 a	74 a	7 a	24 a	5 b	13 b	2 b
5 DMDS 79:21 @ 74 G VIF 1.25 mil Blocade		124 a	17 a	66 a	10 a	35 a	11 a	34 a	6 a
6 DMDS 79:21 @ 56 G VIF 1.25 mil Blocade		153 a	13 a	49 a	9 a	34 a	8 ab	27 ab	7 a
LSD (P=.05)		32.5	12.7	41.5	7.8	27.0	5.1	17.9	2.9
Standard Deviation		17.8	7.0	22.8	4.3	14.8	2.8	9.8	1.6
CV		21.22	38.38	35.57	38.8	39.83	33.14	37.25	40.26
Bartlett's X2		2.044	2.534	4.334	5.674	3.357	2.648	3.071	6.542
P(Bartlett's X2)		0.843	0.771	0.502	0.339	0.645	0.754	0.689	0.257

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

## University of Georgia

Weed Code	harv 11	harv 1-3	harv 1-3	harv1-11	harv1-11
Crop Code	CUMMC	CUMMC	CUMMC	CUMMC	CUMMC
Rating Data Type	yld/plot	yld/plot	yld/plot	yld/plot	yld/plot
Rating Unit	wt/lbs	#	wt/lbs	#	wt/lbs
Rating Date	Jun-29-07				
Assessed By					
Trt-Eval Interval	122 DA-A				
ARM Action Codes		T2	T3	T4	T5
# Subsamples, Dec.					
Trt Treatment	Rate				
No. Name	Rate Unit	41	42	43	44
1 DMDS 79:21 @ 74 G LDPE 1.25 mil		14 ab	26 a	64 ab	120 a
2 MB 67:33 @ 350 lb LDPE 1.25 mil		6 bc	27 a	68 a	122 a
3 DMDS 79:21 @ 56 G LDPE 1.25 mil		6 bc	21 ab	47 bc	103 bc
4 No Fumigant LDPE 1.25 mil		5 c	18 bc	45 c	91 c
5 DMDS 79:21 @ 74 G VIF 1.25 mil Blocade		18 a	13 cd	36 c	116 ab
6 DMDS 79:21 @ 56 G VIF 1.25 mil Blocade		22 a	7 d	19 d	114 ab
LSD (P=.05)		8.6	6.0	16.8	16.5
Standard Deviation		4.8	3.3	9.2	9.1
CV		39.82	17.65	19.81	8.17
Bartlett's X2		5.458	3.84	3.321	10.38
P(Bartlett's X2)		0.363	0.573	0.651	0.065

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

Column 42: T2 = ([C20]+[C22]+[C24])

Column 43: T3 = ([C21]+[C23]+[C25])

Column 44: T4 = ([C20]+[C22]+[C24]+[C26]+[C28]+[C30]+[C32]+[C34]+[C36]+[C38]+[C40])

Column 45: T5 = ([C21]+[C23]+[C25]+[C27]+[C29]+[C31]+[C33]+[C35]+[C37]+[C39]+[C41])



## University of Georgia

**Nutsedge and cantaloupe response to DMDS applied under LDPE and VIF mulch.**

Trial ID: Veg17-07 Study Dir.: Stanley Culpepper  
 Location: Ponder Farm Investigator: Stanley Culpepper

**GENERAL TRIAL INFORMATION**

Study Director: Stanley Culpepper	Title: Ext. Weed science
Affiliation: Univ. of Georgia	
Postal Code: 31794	
Investigator: Stanley Culpepper	Title: Ext. Weed science
Affiliation: Univ. of Georgia	
Postal Code: 31794	

**TRIAL LOCATION**

City: Ty Ty	Trial Status: completed
State/Prov.: Georgia	Trial Reliability: excellent
Postal Code: 31795	Initiation Date: Feb-27-07
Country: USA	Planned Completion Date: _____
E-Longitude of LL Corner °: _____	N-Latitude of LL Corner °: _____
Altitude of LL Corner: _____ Unit: _____	Angle y-axis to North °: _____
Directions: _____	

**COOPERATOR/LANDOWNER**

Cooperator: _____	Country: _____
Org: _____	Phone No: _____
Address 1: _____	Fax No: _____
Address 2: _____	
City: _____	
State/Prov: _____	
Postal Code: _____	
Conducted Under GLP (Y/N): N	Conducted Under GEP (Y/N): N
Guidelines: _____	Guideline Description: _____

Objective: \_\_\_\_\_  
 Conclusions: \_\_\_\_\_

**CROP AND WEED DESCRIPTION**

Weed	Code	Common Name	Scientific Name
1.	DIGSA	large crabgrass	
2.	CYPRO	purple nutsedge	

Crop 1: CUMMC cantaloupe	Variety: Athena
Planting Date: Mar-22-07	Planting Method: transplant
Rate: 1      3.5 ft	Depth: 1.5 in      Perennial Age: _____
Row Spacing: 6 ft	Spacing Within Row: 18 in      Seed Bed: mulched
Soil Temperature: 80 f	Soil Moisture: drip      Emergence Date: _____

**SITE AND DESIGN**

Plot Width, Unit: 6 FT	Plot Length, Unit: 55 FT	Reps: 3
Site Type: Ponder Farm	Study Design: RANDOMIZED COMPLETE BLOCK	
Tillage Type: Conventional		

Trial Initiation Comments: \_\_\_\_\_

	Previous Crops	Previous Pesticides	Year
1.			

# University of Georgia

## MAINTENANCE

Field Prep./Maintenance:

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

### SOIL DESCRIPTION

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

### ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

### MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: drip irrigation

Closest Weather Station: \_\_\_\_\_ Distance: \_\_\_\_\_ Unit: \_\_\_\_

### APPLICATION DESCRIPTION

	A
Application Date:	Feb-27-07
Time of Day:	9 am
Application Method:	band
Application Timing:	preplant
Applic. Placement:	inj 8inch
Air Temp., Unit:	54 f
% Relative Humidity:	38
Wind Velocity, Unit:	0 MPH
Dew Presence (Y/N):	N
Water Hardness:	
Soil Temp., Unit:	61 f
Soil Moisture:	moist
% Cloud Cover:	0

### CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	CUMMC Preplant
Stage Scale:	not plant
Height, Unit:	0 inch

### WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	DIGSA Preplant
Stage Scale:	not up
Density, Unit:	see data
Weed 2 Code, Stage:	CYPRO Preplant
Stage Scale:	not up
Density, Unit:	see data

# University of Georgia

## APPLICATION EQUIPMENT

	A
Appl. Equipment:	backpack
Operating Pressure:	24
Nozzle Type:	flat fan
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 in
Nozzles/Row:	2
Band Width, Unit:	
Boom Length, Unit:	4.5 ft
Boom Height, Unit:	15 in
Ground Speed, Unit:	3 MPH
Incorporation Equip.:	
Hours to Incorp.:	
Incorp. Depth, Unit:	
Carrier:	water
Spray Volume, Unit:	14.8 GPA
Spray pH:	
Propellant:	CO2
Tank Mix (Y/N):	Y

Trt No	Treatment Application Comment