

University of Georgia

Weed and tomoato response to DMDS mixtures applied under VIF, metalized and LDPE mulch.

Trial ID: Veg34-07
 Location: Ponder Farm

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

Reps: 3 Plots: 6 by 60 feet
 Spray vol: 14.8 gal/ac Mix size: 2 liters (min 1.389)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Growth Unit	Appl Code	Amt Product to Measure	Plot No. By Rep		
									1	2	3
1	DMDS 79:21 @ 40 GPA Blocade Mulch						A		101	202	308
2	DMDS 79:21 @ 40 GPA Metalized Mulch						A		103	208	305
3	DMDS 79:21 @ 50 GPA Blocade Mulch						A		102	205	304
4	DMDS 79:21 @ 60 GPA Blocade Mulch						A		104	203	302
5	DMDS 79:21 @ 70 GPA Blocade Mulch						A		105	201	306
6	DMDS 79:21 @ 70 GPA LDPE Mulch						A		106	207	303
7	Non-treated Control								107	204	307
8	MB 50:50 240 lb/A Blocade Mulch						A		108	206	301

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= 2 liters (mix size basis).
 * Product amount calculations increased 25 % for overage adjustment.

Trial Comments

OBJECTIVE: Determine the rate of DMDS (79:21) needed under Blocade mulch in the fall.

NUTSEDGE CONTROL AND COUNTS:

1. At 40 GAL/A, control from DMDS under VIF mulch was nearly 20% greater than under metalized mulch at harvest.
2. At harvest, 40 GAL/A of DMDS under VIF mulch was more effective than 70 GAL/A under LDPE mulch.
3. DMDS at 50, 60, and 70 GAL/A provided control that was numerically greater than the MB standard.
4. The MB standard was a 50:50 mixture which is less effective than a 67:33 and 57:43 mixture based on other research. The 50:50 mixture will not be recommended for the fall.

NUTSEDGE HEIGHTS:

1. Ten plants per plot were measured.
2. Plants growing on metalized mulch were taller than those on VIF mulch. Minor early season stunting was noted on the DMDS/Blocade treatments at 50 GAL/A or greater. However, fumigant stunting was not likely the culprit. The metalized mulch may have been serving to reduce insect infestations which were a major problem during this study.

YIELD:

1. Tomato were harvested 4 times.
2. Yellow leaf curl devastated this trial during mid season; thus, yields were greatly impacted.
3. No differences in tomato yield were noted from tomato in fumigated plots.

University of Georgia

4. There was a trend for greater yield on the metalized mulch which suggest a possible advantage in the metalized mulch serving as an insect repellent compared to other mulches.

GENERAL COMMENTS:

1. Fumigants were injected with 3 knives placing the fumigant 8 inches deep on a 32 inch bed top and covered immediately with mulch.

University of Georgia

Weed and tomoato response to DMDS mixtures applied under VIF, metalized and
LDPE mulch.

Trial ID: Veg34-07

Protocol ID:

Location: Ponder Farm

Study Director: Stanley Culpepper

Investigator: Stanley Culpepper

Pest Code	LYPES	LYPES	CYPRO	CYPRO	CYPRO	CYPRO	CYPRO	
Crop Code	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES	
BBCH Scale	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	
Rating Date	Aug-10-07	Sep-01-07	Aug-05-07	Aug-10-07	Aug-22-07	Sep-01-07	Sep-27-07	
Rating Data Type	injury	injury	control	control	control	control	control	
Rating Unit	%	%	%	%	%	%	%	
Assessed By	SC	SC	SC	SC	SC	SC	SC	
Days After First/Last Applic.	24	46	19	24	36	46	72	
Trt-Eval Interval	24 DA-A	46 DA-A	19 DA-A	24 DA-A	36 DA-A	46 DA-A	72 DA-A	
ARM Action Codes								
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	Unit	Unit	
		1	2	3	4	5	6	
		7						
1	DMDS 79:21 @ 40 GPA Blocade Mulch	0 a	0 c	99 a	98 a	95 a	84 bc	85 b
2	DMDS 79:21 @ 40 GPA Metalized Mulch	0 a	0 c	99 a	94 bc	80 b	72 d	67 c
3	DMDS 79:21 @ 50 GPA Blocade Mulch	0 a	3 b	99 a	99 a	98 a	96 a	93 ab
4	DMDS 79:21 @ 60 GPA Blocade Mulch	0 a	5 a	99 a	99 a	97 a	96 a	97 ab
5	DMDS 79:21 @ 70 GPA Blocade Mulch	0 a	5 a	99 a	99 a	97 a	97 a	98 a
6	DMDS 79:21 @ 70 GPA LDPE Mulch	0 a	6 a	93 b	91 c	81 b	75 cd	72 c
7	Non-treated Control	0 a	0 c	0 c	0 d	0 c	0 e	0 d
8	MB 50:50 240 lb/A Blocade Mulch	0 a	0 c	99 a	97 ab	91 a	87 ab	87 ab
LSD (P=.05)		0.0	1.0	0.0	3.8	8.3	10.9	10.9
Standard Deviation		0.0	0.6	0.0	2.2	4.7	6.2	6.2
CV		0.0	22.51	0.0	2.56	5.9	8.17	8.27
Bartlett's X2		0.0	1.581	0.0	3.577	9.583	9.477	7.841
P(Bartlett's X2)		.	0.664	.	0.311	0.143	0.148	0.25

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

University of Georgia

Pest Code	CYPRO	CYPRO	CYPRO	CYPRO	plant 1	plant 2	plant 3
Crop Code	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES
BBCH Scale	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO
Rating Date	Aug-03-07	Aug-13-07	Aug-28-07	Sep-25-07	Sep-04-07	Sep-04-07	Sep-04-07
Rating Data Type	#	#	#	#	ht	ht	ht
Rating Unit	per plot	per plot	per plot	per plot	cm	cm	cm
Assessed By							
Days After First/Last Applic.	17	27	42	70	49	49	49
Trt-Eval Interval	17 DA-A	27 DA-A	42 DA-A	70 DA-A	49 DA-A	49 DA-A	49 DA-A
ARM Action Codes							
Trt No.	8	9	10	11	12	13	14
Treatment Name							
Rate							
Unit							
1 DMDS 79:21 @ 40 GPA Blocade Mulch	0 b	0 b	7 d	11 c	31 a	31 ab	29 ab
2 DMDS 79:21 @ 40 GPA Metalized Mulch	1 b	9 b	30 b	55 b	31 a	32 ab	32 a
3 DMDS 79:21 @ 50 GPA Blocade Mulch	0 b	0 b	9 cd	6 c	28 a	26 b	27 b
4 DMDS 79:21 @ 60 GPA Blocade Mulch	0 b	0 b	1 d	3 c	27 a	34 a	32 a
5 DMDS 79:21 @ 70 GPA Blocade Mulch	0 b	0 b	0 d	1 c	28 a	28 ab	32 a
6 DMDS 79:21 @ 70 GPA LDPE Mulch	4 b	7 b	25 bc	44 b	26 a	31 ab	29 ab
7 Non-treated Control	252 a	337 a	132 a	170 a	29 a	30 ab	32 a
8 MB 50:50 240 lb/A Blocade Mulch	0 b	2 b	12 cd	16 c	32 a	31 ab	32 a
LSD (P=.05)	24.2	36.1	14.8	24.5	9.6	6.4	4.2
Standard Deviation	13.8	20.6	8.4	14.0	5.5	3.6	2.4
CV	43.03	46.18	31.32	36.46	18.74	12.01	7.84
Bartlett's X2	23.064	32.514	16.266	19.449	10.961	6.725	6.311
P(Bartlett's X2)	0.001*	0.001*	0.012*	0.007*	0.14	0.458	0.504

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

University of Georgia

Pest Code	plant 4	plant 5	plant 6	plant 7	plant 8	plant 9	plant 10
Crop Code	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES
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.	49	49	49	49	49	49	49
Trt-Eval Interval	49 DA-A	49 DA-A	49 DA-A	49 DA-A	49 DA-A	49 DA-A	49 DA-A
ARM Action Codes							
Trt No.	15	16	17	18	19	20	21
Treatment Name							
Rate							
Unit							
1 DMDS 79:21 @ 40 GPA Blocade Mulch	27 a	30 b	27 b	29 bc	31 a	30 a	28 ab
2 DMDS 79:21 @ 40 GPA Metalized Mulch	33 a	37 a	38 a	37 a	33 a	36 a	31 ab
3 DMDS 79:21 @ 50 GPA Blocade Mulch	32 a	33 ab	32 b	29 bc	32 a	31 a	32 ab
4 DMDS 79:21 @ 60 GPA Blocade Mulch	29 a	31 ab	30 b	28 c	32 a	31 a	24 b
5 DMDS 79:21 @ 70 GPA Blocade Mulch	29 a	32 ab	30 b	34 ab	31 a	29 a	26 ab
6 DMDS 79:21 @ 70 GPA LDPE Mulch	30 a	33 ab	32 b	35 a	31 a	31 a	32 ab
7 Non-treated Control	31 a	32 ab	32 b	35 a	33 a	31 a	35 a
8 MB 50:50 240 lb/A Blocade Mulch	33 a	32 ab	31 b	33 abc	32 a	31 a	29 ab
LSD (P=.05)	6.9	5.4	5.5	4.9	5.6	7.6	8.7
Standard Deviation	4.0	3.1	3.2	2.8	3.2	4.3	5.0
CV	13.0	9.56	10.02	8.59	10.12	13.94	16.84
Bartlett's X2	5.838	2.881	6.559	5.867	3.397	8.171	5.879
P(Bartlett's X2)	0.559	0.896	0.476	0.555	0.846	0.318	0.554

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

University of Georgia

Pest Code	AVG10PLA	Harv 1	Harv 1	Harv 2	Harv 2	Harv 3	Harv 3	Harv 4
Crop Code	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES	LYPES
BBCH Scale	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO	BVSO
Rating Date	Sep-04-07	Oct-18-07	Oct-18-07	Oct-18-07	Oct-18-07	Oct-31-07	Oct-31-07	Nov-06-07
Rating Data Type	ht	#	wt/lb	#	wt/lb	#	wt/lb	#
Rating Unit	cm	per plot	per plot	per plot	per plot	per plot	per plot	per plot
Assessed By								
Days After First/Last Applic.	49	93	93	93	93	106	106	112
Trt-Eval Interval	49 DA-A	93 DA-A	93 DA-A	93 DA-A	93 DA-A	106 DA-A	106 DA-A	112 DA-A
ARM Action Codes	T5							
Trt Treatment	Rate							
No. Name	Rate Unit	22	23	24	25	26	27	28
1 DMDS 79:21 @ 40 GPA Blocade Mulch		29 b	18 a	7 a	26 b	10 a	26 a	11 a
2 DMDS 79:21 @ 40 GPA Metalized Mulch		34 a	20 a	7 a	41 a	12 a	26 a	11 a
3 DMDS 79:21 @ 50 GPA Blocade Mulch		30 b	20 a	8 a	35 ab	12 a	29 a	12 a
4 DMDS 79:21 @ 60 GPA Blocade Mulch		30 b	19 a	7 a	30 b	10 a	17 b	7 b
5 DMDS 79:21 @ 70 GPA Blocade Mulch		30 b	16 ab	6 ab	28 b	10 a	23 ab	9 ab
6 DMDS 79:21 @ 70 GPA LDPE Mulch		31 b	20 a	7 a	26 b	9 a	25 ab	10 ab
7 Non-treated Control		32 ab	5 b	1 b	11 c	4 b	8 c	5 c
8 MB 50:50 240 lb/A Blocade Mulch		32 ab	14 ab	5 ab	31 ab	12 a	21 ab	9 ab
LSD (P=.05)		2.7	11.8	4.4	10.4	3.5	7.9	2.7
Standard Deviation		1.5	6.7	2.5	5.9	2.0	4.5	1.6
CV		4.97	40.57	40.56	20.67	20.15	20.56	16.84
Bartlett's X2		3.701	16.863	18.228	3.532	6.587	4.029	3.308
P(Bartlett's X2)		0.814	0.018*	0.011*	0.832	0.473	0.776	0.855

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

Column 22: T5 = @AVG([12].[21])

University of Georgia

Pest Code	Harv 4	Harv 1-2	Harv 1-2	Harv 1-4	Harv 1-4	
Crop Code	LYPES	LYPES	LYPES	LYPES	LYPES	
BBCH Scale	BVSO	BVSO	BVSO	BVSO	BVSO	
Rating Date	Nov-06-07					
Rating Data Type	wt/lb	#	wt/lb	#	wt/lb	
Rating Unit	per plot	per plot	per plot	per plot	per plot	
Assessed By						
Days After First/Last Applic.	112					
Trt-Eval Interval	112 DA-A					
ARM Action Codes		T1	T2	T3	T4	
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	
30			31	32	33	34
1	DMDS 79:21 @ 40 GPA Blocade Mulch	8 a	44 a	16 a	93 ab	35 a
2	DMDS 79:21 @ 40 GPA Metalized Mulch	12 a	61 a	20 a	120 a	43 a
3	DMDS 79:21 @ 50 GPA Blocade Mulch	8 a	55 a	20 a	109 ab	39 a
4	DMDS 79:21 @ 60 GPA Blocade Mulch	10 a	49 a	17 a	93 ab	35 a
5	DMDS 79:21 @ 70 GPA Blocade Mulch	9 a	44 a	16 a	91 b	34 a
6	DMDS 79:21 @ 70 GPA LDPE Mulch	8 a	47 a	17 a	96 ab	35 a
7	Non-treated Control	3 b	16 b	5 b	33 c	12 b
8	MB 50:50 240 lb/A Blocade Mulch	11 a	46 a	17 a	96 ab	37 a
LSD (P=.05)		4.4	17.8	6.3	24.8	9.4
Standard Deviation		2.5	10.2	3.6	14.2	5.4
CV		29.61	22.55	22.52	15.51	16.0
Bartlett's X2		18.659	7.949	12.982	20.133	8.373
P(Bartlett's X2)		0.009*	0.337	0.073	0.005*	0.301

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

Column 31: T1 = ([C23]+[C25])

Column 32: T2 = ([C24]+[C26])

Column 33: T3 = ([C23]+[C25]+[C27]+[C29])

Column 34: T4 = ([C24]+[C26]+[C28]+[C30])

University of Georgia

Weed and tomoato response to DMDS mixtures applied under VIF, metalized and LDPE mulch.

Trial ID: Veg34-07
Location: Ponder Farm

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

General Trial Information

Study Director: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: University of Georgia
Postal Code: 31794 **E-mail:** _____

Investigator: Stanley Culpepper **Title:** Ext. 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: 31794 **Initiation Date:** Jul-17-07
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: LYPES <i>Lycopersicon esculentum</i>		Tomato	
Variety: Bella Rosa	Description: _____		
BBCH Scale: BVSO	Planting Date: Aug-14-07		
Planting Method: transplant	Rate, Unit: 1 per 20 inc		
Depth, Unit: 1.5 in	Perennial Age, Unit: _____		
Row Spacing, Unit: 6 foot	Spacing Within Row, Unit: 20 inch		
Seed Bed: mulch	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: <i>Cyperus rotundus</i>	
Description: Purple nutsedge	

Site and Design			
Plot Width, Unit: 6	FT	Site Type: Ponder Farm	
Plot Length, Unit: 60	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: _____

University of Georgia

	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Application Description

	A
Application Date:	Jul-17-07
Time of Day:	11 am
Application Method:	broadcast
Application Timing:	injected
Application Placement:	8 in
Applied By:	SC and WU
Air Temperature, Unit:	90 F
% Relative Humidity:	48
Wind Velocity, Unit:	2 mph
Wind Direction:	
Dew Presence (Y/N):	n
Water Hardness:	
Soil Temperature, Unit:	91 F
Soil Moisture:	moist
% Cloud Cover:	25
Next Rain Occurred On:	

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	LYPES 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:	

University of Georgia

Application Equipment

	A
Appl. Equipment:	comments
Operating Pressure, Unit:	
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:	
Spray Volume, Unit:	
Mix Size, Unit:	
Spray pH:	
Propellant:	
Tank Mix (Y/N):	

Equipment Comment:

Trt No Treatment Application Comment

Date By Notes

Date By Deviations

Reasons: