University of Georgia

How much can the methyl bromide rate be reduced when applied under metalized mulch?

Trial ID: Veg38-06 Study Dir.: Russ Hamilin
Location: Coggins (McLeon) Investigator: Stanley Culpepper

Reps: 3 Plots: 15 by 300 feet
Spray vol: 14.8 gal/ac Mix size: 1 liters (min 17.363)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Grow Stg	Appl Code	Amt Product to Measure	Plot No. By Rep 1	2	3
1	MB 400 lb							A		101	203	302
	LDPE 1.25 mil black/black							A				
2	MB 300 lb							A		102	201	304
	LDPE 1.25 mil black/black							A				
3	MB 300 lb							A		103	202	303
	Metalized strip 1.3 mil							A				
4	MB 200 lb							A		104	204	301
	Metalized strip 1.3 mil							A				

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: Compare weed response and crop growth to MB applied under LDPE or metalized mulch.

NUTSEDGE RESPONSE:
1. MB at 400 lb/A broadcast was 40% more effective than 300 lb/A on LDPE mulch.
2. MB at 300 lb/A applied under metalized mulch was more effective than 400 lb/A under LDPE.
3. MB at 200 lb/A applied under metalized mulch was less effective than 400 lb/A under LDPE and similarly effective to 300 lb/A applied under LDPE.

PEPPER HEIGHTS
1. In April, 40 pepper plants per plot were measured.
2. Pepper planted on metalized mulch were 7 to 14% shorter than pepper planted on LDPE mulch.

GENERAL COMMENTS:
1. MB was applied with the super bedder plastic layer injecting the fumigant 8 inches deep with 3 knives on a 32 inch bedtop.

University of Georgia

How much can the methyl bromide rate be reduced when applied under metalized mulch?

Trial ID: Veg38-06 Study Dir.: Russ Hamilin
Location: Coggins (McLeon) Investigator: Stanley Culpepper

Weed Code			CYPZZ	CYPZZ	plant 1	plant 2	plant 3	plant 4	plant 5
Rating Data Type			ct	ct	ht	ht	ht	ht	ht
Rating Unit			#/plot	#/plot	cm	cm	cm	cm	cm
Rating Date			Mar-29-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06
Trt-Eval Interval			55 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A
ARM Action Codes									
Trt No.	Treatment Name	Rate Unit	1	2	3	4	5	6	7
1	MB 400 lb LDPE 1.25 mil black/black		9 bc	3 bc	26 a	26 a	26 a	24 ab	24 a
2	MB 300 lb LDPE 1.25 mil black/black		23 a	16 ab	24 a	25 a	25 a	25 a	25 a
3	MB 300 lb Metalized strip 1.3 mil		0 c	0 c	24 a	22 a	22 a	24 ab	24 a
4	MB 200 lb Metalized strip 1.3 mil		19 ab	19 a	22 a	23 a	22 a	22 b	22 a
LSD (P=.05)			10.6	14.5	5.2	5.1	5.6	2.3	3.9
Standard Deviation			5.3	7.2	2.6	2.5	2.8	1.2	1.9
CV			41.6	74.92	10.83	10.58	11.83	4.91	8.18
Bartlett's X2			0.352	9.806	8.297	4.103	6.187	2.335	4.243
P(Bartlett's X2)			0.839	0.02*	0.04*	0.251	0.103	0.506	0.236

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

University of Georgia

Weed Code			plant 6	plant 7	plant 8	plant 9	plant 10	plant 11	plant 12
Rating Data Type			ht	ht	ht	ht	ht	ht	ht
Rating Unit			cm	cm	cm	cm	cm	cm	cm
Rating Date			Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06
Trt-Eval Interval			82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A
ARM Action Codes									
Trt No.	Treatment Name	Rate Rate Unit	8	9	10	11	12	13	14
1	MB 400 lb LDPE 1.25 mil black/black		25 a	26 a	26 a	25 a	25 a	25 a	24 a
2	MB 300 lb LDPE 1.25 mil black/black		25 a	25 a	27 a	24 a	25 a	26 a	24 a
3	MB 300 lb Metalized strip 1.3 mil		24 a	23 a	26 a	24 a	26 a	25 a	23 a
4	MB 200 lb Metalized strip 1.3 mil		18 b	23 a	19 b	23 a	22 b	20 b	22 a
LSD (P=.05)			3.9	3.6	2.1	4.5	2.3	4.0	5.2
Standard Deviation			1.9	1.8	1.1	2.3	1.2	2.0	2.6
CV			8.51	7.32	4.37	9.48	4.76	8.51	11.05
Bartlett's X2			1.928	0.776	2.5	1.563	4.404	3.44	3.374
P(Bartlett's X2)			0.587	0.855	0.475	0.668	0.221	0.179	0.337

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

University of Georgia

Weed Code			plant 13	plant 14	plant 15	plant 16	plant 17	plant 18	plant 19
Rating Data Type			ht	ht	ht	ht	ht	ht	ht
Rating Unit			cm	cm	cm	cm	cm	cm	cm
Rating Date			Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06
Trt-Eval Interval			82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A
ARM Action Codes									
Trt No.	Treatment Name	Rate Unit	15	16	17	18	19	20	21
1	MB 400 lb LDPE 1.25 mil black/black		25 ab	25 a	26 a	26 a	26 a	27 a	26 a
2	MB 300 lb LDPE 1.25 mil black/black		27 a	25 a	25 a	25 a	23 a	24 a	24 a
3	MB 300 lb Metalized strip 1.3 mil		24 bc	26 a	25 a	27 a	25 a	20 a	25 a
4	MB 200 lb Metalized strip 1.3 mil		23 c	23 a	21 b	20 b	21 a	21 a	22 b
LSD (P=.05)			2.1	5.5	3.6	4.8	5.1	9.3	1.9
Standard Deviation			1.1	2.8	1.8	2.4	2.6	4.6	0.9
CV			4.33	11.17	7.5	9.89	10.82	20.19	3.9
Bartlett's X2			0.9	3.15	2.045	5.171	5.266	3.104	2.43
P(Bartlett's X2)			0.638	0.369	0.563	0.16	0.153	0.376	0.297

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

University of Georgia

Weed Code			plant 20	plant 21	plant 22	plant 23	plant 24	plant 25	plant 26
Rating Data Type			ht	ht	ht	ht	ht	ht	ht
Rating Unit			cm	cm	cm	cm	cm	cm	cm
Rating Date			Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06
Trt-Eval Interval			82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A
ARM Action Codes									
Trt No.	Treatment Name	Rate Unit	22	23	24	25	26	27	28
1	MB 400 lb LDPE 1.25 mil black/black		26 a	27 a	28 a	28 a	26 a	25 a	27 a
2	MB 300 lb LDPE 1.25 mil black/black		25 a	29 a	26 a	26 a	24 a	22 a	28 a
3	MB 300 lb Metalized strip 1.3 mil		27 a	24 ab	23 a	25 a	23 a	23 a	24 ab
4	MB 200 lb Metalized strip 1.3 mil		25 a	16 b	22 a	25 a	23 a	22 a	21 b
LSD (P=.05)			2.6	7.9	6.3	2.7	4.8	6.3	3.6
Standard Deviation			1.3	4.0	3.1	1.3	2.4	3.2	1.8
CV			4.97	16.59	12.61	5.15	10.0	13.66	7.27
Bartlett's X2			4.609	2.714	9.302	2.738	2.006	3.113	2.039
P(Bartlett's X2)			0.203	0.438	0.026*	0.434	0.571	0.375	0.361

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

University of Georgia

Weed Code			plant 27	plant 28	plant 29	plant 30	plant 31	plant 32	plant 33
Rating Data Type			ht	ht	ht	ht	ht	ht	ht
Rating Unit			cm	cm	cm	cm	cm	cm	cm
Rating Date			Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06
Trt-Eval Interval			82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A
ARM Action Codes									
Trt No.	Treatment Name	Rate Unit	29	30	31	32	33	34	35
1	MB 400 lb LDPE 1.25 mil black/black		27 a	25 a	25 a	25 a	27 a	25 ab	26 a
2	MB 300 lb LDPE 1.25 mil black/black		24 a	23 a	26 a	26 a	25 a	24 ab	25 a
3	MB 300 lb Metalized strip 1.3 mil		25 a	24 a	24 a	24 a	22 b	20 b	24 a
4	MB 200 lb Metalized strip 1.3 mil		23 a	24 a	23 a	24 a	24 ab	26 a	21 a
LSD (P=.05)			7.8	5.5	3.3	5.5	2.6	5.0	5.7
Standard Deviation			3.9	2.8	1.7	2.7	1.3	2.5	2.9
CV			15.81	11.52	6.85	11.04	5.22	10.54	11.95
Bartlett's X2			5.199	2.824	4.355	4.29	7.131	1.011	3.046
P(Bartlett's X2)			0.158	0.244	0.113	0.232	0.068	0.799	0.385

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

University of Georgia

Weed Code			plant 34	plant 35	plant 36	plant 37	plant 38	plant 39	plant 40
Rating Data Type			ht	ht	ht	ht	ht	ht	ht
Rating Unit			cm	cm	cm	cm	cm	cm	cm
Rating Date			Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06	Apr-25-06
Trt-Eval Interval			82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A	82 DA-A
ARM Action Codes									
Trt No.	Treatment Name	Rate Unit	36	37	38	39	40	41	42
1	MB 400 lb LDPE 1.25 mil black/black		27 a	26 a	27 a	25 ab	29 a	27 a	19 a
2	MB 300 lb LDPE 1.25 mil black/black		25 ab	24 ab	27 a	27 a	27 a	28 a	23 a
3	MB 300 lb Metalized strip 1.3 mil		19 b	22 bc	24 b	23 bc	19 a	23 a	25 a
4	MB 200 lb Metalized strip 1.3 mil		23 ab	20 c	23 b	21 c	21 a	24 a	21 a
LSD (P=.05)			7.7	3.0	2.2	2.9	10.2	4.6	9.0
Standard Deviation			3.8	1.5	1.1	1.4	5.1	2.3	4.5
CV			16.4	6.39	4.38	5.97	21.5	9.03	20.36
Bartlett's X2			5.069	3.268	2.539	4.926	11.057	1.215	3.593
P(Bartlett's X2)			0.167	0.195	0.468	0.177	0.011*	0.749	0.309

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

University of Georgia

Trt No.	Treatment Name	Rate	Rate Unit	43
	Weed Code			Avg40pla
	Rating Data Type			ht
	Rating Unit			cm
	Rating Date			Apr-25-06
	Trt-Eval Interval			82 DA-A
	ARM Action Codes			T1
1	MB 400 lb LDPE 1.25 mil black/black			26 a
2	MB 300 lb LDPE 1.25 mil black/black			25 a
3	MB 300 lb Metalized strip 1.3 mil			24 b
4	MB 200 lb Metalized strip 1.3 mil			22 c
	LSD (P=.05)			1.3
	Standard Deviation			0.6
	CV			2.6
	Bartlett's X2			6.607
	P(Bartlett's X2)			0.086

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)
Column 43: T1 = @AVG([C3].[C42])

University of Georgia

How much can the methyl bromide rate be reduced when applied under metalized mulch?

Trial ID: Veg38-06 Study Dir.: Russ Hamilin
Location: Coggins (McLeon) Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

Study Director: Russ Hamilin **Title:** Coggins Farms
Affiliation: Coggins Farms
Postal Code: _____

Investigator: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: Univ. of Georgia
Postal Code: _____

TRIAL LOCATION

City: Echols Co. **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** good
Postal Code: _____ **Initiation Date:** Feb-02-06
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.	CYPZZ	nutsedge species	

Crop 1: CPSAN bell pepper **Variety:** Heritage
Planting Date: Mar-01-06 **Planting Method:** conventional
Rate: 1 ft **Depth:** 1 in **Perennial Age:** ____ _____
Row Spacing: 5 ft **Spacing Within Row:** 12 inch **Seed Bed:** raised/mulch
Soil Temperature: ____ _ **Soil Moisture:** drip **Emergence Date:** _____

SITE AND DESIGN

Plot Width, Unit: 15 FT **Plot Length, Unit:** 300 FT **Reps:** 3
Site Type: On farm
Tillage Type: conventional **Study Design:** RANDOMIZED COMPLETE BLOCK

Trial Initiation Comments:

	Previous Crops	Previous Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance:

University of Georgia

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

SOIL DESCRIPTION

% Sand: _____ **% OM:** 0. **Texture:** .
% Silt: _____ **pH:** 0. **Soil Name:** _____
% Clay: _____ **CEC:** _____ **Fert. Level:** _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: .
Closest Weather Station: _____ **Distance:** _____ **Unit:** __

APPLICATION DESCRIPTION

	A
Application Date:	Feb-02-06
Time of Day:	all day
Application Method:	in bed
Application Timing:	preplant
Applic. Placement:	in bed
Air Temp., Unit:	60 F
% Relative Humidity:	48
Wind Velocity, Unit:	3 mph
Dew Presence (Y/N):	n
Water Hardness:	
Soil Temp., Unit:	58 F
Soil Moisture:	moist
% Cloud Cover:	25

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	CPSAN preplant
Stage Scale:	not up
Height, Unit:	0 inch

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	CYPZZ preplant
Stage Scale:	not up
Density, Unit:	. .

University of Georgia

APPLICATION EQUIPMENT

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

Trt No	Treatment Application Comment