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Nutsedge response to MB and MIDAS applied under metalized smooth mulch.

Trial ID: Veg26-06
 Location: Ponder 5160

Study Dir.: Stanley Culpepper
 Investigator: Stanley Culpepper

Reps: 3 Plots: 6 by 30 feet
 Spray vol: 14.8 gal/ac Mix size: 1 liters (min .69451)

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate Rate	Grow Unit	Appl Stg	Amt Code	Product to Measure	Plot No. By Rep		
										1	2	3
1	MB 225 LB Metalized Smooth (1 mil)							A		101	204	301
2	MB 225 LB Upside down MS (1 mil)							A		102	203	302
3	MI 225 LB Metalized Smooth (1 mil)							A		103	202	305
4	MI 225 LB Upside down MS (1 mil)							A		104	201	306
5	None Metalized Smooth (1 mil)							A		105	206	303
6	None Upside down MS (1 mil)							A		106	205	304

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= 1 liters (mix size basis).
 * Product amount calculations increased 25 % for overage adjustment.

Trial Comments

OBJECTIVE: Compare MB and MIDAS when applied under metalized mulch with the silver metalized component up or down.

Nutsedge emergence counts:

1. Nutsedge that penetrated the mulch were counted for the entire plot.
2. Main effects were significant.
3. When pooled over mulches, both fumigants even at low rates reduced nutsedge emergence at least 65% at 83 d after fumigating.
4. MB was more effective than MIDAS at controlling nutsedge at both 28 and 83 d after fumigating.
5. When pooled over fumigant option at 83 d, 13 more nutsedge plants per plot were noted with the metalized silver side downward as compared to upward.

Visual control estimates:

1. Main effects were noted.
2. Both fumigants provided at least 81% control at 69 d after fumigating when pooled over mulch, even at the low rate of 225 lb/A broadcast.
3. MB was more effective than MIDAS, when pooled over mulch type.
4. When pooled over fumigant option, the metalized silver side up was 7 to 11% more effective than when facing downwards.

Gas Emission:

1. Gas measurements were taken with GAS-TEC MODEL GV-100 GAS SAMPLING PUMP WITH STANDARD DETECTOR TUBS FOR EACH GAS. A 6.5 inch funnel was glued upside down to the top of each mulch to eliminate cross contamination. At time of measurement a stopper with the detector tub was inserted into the funnel with the measurement made.
2. About twice as much fumigant emission was detected for MB when the metalized mulch was laid with the silver surface down as compared to up for day 0 and day 1. No differences were noted on day 3 but averaging days 1,2, and 3 noted more emission with the silver surface placed downward.
3. For MIDAS, no differences were detected.

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CONCLUSIONS:

1. It is likely the moisture from the soil removed part of the metalized component of the mulch more quickly when facing downward, thereby allowing more MB gas loss.

GENERAL COMMENTS:

1. All fumigant treatments were applied 8 inches deep with a super bedder plastic layer.

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Weed Code	CYPRO	CYPRO	CYPRO	CYPRO	CYPRO	Fumigant	Fumigant	
Crop Code						see comm	see comm	
Rating Data Type	count	count	control	control	control	emissions	emissions	
Rating Unit	#	#	%	%	%	ppm	ppm	
Rating Date	Mar-22-06	May-16-06	Mar-21-06	Apr-07-06	May-02-06	Feb-22-06	Feb-23-06	
Trt-Eval Interval	28 DA-A	83 DA-A	27 DA-A	44 DA-A	69 DA-A	0 DA-A	1 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	MB 225 LB Metalized Smooth (1 mil)	2 d	8 c	97 a	96 a	96 a	18 b	14 b
2	MB 225 LB Upside down MS (1 mil)	2 d	12 c	95 a	93 a	92 a	33 a	35 a
3	MI 225 LB Metalized Smooth (1 mil)	2 d	30 bc	97 a	92 a	94 a	17 b	11 b
4	MI 225 LB Upside down MS (1 mil)	21 c	47 b	80 b	73 b	68 b	16 b	10 b
5	None Metalized Smooth (1 mil)	76 a	103 a	11 c	10 c	0 c	0 c	0 b
6	None Upside down MS (1 mil)	60 b	121 a	0 d	0 d	0 c	0 c	0 b
LSD (P=.05)		12.5	23.3	9.5	7.5	7.5	13.4	18.5
Standard Deviation		6.9	12.8	5.2	4.1	4.1	7.4	10.1
CV		25.37	23.9	8.28	6.8	7.05	52.13	86.99
Bartlett's X2		9.742	10.801	6.16	2.142	1.739	0.968	6.611
P(Bartlett's X2)		0.083	0.055	0.188	0.543	0.628	0.809	0.085

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

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Weed Code	Fumigant	Fumigant
Crop Code	see comm	see comm
Rating Data Type	emissions	total
Rating Unit	ppm	ppm
Rating Date	Feb-24-06	
Trt-Eval Interval	2 DA-A	
ARM Action Codes		T1
Trt No.	Treatment Name	Rate Unit
1	MB 225 LB Metalized Smooth (1 mil)	8 a
2	MB 225 LB Upside down MS (1 mil)	9 a
3	MI 225 LB Metalized Smooth (1 mil)	1 a
4	MI 225 LB Upside down MS (1 mil)	30 bc
5	None Metalized Smooth (1 mil)	74 a
6	None Upside down MS (1 mil)	8 a
		34 b
		0 a
		0 c
		0 a
		0 c
LSD (P=.05)	8.5	30.9
Standard Deviation	4.7	17.0
CV	179.04	59.77
Bartlett's X2	7.989	4.304
P(Bartlett's X2)	0.046*	0.23

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

Column 9: T1 = [6]+[7]+[8]

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

SOIL DESCRIPTION

% Sand: 94 % OM: 1.3 Texture: sand
 % Silt: 2 pH: 6.3 Soil Name: Tifton sandy loam
 % Clay: 4 CEC: _____ Fert. Level: _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

No.	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: _____

Closest Weather Station: _____ Distance: _____ Unit: _____

APPLICATION DESCRIPTION

	A
Application Date:	Feb-22-06
Time of Day:	10 am
Application Method:	in bed
Application Timing:	preplant
Applic. Placement:	8"deep
Air Temp., Unit:	72 F
% Relative Humidity:	44
Wind Velocity, Unit:	2 mph
Dew Presence (Y/N):	n
Water Hardness:	
Soil Temp., Unit:	64 F
Soil Moisture:	moist
% Cloud Cover:	20

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	none
Stage Scale:	preplant
Height, Unit:	

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code, Stage:	CYPRO
Stage Scale:	preplant
Density, Unit:	

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APPLICATION EQUIPMENT

	A
Appl. Equipment:	see
Operating Pressure:	comments
Nozzle Type:	
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