University of Georgia

Squash and cucumber response to Goal, ET, and Roundup applied over mulch prior to transplant.

Trial ID: Veg15-09 Study Director: Stanley Culpepper
Location: Ponder Farm Investigator: Stanley Culpepper

Use 2 liters(s) per treatment mixture to spray 14.8 gal/ac
Plots: 6 by 25 feet

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Growth Stage	Appl Code	Amt Product to Measure	Plot No. By Rep 1	2	3
1	Goal	4	F	1	pt/a	Overmulc	A	16.89 ml/mx	101	201	315
	COC		L	1	% v/v	Overmulc	A	20.0 ml/mx			
	No holes previously										
2	Goal	4	F	1	pt/a	Overmulc	A	16.89 ml/mx	109	209	311
	COC		L	1	% v/v	Overmulc	A	20.0 ml/mx			
	Pepper holes in mulch										
3	Goal	4	F	1	qt/a	Overmulc	A	33.78 ml/mx	102	202	301
	COC		L	1	% v/v	Overmulc	A	20.0 ml/mx			
	No holes previously										
4	Goal	4	F	1	qt/a	Overmulc	A	33.78 ml/mx	110	210	305
	COC		L	1	% v/v	Overmulc	A	20.0 ml/mx			
	Pepper holes in mulch										
5	Goal	4	F	1	pt/a	Overmulc	A	16.89 ml/mx	103	203	302
	Roundup WeatherMax	4.5	L	22	oz/a	Overmulc	A	23.22 ml/mx			
	No holes previously										
6	Goal	4	F	1	pt/a	Overmulc	A	16.89 ml/mx	111	211	306
	Roundup WeatherMax	4.5	L	22	oz/a	Overmulc	A	23.22 ml/mx			
	Pepper holes in mulch										
7	ET	0.208	L	1	oz/a	OVermulc	A	1.056 ml/mx	104	204	314
	COC		L	1	% v/v	Overmulc	A	20.0 ml/mx			
	No holes previously										
8	ET	0.208	L	1	oz/a	OVermulc	A	1.056 ml/mx	112	212	310
	COC		L	1	% v/v	Overmulc	A	20.0 ml/mx			
	Pepper holes in mulch										
9	ET	0.208	L	2	oz/a	OVermulc	A	2.111 ml/mx	105	205	303
	COC		L	1	% v/v	Overmulc	A	20.0 ml/mx			
	No holes previously										
10	ET	0.208	L	2	oz/a	OVermulc	A	2.111 ml/mx	113	213	307
	COC		L	1	% v/v	Overmulc	A	20.0 ml/mx			
	Pepper holes in mulch										
11	ET	0.208	L	1	oz/a	OVermulc	A	1.056 ml/mx	106	206	316
	COC		L	1	% v/v	Overmulc	A	20.0 ml/mx			
	Roundup WeatherMax	4.5	L	22	oz/a	Overmulc	A	23.22 ml/mx			
	No holes previously										
12	ET	0.208	L	1	oz/a	OVermulc	A	1.056 ml/mx	114	214	312
	COC		L	1	% v/v	Overmulc	A	20.0 ml/mx			
	Roundup WeatherMax	4.5	L	22	oz/a	Overmulc	A	23.22 ml/mx			
	Pepper holes in mulch										
13	Roundup WeatherMax	4.5	L	22	oz/a	Overmulc	A	23.22 ml/mx	107	207	304
	No holes previously										
14	Roundup WeatherMax	4.5	L	22	oz/a	Overmulc	A	23.22 ml/mx	115	215	308
	Pepper holes in mulch										
15	Non-treated								108	208	313
	No holes previously										
16	Non-treated								116	216	309
	Pepper holes in mulch										

Sort Order: Treatment

University of Georgia

Squash and cucumber response to Goal, ET, and Roundup applied over mulch prior to transplant.

Trial ID: Veg15-09 Study Director: Stanley Culpepper
Location: Ponder Farm Investigator: Stanley Culpepper

Trial Comments

OBJECTIVE: Determine response of ET and Goal when applied overtop of mulch prior to transplanting squash and cucumber.

Visual Squash Injury:
1. Treatments with ET or Roundup alone or in combination caused no visual injury.
2. Goal 4 F at 1 pt caused 11 to 12 and 6 to 10% stunting with chlorosis at 16 and 35 d after treatment, respectively.
3. Goal 4 F at 1 qt caused 22 to 25 and 23 to 25% stunting with chlorosis at 16 and 35 d after treatment, respectively.
4. Holes in the mulch prior to applications had no negative impact.

Visual Cucumber Injury:
1. Treatments with ET or Roundup alone or in combination caused no visual injury.
2. Goal 4 F at 1 pt caused 8 to 12and 0% stunting with chlorosis at 16 and 35 d after treatment, respectively.
3. Goal 4 F at 1 qt caused 15 to 20 and 0% stunting with chlorosis at 16 and 35 d after treatment, respectively.
4. Holes in the mulch prior to applications had no negative impact.

Plant Height:
1. For squash, no statistical differences were noted; however, a trend for shorter plants was noted with Goal (especially the high rate) applied over mulch. Similar results were also noted for cucumber, although to a lesser degree.

Squash Yield:
1. Marketable squash fruit were harvested three days a week for a total of 14 harvests.
2. ET and Roundup had no impact on early fruit or total fruit produced.
3. When combining all harvests, Goal at 2 pt reduced fruit number at least 25%. No other treatment impacted yield.

Cucumber Yield:
1. Cucumber could not be harvested before deer decided to have a meal.

GENERAL COMMENTS:
1. Applications were made on April 12.
2. Rainfall of 2.41 inches occurred on April 13.
3. Crops were transplanted on April 15 since a rainfall greater than 0.5 inch occurred after herbicide applicaitons.

University of Georgia

Squash and cucumber response to Goal, ET, and Roundup applied over mulch prior to transplant.

Trial ID: Veg15-09 Study Director: Stanley Culpepper
Location: Ponder Farm Investigator: Stanley Culpepper

Trt No.	Treatment Name	Rate	Rate Unit	1	2	3	5	6	7	19	31
Pest Code				CUUPE	CUUPE	CUUPE	CUMSA	CUMSA	CUMSA	AVG10PLA CUUPE	AVG10PLA CUMSA
Crop Code				BVVT	BVVT	BVVT	BVVT	BVVT	BVVT	BVVT	BVVT
BBCH Scale										HEIGHTS	HEIGHTS
Crop Variety Description										CM	CM
Rating Date				4/28/2009	5/8/2009	5/17/2009	4/28/2009	5/8/2009	5/17/2009	5/1/2009	5/1/2009
Rating Data Type				injury	injury	injury	injury	injury	injury	height	height
Rating Unit				%	%	%	%	%	%	cm	cm
Days After Last Applic.				16	26	35	16	26	35	19	19
Trt-Eval Interval				16 DA-A	26 DA-A	35 DA-A	16 DA-A	26 DA-A	35 DA-A	19 DA-A	19 DA-A
ARM Action Codes										T1	T2
1	Goal	1	pt/a	12.3 b	8.3 c	10.0 b	12.3 bc	6.7 ab	0.0 a	12.13 a	8.13 a
	COC	1	% v/v								
	No holes previously										
2	Goal	1	pt/a	11.7 b	6.7 c	6.7 b	8.3 c	6.7 ab	0.0 a	14.47 a	8.10 a
	COC	1	% v/v								
	Pepper holes in mulch										
3	Goal	1	qt/a	25.0 a	23.3 a	23.3 a	15.0 ab	10.0 a	0.0 a	12.10 a	7.23 a
	COC	1	% v/v								
	No holes previously										
4	Goal	1	qt/a	22.7 a	18.3 b	25.0 a	20.7 a	8.3 ab	0.0 a	12.13 a	7.17 a
	COC	1	% v/v								
	Pepper holes in mulch										
5	Goal	1	pt/a	10.0 b	0.0 d	0.0 c	10.3 bc	6.7 ab	0.0 a	16.43 a	8.63 a
	Roundup WeatherMax	22	oz/a								
	No holes previously										
6	Goal	1	pt/a	6.0 c	0.0 d	0.0 c	9.7 bc	4.3 bc	0.0 a	16.30 a	9.30 a
	Roundup WeatherMax	22	oz/a								
	Pepper holes in mulch										
7	ET	1	oz/a	0.0 d	0.0 d	0.0 c	0.0 d	0.0 c	0.0 a	16.60 a	9.67 a
	COC	1	% v/v								
	No holes previously										
8	ET	1	oz/a	0.0 d	0.0 d	0.0 c	0.0 d	0.0 c	0.0 a	16.50 a	9.87 a
	COC	1	% v/v								
	Pepper holes in mulch										
9	ET	2	oz/a	0.0 d	0.0 d	0.0 c	0.0 d	0.0 c	0.0 a	15.83 a	9.97 a
	COC	1	% v/v								
	No holes previously										
10	ET	2	oz/a	0.0 d	0.0 d	0.0 c	0.0 d	0.0 c	0.0 a	16.53 a	9.77 a
	COC	1	% v/v								
	Pepper holes in mulch										
11	ET	1	oz/a	0.0 d	0.0 d	0.0 c	0.0 d	0.0 c	0.0 a	16.10 a	10.27 a
	COC	1	% v/v								
	Roundup WeatherMax	22	oz/a								
	No holes previously										
12	ET	1	oz/a	0.0 d	0.0 d	0.0 c	0.0 d	0.0 c	0.0 a	16.03 a	9.20 a
	COC	1	% v/v								
	Roundup WeatherMax	22	oz/a								
	Pepper holes in mulch										
13	Roundup WeatherMax	22	oz/a	1.7 d	0.0 d	0.0 c	0.0 d	0.0 c	0.0 a	14.70 a	9.57 a
	No holes previously										
14	Roundup WeatherMax	22	oz/a	0.0 d	0.0 d	0.0 c	0.0 d	0.0 c	0.0 a	15.80 a	9.87 a
	Pepper holes in mulch										
15	Non-treated			0.0 d	0.0 d	0.0 c	0.0 d	0.0 c	0.0 a	15.90 a	9.40 a
	No holes previously										
16	Non-treated			0.0 d	0.0 d	0.0 c	0.0 d	0.0 c	0.0 a	15.13 a	10.20 a
	Pepper holes in mulch										
LSD (P=.05)				3.29	4.34	5.04	6.21	4.48	0.00	4.321	2.163
Standard Deviation				1.97	2.60	3.02	3.73	2.69	0.00	2.591	1.297
CV				35.29	73.47	74.39	78.12	100.78	0.0	17.08	14.18
Bartlett's X2				3.989	1.07	0.711	3.081	7.552	0.0	11.482	19.206
P(Bartlett's X2)				0.407	0.784	0.871	0.687	0.183	.	0.718	0.205

University of Georgia

Trt No.	Treatment Name	Rate	Rate Unit	1	2	3	5	6	7	19	31
Pest Code										AVG10PLA	AVG10PLA
Crop Code				CUUPE	CUUPE	CUUPE	CUMSA	CUMSA	CUMSA	CUUPE	CUMSA
BBCH Scale				BVVT	BVVT	BVVT	BVVT	BVVT	BVVT	BVVT	BVVT
Crop Variety Description										HEIGHTS CM	HEIGHTS CM
Rating Date				4/28/2009	5/8/2009	5/17/2009	4/28/2009	5/8/2009	5/17/2009	5/1/2009	5/1/2009
Rating Data Type				injury	injury	injury	injury	injury	injury	height	height
Rating Unit				%	%	%	%	%	%	cm	cm
Days After Last Applic.				16	26	35	16	26	35	19	19
Trt-Eval Interval				16 DA-A	26 DA-A	35 DA-A	16 DA-A	26 DA-A	35 DA-A	19 DA-A	19 DA-A
ARM Action Codes										T1	T2
Replicate F				2.339	1.000	3.251	0.312	0.046	0.000	0.054	3.607
Replicate Prob(F)				0.1138	0.3798	0.0527	0.7343	0.9550	1.0000	0.9479	0.0395
Treatment F				54.953	23.446	22.992	10.220	5.754	0.000	1.195	1.779
Treatment Prob(F)				0.0001	0.0001	0.0001	0.0001	0.0001	1.0000	0.3276	0.0876

Means followed by same letter do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Georgia

Pest Code				HAR1-4		HAR1-4		HAR1-14		HAR1-14		
Crop Code				CUUPE		CUUPE		CUUPE		CUUPE		
BBCH Scale				BVVT		BVVT		BVVT		BVVT		
Crop Variety Description												
Rating Date				11/22/2009		11/22/2009		11/22/2009		11/22/2009		
Rating Data Type				#/PLOT		WEIGHT/LBS		#/PLOT		WEIGHT/LBS		
Rating Unit				#		lbs		#		lbs		
Days After Last Applic.								224		224		
Trt-Eval Interval								224 DA-A		224 DA-A		
ARM Action Codes				T7		T8		T9		T10		
Trt No.	Treatment Name	Rate	Rate Unit	62		63		65		66		
1	Goal	1	pt/a	35.3	a	6.500	a	208.3	ab	47.83	bc	
	COC	1	% v/v									
	No holes previously											
2	Goal	1	pt/a	42.0	a	7.967	a	234.3	a	54.60	ab	
	COC	1	% v/v									
	Pepper holes in mulch											
3	Goal	1	qt/a	20.0	a	3.250	a	151.3	c	35.57	d	
	COC	1	% v/v									
	No holes previously											
4	Goal	1	qt/a	24.3	a	4.767	a	167.0	bc	43.43	cd	
	COC	1	% v/v									
	Pepper holes in mulch											
5	Goal	1	pt/a	50.7	a	9.200	a	245.3	a	59.73	a	
	Roundup WeatherMax	22	oz/a									
	No holes previously											
6	Goal	1	pt/a	43.3	a	8.650	a	245.0	a	57.37	ab	
	Roundup WeatherMax	22	oz/a									
	Pepper holes in mulch											
7	ET	1	oz/a	49.7	a	7.883	a	223.3	a	48.53	bc	
	COC	1	% v/v									
	No holes previously											
8	ET	1	oz/a	43.0	a	7.533	a	228.3	a	48.27	bc	
	COC	1	% v/v									
	Pepper holes in mulch											
9	ET	2	oz/a	42.3	a	8.700	a	231.0	a	56.10	ab	
	COC	1	% v/v									
	No holes previously											
10	ET	2	oz/a	35.3	a	7.167	a	212.3	ab	49.57	abc	
	COC	1	% v/v									
	Pepper holes in mulch											
11	ET	1	oz/a	52.0	a	8.833	a	235.0	a	55.70	ab	
	COC	1	% v/v									
	Roundup WeatherMax	22	oz/a									
	No holes previously											
12	ET	1	oz/a	46.7	a	8.217	a	232.3	a	57.47	ab	
	COC	1	% v/v									
	Roundup WeatherMax	22	oz/a									
	Pepper holes in mulch											
13	Roundup WeatherMax	22	oz/a	48.0	a	9.267	a	242.0	a	60.30	a	
	No holes previously											
14	Roundup WeatherMax	22	oz/a	46.3	a	9.483	a	236.3	a	60.37	a	
	Pepper holes in mulch											
15	Non-treated			50.7	a	8.300	a	224.3	a	51.33	abc	
	No holes previously											
16	Non-treated			36.7	a	5.900	a	223.0	a	52.30	abc	
	Pepper holes in mulch											
LSD (P=.05)				19.89		3.9358		47.06		11.155		
Standard Deviation				11.93		2.3606		28.22		6.691		
CV				28.64		31.06		12.76		12.77		
Bartlett's X2				22.19		17.522		14.207		17.366		
P(Bartlett's X2)				0.103		0.289		0.51		0.297		
Replicate F				0.099		0.126		1.393		0.576		
Replicate Prob(F)				0.9057		0.8818		0.2639		0.5682		
Treatment F				1.827		1.617		2.642		3.062		
Treatment Prob(F)				0.0781		0.1280		0.0114		0.0044		

Means followed by same letter do not significantly differ (P=.05, LSD)
Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

University of Georgia

Squash and cucumber response to Goal, ET, and Roundup applied over mulch prior to transplant.

Trial ID: Veg15-09 Study Director: 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: 31795
Investigator: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: Univ. of Georgia
Postal Code: 31795

Trial Location

City: TyTy **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** good
Postal Code: 31795 **Initiation Date:** 4/12/2009
Country: USA
Directions:

Objectives:

Conclusions:

Crop Description

Crop 1: CUUPE Cucurbita pepo Edible gourd
Variety: Prelude II **Description:** yellow squash
BBCH Scale: BVVT **Planting Date:** 4/15/2009
Planting Method: transplant **Rate, Unit:** 1 foot
Depth, Unit: 2 in
Row Spacing, Unit: 6 feet **Spacing Within Row, Unit:** 12 in
Seed Bed: mulch, raised **Soil Temperature, Unit:** 75 F
Soil Moisture: drip

Crop 2: CUMSA Cucumis sativus Cucumber
Variety: Thunder **Description:** fresh market cucumber
BBCH Scale: BVVT **Planting Date:** 4/15/2009
Planting Method: transplant **Rate, Unit:** 1 foot
Depth, Unit: 2 in
Row Spacing, Unit: 6 feet **Spacing Within Row, Unit:** 12 in
Seed Bed: mulch, raised **Soil Temperature, Unit:** 75 F
Soil Moisture: drip

Pest Description

Code: .

Site and Design

Plot Width, Unit: 6 FT **Site Type:** Ponder research farm
Plot Length, Unit: 25 FT **Tillage Type:** 2nd crop mulch
Replications: 3 **Study Design:** Factorial

Trial Initiation Comments:

Field Prep./Maintenance:

Soil Description

% Sand: 90 **% OM:** 1.0 **Texture:** sand
% Silt: 4 **pH:** 6.2 **Soil Name:** Tifton sandy loam
% Clay: 6

Moisture Conditions

Overall Moisture Conditions: moist, drip irrigation
Closest Weather Station: on site **Distance:** 100 **Unit:** yd

University of Georgia

Application Description

	A
Application Date:	4/12/2009
Time of Day:	6:00 PM
Application Method:	BROADCAST
Application Timing:	OVER MULC
Application Placement:	OVERTOP
Applied By:	Culpepper
Air Temperature, Unit:	77 F
% Relative Humidity:	58
Wind Velocity, Unit:	4 MPH
Dew Presence (Y/N):	N
Soil Temperature, Unit:	85 F
Soil Moisture:	MOIST
% Cloud Cover:	0

Crop Stage At Each Application

	A
Crop 1 Code, BBCH Scale:	CUUPE BVVT
Stage Scale Used:	BBCH
Stage Majority, Percent:	preplant 100
Stage Minimum, Percent:	preplant 100
Stage Maximum, Percent:	preplant 100
Height, Unit:	0 in
Height Minimum, Maximum:	0 0
Crop 2 Code, BBCH Scale:	CUMSA BVVT
Stage Scale Used:	BBCH
Stage Majority, Percent:	preplant 100
Stage Minimum, Percent:	preplant 100
Stage Maximum, Percent:	preplant 100
Height, Unit:	0 in
Height Minimum, Maximum:	0 0

Pest Stage At Each Application

	A
	.
Stage Majority, Percent:	.
Density, Unit:	0. .

Application Equipment

	A
Appl. Equipment:	BACKPACK
Operating Pressure:	24
Pressure Unit:	PSI
Nozzle Type:	FLAT FAN
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 IN
Nozzles/Row:	2
Boom Length, Unit:	4.5 FT
Boom Height, Unit:	15 IN
Ground Speed, Unit:	3 MPH
Carrier:	H20
Spray Volume:	14.8
Volume Unit:	GAL/AC
Propellant:	CO2
Tank Mix (Y/N):	Y