

# University of Georgia

**Cucumber and squash response to 2,4-D applied over mulch prior to transplant.**

Trial ID: Veg27-06  
Location: Ponder 5160

Study Dir.: Stanley Culpepper  
Investigator: Stanley Culpepper

Reps: 3                      Plots: 6 by 20 feet  
Spray vol: 14.8 gal/ac      Mix size: 1 liters (min .46301)

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	No Herbicide Cucumber									101	206	303
2	No Herbicide Squash									104	203	306
3	Salvo (Ester) Cucumber	2	L		0.25	LB A/A	preplant A	A	8.445 ml/mx	102	205	301
4	Slavo (Ester) Squash	2	L		0.25	LB A/A	preplant A	A	8.445 ml/mx	105	202	305
5	Salvo (Ester) Cucumber	2	L		0.5	LB A/A	preplant A	A	16.89 ml/mx	103	204	302
6	Salvo (ester) Squash	2	L		0.5	LB A/A	preplant A	A	16.89 ml/mx	106	201	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
52.782	ml	Salvo (Ester)	2	L	
10.556	ml	Slavo (Ester)	2	L	

\* '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 impact of 2,4-D applied over mulch prior to transplanting squash or cucumber.

#### CROP RESPONSE:

1. Injury increased as rate increased.
2. Injury ranged from 40 to 78% in cucumber and 23 to 54% in squash.
3. Cucumber was more sensitive.

#### CROP HEIGHTS (10 plants per plot measured, MAIN EFFECTS SIGNIFICANT):

1. Pooled over cultivar, 0.25 and 0.5 lb of 2,4-D reduced plant growth 50 and 66% respectively.
2. Cucumber plant growth was reduced slightly more than squash.

#### CROP YIELD:

1. Pooled over cultivar, 0.25 and 0.5 lb of 2,4-D reduced the number of fruit 39 and 59%, respectively.
2. Pooled over cultivar, 0.25 and 0.5 lb of 2,4-D reduced the weight of fruit 50 and 65%, respectively.
3. Squash produced 68% more fruit and 43% more weight than cucumber.

#### GENERAL COMMENTS:

1. Feb 22, 2006: Telone C35 applied in bed over trial.
2. March 8: Mulch laid (flat 15 inch bed top). Herbicides applied after laying mulch.
3. Irrigated trial with 0.5 inch of water on March 9.
4. Crops planted on March 10.

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Location: Ponder 5160

Study Dir.: Stanley Culpepper  
Investigator: Stanley Culpepper

Weed Code	CROP	CROP	CROP	plant 1	plant 2	plant 3	plant 4	plant 5	
Crop Code	injury	injury	injury	CROP	CROP	CROP	CROP	CROP	
Rating Data Type	%	%	%	ht	ht	ht	ht	ht	
Rating Unit	cm	cm	cm	cm	cm	cm	cm	cm	
Rating Date	Mar-31-06	Apr-07-06	Apr-26-06	Apr-04-06	Apr-04-06	Apr-04-06	Apr-04-06	Apr-04-06	
Assessed By	SC	SC	SC						
Trt-Eval Interval	23 DA-A	30 DA-A	49 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	
ARM Action Codes									
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	
		1	2	3	4	5	6	7	
		8							
1	No Herbicide Cucumber	0 c	0 d	0 d	14 a	14 a	13 a	14 a	15 a
2	No Herbicide Squash	0 c	0 d	0 d	13 a	14 a	12 ab	14 a	16 a
3	Salvo (Ester) 0.25 LB A/A Cucumber	52 ab	40 c	42 b	7 b	7 ab	5 c	5 b	6 b
4	Slavo (Ester) 0.25 LB A/A Squash	43 b	37 c	23 c	10 ab	4 b	8 bc	9 ab	9 b
5	Salvo (Ester) 0.5 LB A/A Cucumber	60 a	78 a	65 a	7 b	7 ab	7 bc	3 b	3 b
6	Salvo (ester) 0.5 LB A/A Squash	57 a	53 b	50 b	9 b	6 b	11 ab	6 b	5 b
LSD (P=.05)		10.9	6.1	10.8	3.6	7.1	4.7	6.4	5.7
Standard Deviation		6.0	3.4	5.9	2.0	3.9	2.6	3.5	3.1
CV		16.97	9.72	19.9	19.75	44.84	28.7	42.09	34.92
Bartlett's X2		3.909	1.374	2.537	1.19	8.892	7.661	2.263	2.277
P(Bartlett's X2)		0.271	0.712	0.281	0.946	0.064	0.176	0.812	0.685

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	Avg10pla	harv 1	harv 1	
Crop Code	CROP	CROP	CROP	CROP	CROP	CROP	CROP	CROP	
Rating Data Type	ht	ht	ht	ht	ht	ht	#	wt/lb	
Rating Unit	cm	cm	cm	cm	cm	cm	fruit	fruit	
Rating Date	Apr-04-06	Apr-04-06	Apr-04-06	Apr-04-06	Apr-04-06	Apr-04-06	Apr-20-06	Apr-20-06	
Assessed By	27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	43 DA-A	43 DA-A	
Trt-Eval Interval	27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	27 DA-A	43 DA-A	43 DA-A	
ARM Action Codes						T9			
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
9	10	11	12	13	14	15	16		
1	No Herbicide Cucumber	14 a	14 a	15 a	14 a	15 a	14 a	0 b	0 b
2	No Herbicide Squash	14 a	14 a	14 a	15 a	14 a	14 a	9 a	2 a
3	Salvo (Ester) 0.25 LB A/A Cucumber	6 bc	8 b	8 b	7 bc	4 b	6 bc	0 b	0 b
4	Slavo (Ester) 0.25 LB A/A Squash	10 ab	11 ab	8 b	10 ab	7 b	9 b	0 b	0 b
5	Salvo (Ester) 0.5 LB A/A Cucumber	2 c	2 c	0 c	2 c	2 b	4 c	0 b	0 b
6	Salvo (ester) 0.5 LB A/A Squash	4 c	2 c	4 bc	7 bc	7 b	6 bc	0 b	0 b
LSD (P=.05)	6.0	4.9	5.3	6.3	5.0	2.7	1.1	0.7	
Standard Deviation	3.3	2.7	2.9	3.5	2.8	1.5	0.6	0.4	
CV	39.31	32.04	36.38	38.38	33.5	16.81	40.09	89.19	
Bartlett's X2	10.031	5.804	6.306	9.297	4.488	2.966	0.0	0.0	
P(Bartlett's X2)	0.074	0.326	0.177	0.098	0.482	0.705	.	.	

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

Column 14: T9 = @AVG([4].[13])

## University of Georgia

Weed Code	harv 1	harv 1	harv 2	harv 2	harv 2	harv 2	harv 3	harv 3		
Crop Code	CROP	CROP	CROP	CROP	CROP	CROP	CROP	CROP		
Rating Data Type	#	wt/lb	#	wt/lb	#	wt/lb	#	wt/lb		
Rating Unit	cull	cull	fruit	fruit	cull	cull	fruit	fruit		
Rating Date	Apr-20-06	Apr-20-06	Apr-24-06	Apr-24-06	Apr-24-06	Apr-24-06	Apr-26-06	Apr-26-06		
Assessed By	43 DA-A	43 DA-A	47 DA-A	47 DA-A	47 DA-A	47 DA-A	49 DA-A	49 DA-A		
Trt-Eval Interval	43 DA-A	43 DA-A	47 DA-A	47 DA-A	47 DA-A	47 DA-A	49 DA-A	49 DA-A		
ARM Action Codes										
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate		
		Unit	Unit	Unit	Unit	Unit	Unit	Unit		
		17	18	19	20	21	22	23	24	
1	No Herbicide Cucumber	0 c	0 c	2 d	1 c	0 a	0 a	8 a	3 a	
2	No Herbicide Squash	3 a	0 a	33 a	9 a	1 a	1 a	5 bc	1 bc	
3	Salvo (Ester) Cucumber	0.25 LB A/A	0 c	0 c	0 d	0 c	0 a	0 d	0 d	
4	Slavo (Ester) Squash	0.25 LB A/A	1 b	0 b	16 b	3 b	0 a	0 a	7 ab	1 b
5	Salvo (Ester) Cucumber	0.5 LB A/A	0 c	0 c	0 d	0 c	0 a	0 d	0 d	
6	Salvo (ester) Squash	0.5 LB A/A	0 c	0 c	8 c	1 c	0 a	0 a	4 c	1 c
LSD (P=.05)		1.0	0.1	3.8	1.2	0.9	0.7	2.5	0.5	
Standard Deviation		0.5	0.0	2.1	0.7	0.5	0.4	1.4	0.3	
CV		82.16	52.76	21.35	30.28	424.26	424.26	34.48	27.85	
Bartlett's X2		0.857	4.8	6.876	9.337	0.0	0.0	2.448	2.838	
P(Bartlett's X2)		0.355	0.028*	0.076	0.025*	.	.	0.485	0.417	

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

## University of Georgia

Weed Code	harv 3	harv 3	harv 4	harv 4	harv 4	harv 4	harv 5	harv 5	
Crop Code	CROP	CROP	CROP	CROP	CROP	CROP	CROP	CROP	
Rating Data Type	#	wt/lb	#	wt/lb	#	wt/lb	#	wt/lb	
Rating Unit	cull	cull	fruit	fruit	cull	cull	fruit	fruit	
Rating Date	Apr-26-06	Apr-26-06	Apr-28-06	Apr-28-06	Apr-28-06	Apr-28-06	May-01-06	May-01-06	
Assessed By	49 DA-A	49 DA-A	51 DA-A	51 DA-A	51 DA-A	51 DA-A	54 DA-A	54 DA-A	
Trt-Eval Interval	49 DA-A	49 DA-A	51 DA-A	51 DA-A	51 DA-A	51 DA-A	54 DA-A	54 DA-A	
ARM Action Codes									
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
1	No Herbicide Cucumber	0 b	0 b	9 a	4 a	0 a	0 a	7 bc	3 a
2	No Herbicide Squash	5 a	1 a	11 a	2 b	0 a	0 a	13 a	3 ab
3	Salvo (Ester) 0.25 LB A/A Cucumber	0 b	0 b	1 b	0 cd	0 a	0 a	3 cd	1 cd
4	Slavo (Ester) 0.25 LB A/A Squash	4 a	0 ab	11 a	2 b	0 a	0 a	9 b	2 bc
5	Salvo (Ester) 0.5 LB A/A Cucumber	0 b	0 b	0 b	0 d	0 a	0 a	0 d	0 d
6	Salvo (ester) 0.5 LB A/A Squash	2 ab	0 ab	12 a	1 bc	0 a	0 a	6 bc	1 cd
LSD (P=.05)		3.3	0.4	5.5	1.2	0.0	0.0	4.1	1.3
Standard Deviation		1.8	0.2	3.0	0.6	0.0	0.0	2.2	0.7
CV		102.53	135.22	41.44	47.0	0.0	0.0	35.19	41.32
Bartlett's X2		4.545	4.07	2.342	3.146	0.0	0.0	5.598	11.571
P(Bartlett's X2)		0.103	0.131	0.673	0.534	.	.	0.347	0.041*

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

## University of Georgia

Weed Code	harv 5	harv 5	harv 6	harv 6	harv 6	harv 6	harv 7	harv 7	
Crop Code	CROP	CROP	CROP	CROP	CROP	CROP	CROP	CROP	
Rating Data Type	#	wt/lb	#	wt/lb	#	wt/lb	#	wt/lb	
Rating Unit	cull	cull	fruit	fruit	cull	cull	fruit	fruit	
Rating Date	May-01-06	May-01-06	May-03-06	May-03-06	May-03-06	May-03-06	May-05-06	May-05-06	
Assessed By									
Trt-Eval Interval	54 DA-A	54 DA-A	56 DA-A	56 DA-A	56 DA-A	56 DA-A	58 DA-A	58 DA-A	
ARM Action Codes									
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	
		33	34	35	36	37	38	39	40
1	No Herbicide Cucumber	1 b	0 b	3 c	1 bc	0 a	0 a	10 cd	3 ab
2	No Herbicide Squash	8 a	1 a	17 a	4 a	2 a	0 a	26 a	6 a
3	Salvo (Ester) 0.25 LB A/A Cucumber	0 b	0 b	3 c	1 b	0 a	0 a	9 cd	3 ab
4	Slavo (Ester) 0.25 LB A/A Squash	4 b	0 ab	10 b	2 b	1 a	0 a	22 ab	4 ab
5	Salvo (Ester) 0.5 LB A/A Cucumber	0 b	0 b	1 c	0 c	0 a	0 a	4 d	1 b
6	Salvo (ester) 0.5 LB A/A Squash	4 b	0 b	7 bc	1 bc	1 a	0 a	14 bc	4 ab
LSD (P=.05)		4.3	0.5	6.0	1.1	1.8	0.3	8.1	3.3
Standard Deviation		2.3	0.3	3.3	0.6	1.0	0.2	4.5	1.8
CV		86.32	85.91	47.88	37.42	137.69	147.97	31.86	49.54
Bartlett's X2		6.364	5.203	9.071	5.53	2.918	0.858	1.858	2.637
P(Bartlett's X2)		0.095	0.158	0.106	0.355	0.572	0.93	0.868	0.756

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

# University of Georgia

Weed Code	harv 7	harv 7	harv 8	harv 8	harv 8	harv 8	harv1&2	harv1&2	harv1&2	
Crop Code	CROP	CROP	CROP	CROP	CROP	CROP	CROP	CROP	CROP	
Rating Data Type	#	wt/lb	#	wt/lb	#	wt/lb	#	wt/lb	#	
Rating Unit	cull	cull	fruit	fruit	cull	cull	fruit	fruit	cull	
Rating Date	May-05-06	May-05-06	May-09-06	May-09-06	May-09-06	May-09-06				
Assessed By										
Trt-Eval Interval	58 DA-A	58 DA-A	62 DA-A	62 DA-A	62 DA-A	62 DA-A				
ARM Action Codes							T1	T2	T3	
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit	
		41	42	43	44	45	46	47	48	49
1	No Herbicide Cucumber	0 a	0 a	14 a	7 a	0 a	0 ab	2 d	1 c	0 b
2	No Herbicide Squash	1 a	0 a	19 a	8 a	0 a	0 b	42 a	12 a	3 a
3	Salvo (Ester) 0.25 LB A/A Cucumber	0 a	0 a	9 a	4 a	1 a	0 ab	0 d	0 c	0 b
4	Slavo (Ester) 0.25 LB A/A Squash	0 a	0 a	17 a	5 a	1 a	1 a	16 b	3 b	1 b
5	Salvo (Ester) 0.5 LB A/A Cucumber	0 a	0 a	10 a	5 a	0 a	0 b	0 d	0 c	0 b
6	Salvo (ester) 0.5 LB A/A Squash	2 a	1 a	13 a	5 a	0 a	0 b	8 c	1 c	0 b
LSD (P=.05)		3.0	0.9	9.7	4.5	1.9	0.8	3.6	1.4	1.5
Standard Deviation		1.7	0.5	5.3	2.5	1.0	0.5	2.0	0.8	0.8
CV		298.8	286.8	39.09	42.95	184.93	166.49	17.16	28.63	109.26
Bartlett's X2		1.239	0.732	2.231	2.747	4.818	7.056	6.44	10.876	0.148
P(Bartlett's X2)		0.266	0.392	0.816	0.739	0.186	0.07	0.092	0.012*	0.70

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

Column 47: T1 = ([C15]+[C19])

Column 48: T2 = ([C16]+[C20])

Column 49: T3 = ([C17]+[C21])

## University of Georgia

Weed Code	harv1&2 CROP	harv1-8 CROP	harv1-8 CROP	harv1-8 CROP	harv1-8 CROP	
Crop Code	wt/lb	#	wt/lb	#	wt/lb	
Rating Data Type	cull	fruit	fruit	cull	cull	
Rating Unit						
Rating Date						
Assessed By						
Trt-Eval Interval						
ARM Action Codes	T4	T5	T6	T7	T8	
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	
		50	51	52	53	
		54	54	53	54	
1	No Herbicide Cucumber	0 b	54 c	23 b	1 c	0 cd
2	No Herbicide Squash	1 a	134 a	35 a	19 a	3 a
3	Salvo (Ester) 0.25 LB A/A Cucumber	0 b	24 d	10 cd	2 c	1 bcd
4	Slavo (Ester) 0.25 LB A/A Squash	0 b	92 b	19 b	11 b	2 ab
5	Salvo (Ester) 0.5 LB A/A Cucumber	0 b	15 d	7 d	0 c	0 d
6	Salvo (ester) 0.5 LB A/A Squash	0 b	64 c	14 c	10 b	1 bc
LSD (P=.05)		0.7	18.8	4.8	5.6	1.4
Standard Deviation		0.4	10.3	2.6	3.1	0.8
CV		224.72	16.18	14.77	43.39	59.64
Bartlett's X2		5.7	6.329	4.39	8.019	4.495
P(Bartlett's X2)		0.017*	0.276	0.495	0.091	0.343

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

Column 50: T4 = ([C18]+[C22])

Column 51: T5 = ([C15]+[C19]+[C23]+[C27]+[C31]+[C35]+[C39]+[C43])

Column 52: T6 = ([C16]+[C20]+[C24]+[C28]+[C32]+[C36]+[C40]+[C44])

Column 53: T7 = ([C17]+[C21]+[C25]+[C29]+[C33]+[C37]+[C41]+[C45])

Column 54: T8 = ([C18]+[C22]+[C26]+[C30]+[C34]+[C38]+[C42]+[C46])





# University of Georgia

	Previous Crops	Previous Pesticides	Year
1.			

### 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 loamy sand	
% Clay: 4	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:	Mar-08-06
Time of Day:	9 m
Application Method:	Broadcast
Application Timing:	preplant
Applic. Placement:	overmulch
Air Temp., Unit:	65 F
% Relative Humidity:	57
Wind Velocity, Unit:	3 mph
Dew Presence (Y/N):	n
Water Hardness:	
Soil Temp., Unit:	68 F
Soil Moisture:	fair
% Cloud Cover:	15

### CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	CUUPE preplant
Stage Scale:	not up
Height, Unit:	0 inch
Crop 2 Code, Stage:	CUMSA preplant
Stage Scale:	not up
Height, Unit:	0 inch

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## WEED STAGE AT EACH APPLICATION

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

## APPLICATION EQUIPMENT

	A
Appl. Equipment:	backpack
Operating Pressure:	24
Nozzle Type:	flat fan
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 inch
Nozzles/Row:	2
Band Width, Unit:	
Boom Length, Unit:	4.5 ft
Boom Height, Unit:	15 inch
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