

University of Georgia

Various pepper types response to Dual Magnum PRE under plastic.

Trial ID: Veg14-03
Location: Ponder farm

Study Dir.:
Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

Study Director: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: University of Georgia
Postal Code: 31794
Investigator: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: University of Georgia
Postal Code: 31794

TRIAL LOCATION

City: TyTy **Trial Status:** completed
State/Prov.: Ga **Trial Reliability:** excellent
Country: U.S.A. **Initiation Date:** Feb-25-03

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	MOLVE	carpetweed	
2.	AMAPA	Palmer amaranth	
3.	DTTAE	crowfootgrass	
4.	RCHSC	Florida pusley	

Crop 1: CPSAN pepper **Variety:** see comments
Planting Date: Mar-18-03 **Planting Method:** transplant
Rate: 1 per foot **Depth:** 2 in
Row Spacing: 18 inch **Spacing Within Row:** 12 inch **Seed Bed:** plastic
Soil Temperature: 72 F **Soil Moisture:** drip

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 25 FT **Reps:** 3
Site Type: Research Station
Tillage Type: Plasticulture **Study Design:** SPLIT-PLOT

SOIL DESCRIPTION

% Sand: 94 **% OM:** 1.3 **Texture:** Sand
% Silt: 2 **pH:** 6.1 **Soil Name:** Tifton sandy loam
% Clay: 4

APPLICATION DESCRIPTION

	A
Application Date:	Mar-18-03
Time of Day:	2:00pm
Application Method:	broadcast
Application Timing:	PRE
Applic. Placement:	underplas
Air Temp., Unit:	78 F
% Relative Humidity:	75
Wind Velocity, Unit:	1 mph
Dew Presence (Y/N):	N
Soil Temp., Unit:	72 F
Soil Moisture:	drip
% Cloud Cover:	25

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	CPSAN before
Stage Scale:	transplan
Height, Unit:	0. .

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WEED STAGE AT EACH APPLICATION

A	
Weed 1 Code, Stage:	MOLVE PRE
Stage Scale:	.
Density, Unit:	3 ydsq
Weed 2 Code, Stage:	AMAPA PRE
Stage Scale:	.
Density, Unit:	1 ydsq
Weed 3 Code, Stage:	DTTAE PRE
Stage Scale:	.
Density, Unit:	3 ydsq
Weed 4 Code, Stage:	RCHSC PRE
Stage Scale:	.
Density, Unit:	2 ydsq

APPLICATION EQUIPMENT

A	
Appl. Equipment:	super bed
Operating Pressure:	29
Nozzle Type:	flat fan
Nozzle Size:	11002
Nozzle Spacing, Unit:	12 inch
Nozzles/Row:	6
Boom Length, Unit:	4.5 feet
Boom Height, Unit:	15 inch
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	25 GPA
Propellant:	CO2
Tank Mix (Y/N):	Y

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Various pepper types response to Dual Magnum PRE under plastic.

Trial ID: Veg14-03

Study Dir.:

Location: Ponder farm

Investigator: Stanley Culpepper

Weed Code	CPSAN	CPSAN	CPSAN	AMAPA	RCHSC	MOLVE	DTTAE	Plant 1			
Crop Code	stunting	stunting	stunting	control	control	control	control	CPSAN			
Rating Data Type	percent	percent	percent	percent	percent	percent	percent	height			
Rating Unit								cm			
Rating Date	Apr-21-03	May-11-03	May-14-03	May-14-03	May-14-03	May-14-03	May-14-03	Apr-30-03			
Trt-Eval Interval	55 DA-A	54 DA-A	57 DA-A	57 DA-A	57 DA-A	57 DA-A	57 DA-A	64 DA-A			
ARM Action Codes											
# Subsamples, Dec.											
Trt No.	Treatment Name	Rate	Unit	1	2	3	4	5	6	7	8
1	Cultivar A Dual Magnum	1.2	pt/a	10.7	4.0	7.3	100.0	100.0	100.0	100.0	25.3
2	Cultivar A None			0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.7
3	Cultivar B Dual Magnum	1.2	pt/a	8.0	3.3	5.0	100.0	100.0	100.0	100.0	27.0
4	Cultivar B None			0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.7
5	Cultivar C Dual Magnum	1.2	pt/a	5.0	0.0	0.0	100.0	100.0	96.7	100.0	19.7
6	Cultivar C None			0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.7
LSD (P=.05)				8.39	6.00	8.92	0.00	0.00	4.29	0.00	7.61
Standard Deviation				4.61	3.30	4.90	0.00	0.00	2.36	0.00	4.18
CV				116.88	269.99	238.6	0.0	0.0	4.77	0.0	17.68
Bartlett's X2				0.49	0.063	0.009	0.0	0.0	0.0	0.0	0.518
P(Bartlett's X2)				0.783	0.801	0.924	0.991

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

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Weed Code	Plant 2 CPSAN	Plant 3 CPSAN	Plant 4 CPSAN	Plant 5 CPSAN	Plant 6 CPSAN	Plant 7 CPSAN	Plant 8 CPSAN	Plant 9 CPSAN			
Crop Code											
Rating Data Type	height	height	height	height	height	height	height	height			
Rating Unit	cm	cm	cm	cm	cm	cm	cm	cm			
Rating Date	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03			
Trt-Eval Interval	43 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A			
ARM Action Codes											
# Subsamples, Dec.											
Trt No.	Treatment Name	Rate	Unit	9	10	11	12	13	14	15	16
1	Cultivar A Dual Magnum	1.2	pt/a	22.0	24.0	22.3	23.7	23.3	23.7	19.3	23.3
2	Cultivar A None			24.3	26.3	26.3	25.7	24.7	27.3	25.0	25.0
3	Cultivar B Dual Magnum	1.2	pt/a	24.0	22.3	22.7	26.7	24.0	23.3	23.0	23.0
4	Cultivar B None			24.3	22.3	24.3	23.3	25.7	25.3	25.3	24.7
5	Cultivar C Dual Magnum	1.2	pt/a	24.3	25.0	21.7	21.3	23.3	22.0	21.3	24.3
6	Cultivar C None			25.3	24.7	23.7	22.0	25.3	26.0	25.0	22.3
LSD (P=.05)				5.81	7.15	4.07	5.29	4.75	5.63	4.66	5.29
Standard Deviation				3.19	3.93	2.24	2.91	2.61	3.10	2.56	2.91
CV				13.27	16.31	9.52	12.23	10.71	12.58	11.06	12.23
Bartlett's X2				8.616	5.931	12.095	2.39	5.601	5.124	5.445	3.086
P(Bartlett's X2)				0.125	0.313	0.034*	0.793	0.347	0.401	0.364	0.687

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

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Weed Code	Plant 10 CPSAN	Plant 11 CPSAN	Plant 12 CPSAN	Plant 13 CPSAN	Plant 14 CPSAN	Plant 15 CPSAN	Plant 16 CPSAN	Plant 17 CPSAN
Crop Code	height	height	height	height	height	height	height	height
Rating Data Type	cm	cm	cm	cm	cm	cm	cm	cm
Rating Unit	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03
Trt-Eval Interval	43 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A	43 DA-A
ARM Action Codes								
# Subsamples, Dec.								
Trt No.	17	18	19	20	21	22	23	24
Treatment Name								
Rate								
Unit								
1 Cultivar A Dual Magnum	20.3	21.0	23.0	23.7	22.7	22.3	19.7	22.3
Rate	1.2							
Unit	pt/a							
2 Cultivar A None	26.0	24.0	21.0	24.7	26.7	26.3	25.0	27.7
3 Cultivar B Dual Magnum	23.3	25.0	24.0	24.0	21.7	21.3	22.3	22.0
Rate	1.2							
Unit	pt/a							
4 Cultivar B None	25.7	24.3	26.3	25.3	24.3	23.7	25.0	25.7
5 Cultivar C Dual Magnum	23.7	24.7	27.0	25.3	24.0	23.7	22.3	24.0
Rate	1.2							
Unit	pt/a							
6 Cultivar C None	23.0	21.7	22.7	24.3	23.0	22.0	23.3	25.7
LSD (P=.05)	5.94	5.35	6.64	6.21	5.98	4.06	5.75	6.92
Standard Deviation	3.27	2.94	3.65	3.41	3.28	2.23	3.16	3.80
CV	13.8	12.55	15.21	13.9	13.85	9.62	13.77	15.48
Bartlett's X2	1.009	4.361	5.182	6.736	3.357	6.0	2.518	5.902
P(Bartlett's X2)	0.962	0.499	0.394	0.241	0.645	0.306	0.774	0.316

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

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Weed Code	Plant 18 CPSAN	Plant 19 CPSAN	Plant 20 CPSAN	AVG CPSAN	Plant 1 CPSAN	Plant 2 CPSAN	Plant 3 CPSAN	Plant 4 CPSAN			
Crop Code											
Rating Data Type	height	height	height	height	height	height	height	height			
Rating Unit	cm	cm	cm	cm	cm	cm	cm	cm			
Rating Date	Apr-30-03	Apr-30-03	Apr-30-03	Apr-30-03	May-20-03	May-20-03	May-20-03	May-20-03			
Trt-Eval Interval	43 DA-A	43 DA-A	43 DA-A	43 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A			
ARM Action Codes				T1							
# Subsamples, Dec.				1							
Trt No.	Treatment Name	Rate	Unit	25	26	27	28	30	31	32	33
1	Cultivar A Dual Magnum	1.2	pt/a	20.7	18.7	21.0	22.1	46.0	41.3	41.0	39.0
2	Cultivar A None			26.7	26.3	25.3	25.4	41.0	24.7	45.0	42.7
3	Cultivar B Dual Magnum	1.2	pt/a	25.3	24.3	23.0	23.6	52.7	50.7	49.0	50.7
4	Cultivar B None			25.0	23.7	26.3	24.8	54.0	54.0	51.0	54.0
5	Cultivar C Dual Magnum	1.2	pt/a	22.3	24.0	24.0	23.4	52.7	54.0	51.7	56.3
6	Cultivar C None			25.0	23.3	24.3	23.7	54.7	55.3	54.7	56.3
LSD (P=.05)				4.52	6.10	5.89	3.05	9.99	16.36	14.49	8.62
Standard Deviation				2.48	3.35	3.24	1.68	5.49	8.99	7.97	4.74
CV				10.28	14.34	13.5	7.04	10.95	19.27	16.35	9.5
Bartlett's X2				11.008	4.204	1.208	0.655	8.802	17.257	14.81	3.535
P(Bartlett's X2)				0.051	0.52	0.944	0.985	0.117	0.004*	0.011*	0.618

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

Column 28: T1 = @AVG([C8].[C27])

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Weed Code	Plant 5 CPSAN	Plant 6 CPSAN	Plant 7 CPSAN	Plant 8 CPSAN	Plant 9 CPSAN	Plant 10 CPSAN	Plant 11 CPSAN	Plant 12 CPSAN			
Crop Code											
Rating Data Type	height	height	height	height	height	height	height	height			
Rating Unit	cm	cm	cm	cm	cm	cm	cm	cm			
Rating Date	May-20-03	May-20-03	May-20-03	May-20-03	May-20-03	May-20-03	May-20-03	May-20-03			
Trt-Eval Interval	63 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A			
ARM Action Codes											
# Subsamples, Dec.											
Trt No.	Treatment Name	Rate	Unit	34	35	36	37	38	39	40	41
1	Cultivar A Dual Magnum	1.2	pt/a	44.0	41.7	43.7	48.3	44.0	43.0	46.3	42.7
2	Cultivar A None			49.3	42.7	43.3	45.0	46.7	46.0	47.7	45.3
3	Cultivar B Dual Magnum	1.2	pt/a	49.0	57.0	47.7	50.0	42.3	50.0	50.7	49.7
4	Cultivar B None			51.7	60.0	52.3	61.0	50.3	53.7	52.0	54.3
5	Cultivar C Dual Magnum	1.2	pt/a	52.0	55.0	52.7	50.7	51.7	56.3	46.7	55.3
6	Cultivar C None			51.7	54.0	49.7	54.7	47.0	51.0	48.0	51.0
LSD (P=.05)				9.37	8.67	6.45	10.80	6.35	9.15	9.36	14.62
Standard Deviation				5.15	4.77	3.55	5.94	3.49	5.03	5.14	8.04
CV				10.38	9.22	7.36	11.5	7.42	10.06	10.59	16.16
Bartlett's X2				4.534	3.396	4.348	6.936	2.348	4.084	6.224	6.498
P(Bartlett's X2)				0.475	0.639	0.50	0.225	0.799	0.537	0.285	0.261

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

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Weed Code	Plant 13 CPSAN	Plant 14 CPSAN	Plant 15 CPSAN	Plant 16 CPSAN	Plant 17 CPSAN	Plant 18 CPSAN	Plant 19 CPSAN	Plant 20 CPSAN
Crop Code	height	height	height	height	height	height	height	height
Rating Data Type	cm	cm	cm	cm	cm	cm	cm	cm
Rating Unit	May-20-03	May-20-03	May-20-03	May-20-03	May-20-03	May-20-03	May-20-03	May-20-03
Rating Date	63 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A	63 DA-A
Trt-Eval Interval								
ARM Action Codes								
# Subsamples, Dec.								
Trt No.								
Treatment Name								
Rate								
Unit								
1 Cultivar A Dual Magnum	42	43	44	45	46	47	48	49
Rate	45.0	43.3	45.0	43.3	43.0	43.0	42.3	44.0
Unit	1.2 pt/a							
2 Cultivar A None	43.0	45.7	44.3	43.0	47.0	46.0	47.0	39.0
3 Cultivar B Dual Magnum	47.7	50.7	54.3	47.7	50.0	48.0	52.7	46.7
Rate								
Unit	1.2 pt/a							
4 Cultivar B None	52.7	52.0	56.7	50.3	51.7	50.7	51.3	57.7
5 Cultivar C Dual Magnum	55.7	59.0	51.3	53.0	52.7	55.0	51.3	58.0
Rate								
Unit	1.2 pt/a							
6 Cultivar C None	53.0	53.0	51.3	53.7	49.7	54.0	49.3	49.0
LSD (P=.05)	10.09	9.19	9.90	12.58	6.55	13.27	8.20	5.86
Standard Deviation	5.55	5.05	5.44	6.92	3.60	7.30	4.51	3.22
CV	11.21	9.98	10.78	14.26	7.35	14.75	9.2	6.57
Bartlett's X2	7.923	8.624	3.901	2.122	3.965	5.846	8.868	3.094
P(Bartlett's X2)	0.161	0.125	0.564	0.832	0.555	0.211	0.114	0.685

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

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Weed Code		AVG CPSAN	CPSAN	CPSAN	CPSAN	CPSAN	CPSAN	CPSAN	CPSAN		
Crop Code		height	>large frt	>large wt	>large frt	>large wt	>large frt	>large wt	smalls		
Rating Data Type		cm	no	lb	no	lb	no.	lbs	no.		
Rating Unit		May-20-03	Jun-06-03	Jun-06-03	Jun-01-03	Jun-01-03	Jun-26-03	Jun-26-03	Jun-26-03		
Rating Date		63 DA-A	80 DA-A	80 DA-A	75 DA-A	75 DA-A	100 DA-A	100 DA-A	100 DA-A		
Trt-Eval Interval											
ARM Action Codes		T2									
# Subsamples, Dec.		1									
Trt No.	Treatment Name	Rate	Unit								
		50		52	53	54	55	56	57	58	
1	Cultivar A Dual Magnum	1.2	pt/a	43.5	6.0	2.6	0.0	0.0	25.7	11.9	62.7
2	Cultivar A None			43.7	4.7	2.1	0.0	0.0	18.7	8.7	75.7
3	Cultivar B Dual Magnum	1.2	pt/a	49.8	0.0	0.0	68.7	11.9	46.7	12.3	129.7
4	Cultivar B None			53.6	0.0	0.0	99.0	17.7	35.3	9.7	109.7
5	Cultivar C Dual Magnum	1.2	pt/a	53.6	0.0	0.0	56.0	6.0	270.7	28.2	89.7
6	Cultivar C None			52.1	0.0	0.0	48.7	4.4	254.7	26.5	65.0
LSD (P=.05)		5.45		2.29	0.92	26.86	4.59	53.56	7.76	56.32	
Standard Deviation		2.99		1.26	0.51	14.77	2.52	29.44	4.27	30.96	
CV		6.07		70.9	65.17	32.53	37.8	27.11	26.33	34.89	
Bartlett's X2		5.353		0.815	0.638	7.251	11.323	20.308	8.161	8.274	
P(Bartlett's X2)		0.374		0.367	0.424	0.064	0.01*	0.001*	0.148	0.142	

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

Column 49: T2 = @AVG([30].[49])

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Weed Code	CPSAN	Total	Total
Crop Code	small wt	CPSAN	CPSAN
Rating Data Type	lbs	fruit	weight
Rating Unit	no	no	lbs
Rating Date	Jun-26-03	Dec-31-03	Dec-31-03
Trt-Eval Interval	100 DA-A	288 DA-A	288 DA-A
ARM Action Codes		T3	T4
# Subsamples, Dec.		0	
Trt No.	Treatment Name	Rate	Unit
59		61	62
1	Cultivar A Dual Magnum	1.2	pt/a
20.7		94	35.3
2	Cultivar A None		
24.7		99	35.4
3	Cultivar B Dual Magnum	1.2	pt/a
14.9		245	39.2
4	Cultivar B None		
14.7		244	42.0
5	Cultivar C Dual Magnum	1.2	pt/a
3.9		416	38.0
6	Cultivar C None		
3.1		368	34.0
LSD (P=.05)	7.90	85.6	13.55
Standard Deviation	4.34	47.0	7.45
CV	31.8	19.24	19.96
Bartlett's X2	16.472	9.552	9.397
P(Bartlett's X2)	0.006*	0.089	0.094

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

Column 58: T3 = ([52]+[54]+[56]+[58])

Column 59: T4 = [53]+[55]+[57]+[59]

Trial Comments

OBJECTIVE: Evaluate tolerance of several types of pepper to Dual Magnum.

RESULTS:

Visual Injury (main effects were significant):

- 1) Pooled over herbicide, no differences in cultivars were noted.
- 2) Pooled over cultivars, Dual stunted pepper growth 8% at 33 d after planting. No stunting was noted at 55 d after planting.

Height Measurements Averaged Over 20 Plants Per Plot (main effects were significant):

- 1) Pooled over cultivars, Dual tended to stunt (P = 0.0733) pepper at 42 d after planting. No trend for stunting (P = 0.5783) was noted at 62 d after planting.

YIELDS From 14 Plants Per Plot (main effects were significant):

- 1) There was no hint of a trend for reduction in yield from Dual treatments. If anything there tended to be a hint for increased yield.

WEED CONTROL (All plots were maintained weed free for 6 weeks).

1. Dual provided excellent late-season control of Palmer amaranth, Florida pusley, carpetweed and crowfootgrass.

GENERAL COMMENTS:

- 1) Telone C35 applied 1 week prior to laying plastic. Laid plastic with super bedder applying herbicide treatment after bed was formed but just prior to laying plastic (single operation).
- 2) Cultivar A = Lexington Bell, Cultivar B = Biscayne, Cultivar C = Tula.