

University of Georgia

Six sweet corn cultivars response to Option applied 21 DAP.

Trial ID: Veg25-03

Study Dir.: Culpepper and Grey

Location: Ponder farm (5158)

Investigator: Stanley Culpepper

GENERAL TRIAL INFORMATION

Study Director: Culpepper and Grey

Title: Weed Science

Affiliation: University of Georgia

Postal Code: 31794

Investigator: Culpepper and Grey

Title: Weed Science

Affiliation: University of Georgia

Postal Code: 31794

TRIAL LOCATION

City: TyTy

Trial Status: completed

State/Prov.: Ga

Trial Reliability: excellent

Postal Code: 31794

Initiation Date: Mar-29-03

Country: U.S.A.

Conducted Under GLP (Y/N): N

Conducted Under GEP (Y/N): N

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	.		

Crop 1: ZEAMS sweet corn

Variety: various

Planting Date: Mar-29-03

Planting Method: strip till

Row Spacing: 36 inch

Seed Bed: flat

Soil Temperature: 67 F

Soil Moisture: moist

Emergence Date: Apr-02-03

SITE AND DESIGN

Plot Width, Unit: 6 FT

Plot Length, Unit: 25 FT

Reps: 4

Site Type: research station

Tillage Type: Strip till

Study Design: SPLIT-PLOT

SOIL DESCRIPTION

% Sand: 94

% OM: 1.3

Texture: sand

% Silt: 2

pH: 5.7

Soil Name: Tifton sandy loam

% Clay: 4

Overall Moisture Conditions: wet

APPLICATION DESCRIPTION

	A
Application Date:	Apr-24-03
Time of Day:	8:00am
Application Method:	broadcast
Application Timing:	21 DAP
Applic. Placement:	overtop
Air Temp., Unit:	72 F
% Relative Humidity:	69
Wind Velocity, Unit:	2 mph
Dew Presence (Y/N):	Y
Soil Temp., Unit:	69 F
Soil Moisture:	perfect
% Cloud Cover:	0

CROP STAGE AT EACH APPLICATION

	A
Crop 1 Code, Stage:	ZEAMS POST
Stage Scale:	V4-V5
Height, Unit:	8.5 inch

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WEED STAGE AT EACH APPLICATION

	A
	.
Stage Scale:	.
Density, Unit:	. .

APPLICATION EQUIPMENT

	A
Appl. Equipment:	backpack
Operating Pressure:	22
Nozzle Type:	flat fan
Nozzle Size:	11002
Nozzle Spacing, Unit:	18 inch
Boom Length, Unit:	4.5 feet
Boom Height, Unit:	15 inch
Ground Speed, Unit:	3 mph
Carrier:	water
Spray Volume, Unit:	14.8 GPA
Propellant:	CO2
Tank Mix (Y/N):	Y

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Weed Code		visual	visual	visual	plant1	plant2	plant3	plant4	plant5	
Crop Code		ZEAMS	ZEAMS	ZEAMS	ZEAMS	ZEAMS	ZEAMS	ZEAMS	ZEAMS	
Rating Data Type		injury	injury	injury	heights	heights	heights	heights	heights	
Rating Unit		percent	percent	percent	cm	cm	cm	cm	cm	
Rating Date		Apr-30-03	May-05-03	May-14-03	May-01-03	May-01-03	May-01-03	May-01-03	May-01-03	
Trt-Eval Interval		6 DA-A	64 DA-A	20 DA-A	7 DA-A	7 DA-A	7 DA-A	7 DA-A	7 DA-A	
ARM Action Codes										
Trt No.	Treatment Name	Rate	Rate	Rate	Rate	Rate	Rate	Rate	Rate	
		Unit	Unit	Unit	Unit	Unit	Unit	Unit	Unit	
		1	2	3	4	5	6	7	8	
1	No Option GSS 0966				25.5	25.0	24.8	26.0	22.5	
2	No Option BSS 0977				25.5	25.5	24.0	24.5	23.3	
3	No Option Prime Plus				23.0	23.0	24.5	23.0	22.3	
4	No Option Big Time				20.8	17.3	18.3	19.8	17.5	
5	No Option Summer sweet				21.3	21.5	21.8	21.5	18.3	
6	No Option Vail				17.5	17.0	17.3	16.0	18.0	
7	Option MSO UAN (28%) GSS 0966	1.75 oz/a 1.5 pt/a 3.8 pt/a	17.0	8.3	0.0	23.0	20.8	21.3	21.5	22.3
8	Option MSO UAN (28%) BSS 0977	1.75 oz/a 1.5 pt/a 3.8 pt/a	15.6	7.3	0.0	21.3	17.8	21.3	16.5	20.5
9	Option MSO UAN (28%) Prime Plus	1.75 oz/a 1.5 pt/a 3.8 pt/a	16.3	6.5	0.0	18.8	20.0	15.8	21.0	22.3
10	Option MSO UAN (28%) Big Time	1.75 oz/a 1.5 pt/a 3.8 pt/a	13.1	3.8	0.0	14.5	18.3	18.3	14.5	16.8
11	Option MSO UAN (28%) Summer sweet	1.75 oz/a 1.5 pt/a 3.8 pt/a	19.0	4.3	0.0	14.8	17.3	17.3	16.5	18.3
12	Option MSO UAN (28%) Vail	1.75 oz/a 1.5 pt/a 3.8 pt/a	18.1	3.8	0.0	17.3	18.5	17.3	18.5	17.0
LSD (P=.05)			7.32	2.19	0.00	3.39	3.85	3.20	3.79	3.61
Standard Deviation			5.07	1.52	0.00	2.35	2.67	2.22	2.62	2.50
CV			61.38	53.97	0.0	11.61	13.24	11.02	13.16	12.56
Bartlett's X2			4.756	9.882	0.0	16.875	12.457	5.588	13.787	17.712
P(Bartlett's X2)			0.446	0.079	.	0.112	0.33	0.849	0.245	0.089

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

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Weed Code	plant6 ZEAMS	plant7 ZEAMS	plant8 ZEAMS	plant9 ZEAMS	plant10 ZEAMS	Average ZEAMS	plant1 ZEAMS	plant2 ZEAMS			
Crop Code	heights	heights	heights	heights	heights	heights	heights	heights			
Rating Data Type	cm	cm	cm	cm	cm	cm	cm	cm			
Rating Unit											
Rating Date	May-01-03	May-01-03	May-01-03	May-01-03	May-01-03	May-01-03	May-12-03	May-12-03			
Trt-Eval Interval	7 DA-A	7 DA-A	7 DA-A	7 DA-A	7 DA-A	7 DA-A	18 DA-A	18 DA-A			
ARM Action Codes						T3					
Trt No.	Treatment Name	Rate	Unit	9	10	11	12	13	14	15	16
1	No Option GSS 0966			24.3	24.3	23.5	24.0	25.0	24.5	54.3	49.5
2	No Option BSS 0977			25.5	22.3	24.5	25.3	26.3	24.7	54.5	53.8
3	No Option Prime Plus			24.3	21.5	21.3	21.0	23.5	22.7	47.5	50.5
4	No Option Big Time			18.3	17.3	14.5	19.3	19.8	18.3	39.8	41.8
5	No Option Summer sweet			17.0	17.8	17.5	17.5	20.0	19.4	45.3	43.8
6	No Option Vail			17.8	17.3	17.0	18.3	16.8	17.3	46.5	41.5
7	Option MSO UAN (28%) GSS 0966	1.75 1.5 3.8	oz/a pt/a pt/a	22.0	19.8	22.0	19.3	21.3	21.3	47.5	47.0
8	Option MSO UAN (28%) BSS 0977	1.75 1.5 3.8	oz/a pt/a pt/a	22.3	21.8	21.5	21.0	21.8	20.6	52.0	53.0
9	Option MSO UAN (28%) Prime Plus	1.75 1.5 3.8	oz/a pt/a pt/a	21.3	22.3	21.5	21.3	20.8	20.5	43.5	44.5
10	Option MSO UAN (28%) Big Time	1.75 1.5 3.8	oz/a pt/a pt/a	17.0	12.5	15.0	16.8	17.3	16.1	36.5	36.0
11	Option MSO UAN (28%) Summer sweet	1.75 1.5 3.8	oz/a pt/a pt/a	18.0	19.5	18.5	16.8	16.8	17.4	41.5	45.8
12	Option MSO UAN (28%) Vail	1.75 1.5 3.8	oz/a pt/a pt/a	17.5	16.3	18.0	18.0	17.0	17.5	43.8	47.3
LSD (P=.05)		4.33	5.12	4.09	5.51	5.23	2.24	11.88	13.11		
Standard Deviation		3.00	3.54	2.83	3.82	3.62	1.55	8.23	9.08		
CV		14.69	18.32	14.49	19.23	17.68	7.77	17.87	19.66		
Bartlett's X2		11.524	14.339	13.343	8.605	6.409	10.597	24.398	11.68		
P(Bartlett's X2)		0.40	0.215	0.271	0.658	0.845	0.478	0.011*	0.388		

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

Column 14: T3 = @AVG([C4].[C13])

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Weed Code	plant3 ZEAMS heights cm	plant4 ZEAMS heights cm	plant5 ZEAMS heights cm	plant6 ZEAMS heights cm	plant7 ZEAMS heights cm	plant8 ZEAMS heights cm	plant9 ZEAMS heights cm	plant10 ZEAMS heights cm			
Crop Code	May-12-03	May-12-03	May-12-03	May-12-03	May-12-03	May-12-03	May-12-03	May-12-03			
Rating Data Type	18 DA-A	18 DA-A	18 DA-A	18 DA-A	18 DA-A	18 DA-A	18 DA-A	18 DA-A			
Rating Unit											
Rating Date											
Trt-Eval Interval											
ARM Action Codes											
Trt No.	Treatment Name	Rate	Unit	17	18	19	20	21	22	23	24
1	No Option GSS 0966			48.0	57.0	55.3	52.5	55.5	48.5	47.8	53.3
2	No Option BSS 0977			50.0	51.0	52.5	51.3	46.8	52.8	57.5	58.3
3	No Option Prime Plus			49.8	46.0	51.3	48.5	48.8	50.5	51.0	52.3
4	No Option Big Time			41.3	42.0	43.0	44.3	45.5	41.0	36.8	37.5
5	No Option Summer sweet			33.8	41.8	43.3	44.0	46.0	41.0	47.5	48.3
6	No Option Vail			47.0	45.8	47.8	47.8	47.3	44.8	46.8	47.5
7	Option MSO UAN (28%) GSS 0966	1.75 1.5 3.8	oz/a pt/a pt/a	45.0	46.8	50.3	52.0	45.0	48.5	49.0	50.0
8	Option MSO UAN (28%) BSS 0977	1.75 1.5 3.8	oz/a pt/a pt/a	53.8	51.5	52.0	52.5	52.3	53.0	51.3	53.8
9	Option MSO UAN (28%) Prime Plus	1.75 1.5 3.8	oz/a pt/a pt/a	43.5	48.0	47.3	43.5	42.8	45.8	48.3	49.8
10	Option MSO UAN (28%) Big Time	1.75 1.5 3.8	oz/a pt/a pt/a	37.8	36.0	32.3	31.5	33.8	30.8	38.5	40.8
11	Option MSO UAN (28%) Summer sweet	1.75 1.5 3.8	oz/a pt/a pt/a	47.8	48.0	45.8	41.8	43.0	43.5	44.5	45.0
12	Option MSO UAN (28%) Vail	1.75 1.5 3.8	oz/a pt/a pt/a	46.5	46.3	51.8	41.5	46.5	44.3	40.5	48.8
LSD (P=.05)				12.24	9.89	9.73	9.10	8.90	8.79	10.68	10.88
Standard Deviation				8.47	6.85	6.74	6.30	6.17	6.09	7.40	7.54
CV				18.69	14.67	14.13	13.73	13.38	13.43	15.88	15.46
Bartlett's X2				20.533	18.527	17.64	15.04	11.518	8.929	10.455	12.607
P(Bartlett's X2)				0.039*	0.07	0.09	0.181	0.401	0.628	0.49	0.32

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

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Weed Code	Crop Code	Rating Data Type	Rating Unit	Rating Date	Trt-Eval Interval	ARM Action Codes	Average ZEAMS heights cm	ZEAMS Total Wt lb/plot	ZEAMS cull fruit #	ZEAMS marketable #	ZEAMS market wt lbs
							May-12-03 18 DA-A T2	Jun-09-03 46 DA-A	Jun-09-03 46 DA-A	Jun-09-03 46 DA-A	Jun-09-03 46 DA-A
Trt No.	Treatment Name	Rate	Unit	25	26	27	28	29			
1	No Option GSS 0966			52.2	27.6	47.3	37.5	17.4			
2	No Option BSS 0977			52.8	28.7	38.3	42.0	19.9			
3	No Option Prime Plus			49.6	26.9	53.8	36.5	15.7			
4	No Option Big Time			41.3	23.2	44.3	30.0	13.0			
5	No Option Summer sweet			43.5	28.7	36.0	42.0	20.6			
6	No Option Vail			46.3	28.4	51.5	36.0	16.2			
7	Option MSO UAN (28%) GSS 0966	1.75 1.5 3.8	oz/a pt/a pt/a	48.1	29.1	45.5	41.3	17.6			
8	Option MSO UAN (28%) BSS 0977	1.75 1.5 3.8	oz/a pt/a pt/a	52.5	29.8	54.5	42.0	18.4			
9	Option MSO UAN (28%) Prime Plus	1.75 1.5 3.8	oz/a pt/a pt/a	45.7	28.1	47.0	40.3	17.5			
10	Option MSO UAN (28%) Big Time	1.75 1.5 3.8	oz/a pt/a pt/a	35.4	24.1	44.5	35.0	14.8			
11	Option MSO UAN (28%) Summer sweet	1.75 1.5 3.8	oz/a pt/a pt/a	44.7	28.9	37.8	43.8	20.3			
12	Option MSO UAN (28%) Vail	1.75 1.5 3.8	oz/a pt/a pt/a	45.7	27.1	48.0	35.5	15.6			
LSD (P=.05)				7.39	3.93	13.02	10.83	4.86			
Standard Deviation				5.12	2.72	9.02	7.50	3.37			
CV				11.01	9.89	19.74	19.5	19.52			
Bartlett's X2				15.853	9.838	7.414	11.951	9.371			
P(Bartlett's X2)				0.147	0.545	0.765	0.367	0.588			

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

Column 25: T2 = @AVG([C15].[C24])

Trial Comments

OBJECTIVE: Determine sensitivity of several sweet corn cultivars to Option applied POST.

VISUAL CROP RESPONSE:

- 1) Corn was stunted 13 to 19% at 6 DAT, regardless of cultivar.
- 2) Corn was stunted 4 to 8% at 11 DAT, regardless of cultivar. The more aggressive cultivars appeared to be more stunted.
- 3) Corn stunting was no longer visible at 20 DAT.

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CORN HEIGHT MEASUREMENTS (average 10 plants per plot):

- 1) Applying Option to GSS 0966, BSS 0977, and Prime Plus reduced plant heights 13 to 16% at 7 DAT. Other cultivars were not stunted at this time. Stunting was more detectable in the aggressively growing, larger cultivars.
- 2) By 18 DAT, no impact on plant heights were detected.

CORN YIELDS (1 row of the entire plot was harvested):

- 1) Option did not impact yield or quality.

GENERAL COMMENTS:

- 1) Corn came up very aggressively and continued and aggressive growth throughout the season.