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CARIBBEAN FOOD CROPS SOCIETY

PROCEEDINGS



**ELEVENTH ANNUAL
MEETING**

EVALUATION OF CUCUMBER (*CUCUMIS SATIVUS*)
VARIETIES IN THE LEEWARD ISLANDS.¹

by

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INTRODUCTION

The production of cucumbers in the Leeward Islands, has until recently been seriously affected by Powdery Mildew (*Erysiphe cichoracearum*). However, with the introduction of the fungicide, 'Benlate' the incidence of the disease has been arrested and it is now possible to grow the crop successfully. With the elimination of the disease problem, it was decided to compare the performance of Ashley, (long regarded as the best variety for the region) with five other commercially available varieties on an all year round basis.

MATERIAL AND METHODS

Nine trials were laid down either with 6 x 4 randomised complete block or 6 x 6 Latin Square designs to compare the performance of the following varieties:— Ashley, Cherokee (hybrid), Gemini (hybrid), Marketer, Palomar and Poinsett.

1. Paper presented at the 11th Annual Meeting of the Caribbean Food Crops Society, Barbados, July, 1973.
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There were 144 experimental plants per plot in six rows 90 cm apart with the plants spaced 30 cm apart within the row. An application of 12-12-12 NPK fertilizer was made at the rate of 568 kg/ha at the 3-4 leaf stage of development.

The crop was protected against insect and disease pest attack by spraying with Dipterox and/or Basudin (Dizdion) together with Benlate. Dithane M 45 was used at times to guard against Powdery Mildew.

The experimental sites were as follows:—

Island	Location	Soil Type
Antigua St. Kitts	Diamonds Mt. Pleasant	Fitches clay (Grumusol) Sandy Bay Loam (Protosol)

RESULTS AND DISCUSSION

The planting dates of the nine trials carried out extended from 24 May 1971 to 1 March 1972 with harvesting periods from 19th July to 15th May 1972. There were at least three other trials which would have supplied information for the complete year 1971-72 but the data could not be analysed statistically because of losses due to praedial larceny and in one case poor establishment when birds destroyed the young seedlings.

However, it can be seen that cucumber can be produced all year round provided that soil moisture conditions are not limiting. The most important insect pest was a serpentine leaf miner, but this was controlled to a reasonable extent by weekly spraying with Basudin. The variety Marketer was always seriously affected by Angular Leaf Spot (*Pseudomonas lachrymans*) particularly in St. Kitts. In Table 1, the mean yields of marketable cucumbers together with information on

rainfall, dates of planting and harvesting are shown. The hybrid varieties gave yields that were significantly higher than the standard Ashley.

If the yields of the six varieties are averaged over the nine trials, then the results are as follows:

<i>Variety</i>	<i>Tons/hectare</i>
Gemini	39.1
Cherokee	37.7
Poinsett	34.3
Ashley	33.1
Palomar	32.5
Marketer	32.1

With regard to fruit quality, the hybrids were more uniform with more fruit in the US Grade 1 class, and earliest compared with the others. It is therefore recommended that the hybrids Gemini and Cherokee be used in commercial production since they have multi-resistance or tolerance to a wide range of diseases of cucumber (Gemini is not resistant to Powdery Mildew), and the plant protection programme should be less costly than would be the case using the other cultivars evaluated.

SUMMARY

Nine trials were carried out in Antigua and St. Kitts during the period May 1971 to March 1972 to compare the performance of six varieties of cucumber (*Cucumis sativus*). The results averaged over the nine trials showed the mean yields of marketable cucumber in tons/hectare to be Gemini 39.1; Cherokee, 17.7; Poinsett, 34.3; Ashley, 33.1; Palomar, 32.5; Marketer, 32.1.

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Table 1
Mean Yields of Marketable Cucumbers in Tons/hectare (Means having the same letters are not significantly different at the 5.0% level of Duncan's Multiple Range Test)

Expt. No.	Design	Date		Varieties	Yield	Average Wt. fruit Kg	Notes & Rainfall
		Planting	Harvesting				
1	6 x 4 RCB	24 May 1971	19 July -	Ashley	50.7	0.26	Established during dry period but yield satisfactory. No fertilizer applied (9.03 inches).
			30 August 1971	Cherokee	49.7	0.23	
				Gemini	48.2	0.28	
				Palomar	47.4	0.27	
				Marketer	47.4	0.27	
	Poinsett	45.2	0.22				
2	6 x 6 Latin Square	5 July 1971	25 Aug -	Gemini	23.8a	0.31	(13.44 inches)
			7 October 1971	Poinsett	20.1ab	0.38	
				Cherokee	19.7ab	0.28	
				Palomar	14.9 bc	0.31	
				Marketer	13.2 bc	0.24	
	Ashley	12.5 bc	0.28				
3	6 x 6 Latin Square	28 July 1971	13 Sept--	Gemini	73.8a	0.38	Fruits attacked by an insect borer in late stages of harvest. Hybrids were earliest. (16.67 inches)
			11 November 1971	Poinsett	72.8a	0.38	
				Cherokee	68.8ab	0.39	
				Ashley	65.9ab	0.38	
				Marketer	59.2ab	0.36	
	Palomar	54.1 b	0.35				

Table 1 Cont'd
Mean Yields Marketable Cucumbers in Tons/hectare (Means having the same letters are not significantly different at the 5.0% level of Duncan's Multiple Range Test)

Expt. No.	Design	Date		Varieties	Yield	Average Wt. fruit Kg	Notes & Rain-fall
		Planting	Hi-vesting				
4	6 x 4 RCB	5 August 1971	20 Sept-	Cherokee	41.2a	0.25	Some plants damaged by herbicide spray but recovered. (15.26 inches)
			8 November 1971	Palomar	36.3ab	0.28	
				Gemini	36.3ab	0.25	
				Poinsett	35.1ab	0.22	
				Marketer	33.6 b	0.28	
				Ashley	29.9 b	0.24	
5	6 x 6 Latin Square	29 Sept. 1972	15 November -	Cherokee	36.3a	*	(15.92 inches)
			22 December 1971	Gemini	32.5a		
				Ashley	34.9a		
				Palomar	25.6ab		
				Poinsett	25.6 b		
				Marketer	17.5 b		
6	6 x 4 RCB	21 Oct. 1971	7 December 1971 - 17 Jan. 1972	Cherokee	62.2a	0.25	Good performance despite very uneven distribution of
				Gemini	57.6ab	0.32	
				Poinsett	51.0ab	0.26	
				Palomar	43.9 b	0.30	

Table 1 -- Cont'd
Mean Yields Marketable Cucumbers in Tons/hectare (Means having the same letters are not significantly different at the 5.0% level of Duncan's Multiple Range Test)

Expt. No.	Design	Date		Varieties	Yield	Average Wt. fruit Kg	Notes & Rain-fall	
		Planting	Harvesting					
6	6 x 4 RCB	21 Oct. 1971	7 December 1971-17 Jan. 1972		Ashley	43.2 b	0.29	rainfall; 1.62 in. in Nov. and 8.07 in. December. Plants were water-logged in December. (15.32 inches).
					Marketer	43.0 b	0.31	
7	6 x 5 RCB	9 Nov. 1971	31 Dec. - 31 Jan. 1 972		Palomar	11.6	0.29	(8.86 inches)
					Poinsett	11.1	0.27	
					Gemini	11.1	0.28	
					Cherokee	9.8	0.26	
					Marketer	8.7	0.28	
Ashley	7.6	0.28						
8	6 x 4 RCB	3 Dec. 1971	17 Jan. - 13 March 1972		Marketer	54.4	0.27	(16.05 inches)
					Gemini	45.6a	0.25	
					Palomar	45.5a	0.26	
					Ashley	39.7ab	0.24	
					Cherokee	35.5 b	0.21	
Poinsett	35.2 b	0.21						

Table 1 --- Concluded

Mean Yields Marketable Cucumbers in Tons/hectare (Means having the same letters are not significantly different at the 5.0% level of Duncan's Multiple Range Test)

Expt. No.	Design	Date		Varieties	Yield	Average Wt. fruit Kg.	Notes & Rain-fall
		Planting	Harvesting				
9	6 x 6 Latin Square	1 March 1972	20 April -	Gemini	20.5	0.27	Only 2.11 inches of rain in April; Early die back of plants; (9.35 inches).
			15 May 1972	Cherokee	16.2a	0.21	
				Poinsett	13.6ab	0.21	
				Ashley	13.2ab	0.22	
				Palomar	13.1ab	0.24	
				Marketer	11.6 b	0.24	