CARIBBEAN FOOD CROPS SOCIETY

PROCEEDINGS

ELEVENTH ANNUAL MEETING

THE INFLUENCE OF PLANT DENSITY ON SWEET PEPPER *(CAPSICUM ANNUM)* YIELDS IN ST. KITTS. [1]

by

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INTRODUCTION

In this paper the results of a sweet pepper spacing trial carried out in St. Kitts during 1971 are represented.

MATERIALS AND METHODS

On 25 May 1971 a 5x4 RCB spacing trial was established at Mt. Pleasant Estate, St. Kitts using the sweet pepper cultivar California Wonder 300. There were 144 experimental plants to each plot with the following treatments.

Treatment	Distance		Density
	Between row	Within row	Plants/hectare
A	45.7	30.5	71,736
B	45.7	45.7	47,881
C	45.7	61.0	35,868
D	61.0	30.5	53,734
E	61.0	61.0	26,874

1. Paper presented at the 11th Annual Meeting of the Caribbean Food Crops Society, Barbados, July, 1973.
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Seedlings were raised in nursery beds, and soon after transplanting, an application of 12-12-12 NPK fertilizer was made at the rate of 5.7 kg/ha. Dacthal was also applied at the rate of 5.7 kg/ha. A routine spray programme was carried out using Sevin or Dipterex at weekly intervals. The fungicides Dithane M 45 or Antracol were at times added to the spray.

RESULTS AND DISCUSSION

Analysis of the data was on the basis of single plant yields in order to overcome the problem of introducing errors by correcting yields to represent the original stand count in plots where experimental plants were lost. The results are shown in Table 1, where mean yields of marketable sweet pepper fruit in tons/ha are given according to treatment.

It would seem that at low plant densities (26,874 plants/hectare) the yield of fruit per plant was significantly higher than that obtained at higher densities (71,736 plants/hectare). However, the difference in single plant yield did not produce a higher yield per hectare, for in terms of total yield per hectare, the higher densities were significantly better. The density 47.5 x 30.5 cm seems a satisfactory spacing for sweet peppers.

SUMMARY

The optimum density for sweet pepper in St. Kitts was determined using the cultivar California Wonder 300 at five densities, viz:

Between Row	Within Row	Plants/ hectare
cm	cm	
45.7	30.5	71,736
45.7	45.7	47,881
45.7	61.0	35,868
61.0	30.5	53,734
61.0	61.0	26,874

At low plant densities the yield of fruit per plant was significantly higher than at high densities, but this difference was not high enough to make up for the greater yield per hectare at the higher densities. The density 45.7 cm x 30.5 cm (71,736 plants/hectare) seems a satisfactory spacing for sweet peppers.

ACKNOWLEDGEMENT

The author wishes to thank Messrs C. A Quashie and T. Caines Technical Assistants, Regional Field Experimental Programme, University of the West Indies for their help in carrying out this work.

TABLE 1

Mean Yield of Sweet Pepper fruit per plant (kg) and estimated yields tons/ha

Between Row cm	Within Row cm	Density Plants/ hectare	Mean Yield Fruit per plant (kg)	Estimated Yield in Tons/ha
E 61.0	61.0	26,874	0.43 a	11.5
C 45.7	61.0	35,868	0.42 ab	14.6
B 45.7	45.7	47,881	0.39 ab	18.7
D 61.0	30.5	53,734	0.32 bc	17.2
A 45.7	30.5	71,736	0.28 c	20.1

Note: Means having the same letters are not significantly different at the 5.0% level of Duncan's Multiple Range Test.