

Abstract

SPATIAL ARRANGEMENT EFFECTS ON THE NET YIELD AND QUALITY OF YOUNG MAIZE (*Zea mays* L.)

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Fresh young maize cobs (*Zea mays* L.) are not readily available in Trinidad and Tobago. Spatial arrangements, A: 75 cm x 7.4 cm, B: 60 cm x 9.2 cm, C: 50 cm x 11cm and D: 30 cm x 18.4 cm, within a fixed plant population of 180,000 plants ha⁻¹, were investigated in 2000 and 2002 to determine the effect on the net yield of baby corn 2 days after silking (DAS). The variety of corn used was UW 7 Sweet Corn, a synthetic open pollinated variety developed at the University of the West Indies, St. Augustine.

As the inter-row spacing decreased and the intra-row spacing increased from treatments A through D there was a decrease in the number of barren plants. The net yield was inversely related to the number of barren plants. As the number of barren plants increased there was a reduction in the net yield of the young maize cobs. Treatment A had the lowest net yield and treatment D the highest net yield in both 2000 and 2002. The overall net yield from the respective treatments were primarily a function of the number of barren plants within each treatment and the rainfall availability and distribution during the cropping period. The treatment means for the net yield kg ha⁻¹ of young cobs

were 2 427 kg ha⁻¹, 2 597 kg ha⁻¹, 2 957 kg ha⁻¹ and 3 129 kg ha⁻¹ for treatments A, B, C and D respectively.

The effect of spatial arrangements on the crude protein, crude fiber and ether extract were not significant for 1-5 DAS. There was however a linear trend in the crude protein and crude fiber levels through 1-5 DAS. The levels of ether extract fluctuated as a possible consequence of the relative preferential development of the kernel components at specific points in time and the preferential synthesis of proteins to fats. The results also revealed that cob weight and cob diameter increased at a greater rate than cob length.

Keywords: spatial arrangement, crude protein, crude fibre , ether extract.