

## ABSTRACT

Fifty-six open-pollinated derived sweet potato seedlings from seven lines were evaluated and selections made.

Parameters used in this evaluation included tuber yield, yield components, tuber quality, dry matter production and distribution, morphological characters as well as growth analysis.

Results showed wide differences in tuber yield between the 56 sweet potato seedlings in a continuously varying range of 250-3421 gm/plant. The seedlings were conveniently classified into high (990-3000 gm/plant) and low (200-910 gm/plant) yielding groups. The high yielding group included all Tis 2328, Tis 2525 and C26 and the low yielding group included all Tic-1, Tic-4, 02/59 and C9 lines.

High yielding seedlings generally obtained high tuber yield through high TDM production accompanied with high harvest index. Harvest index emerged as the most reliable index of sweet potato crop performance in this study, although there were difficulties with its acceptance as general index of tuber yield.

Growth analysis showed that the major sources of yield difference between high and low HI seedling lines in this study were from the higher capacity for tuber initiation

and higher rates for tuber growth in the high HI seedling lines and the incapacity to effect compensatory adjustment by higher tuber bulking rates for restricted tuber initiation in the low HI seedling lines.

Cultivar 049 and all the three high HI seedling lines possessed acceptable tuber qualities, and the orange-fleshed tubers from seedling line Tis 2328/6 were probably high in carotene. Results demonstrated the superiority of the three new high yielding seedling lines over cv 049 in tuber and TDM yields, early maturing and capability of high yields in wet and dry season croppings without fertilizer application which were lacking in cv 049. The introduced seedling lines Tis 2328/6, Tis 2525/6 in addition showed adaptability to Trinidad conditions.

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