

ABSTRACT

Sweet potato germplasm collections in Trinidad and Tobago were evaluated for tuber yield and storage characteristics in two experiments.

Three groups of varieties were identified on the basis of tuber yield at 20 tons/ha and above, 15 - 20 tons/ha and 6.5 - 15 tons/ha and were designated as high yielding, medium yielding and low yielding groups respectively. The dry matter percentage of the varieties ranged from 25.6 per cent in variety TIB 5(61) to 48.5 per cent in variety 11/59.

It was found that there was a considerable variation in sprouting behaviour of different sweet potato varieties. On the basis of time to sprout, varieties were grouped into late, medium/late, medium, medium/early and early sprouting types. Two, eight, 12, 13, six and fourteen varieties were identified as late, medium/late, medium, medium/early, early and variable sprouting varieties respectively.

It was found that sweet potato was an extremely variable crop in relation to tuber weight loss. On the basis of percentage weight loss in the first fortnight in the storage, sweet potato varieties were grouped into, those which lost less than five per cent, five to ten per cent, ten to 15 per cent, 15 - 20 per cent and greater than 20 per cent. The varieties A28/7, AI 271, TIB 5(61), 33/57 and 03/58/18 did not lose weight due to decay in both experiments. The percentage dry weight loss ranged from 1.3 to 31.7 per cent and from 0.24 to 20.3 for the varieties which store without rotting for five weeks in Experiments 1 and 2 respectively. The percentage dry weight loss ranged from 0.35 to 16.4 per cent for the varieties which store without rotting for nine weeks in Experiment 2 only.

On the basis of starch and sugar contents of tubers different sweet potato varieties were grouped into varieties which had greater than 4, 3 - 3.99, 2 - 2.99 and less than 0.93-1.99 per cent total sugar content at week five and greater or equal to 30, 25 - 29.99, 20 - 24.99 and less than 9.5 - 19.99 per cent starch at week one. It was found that there was a considerable variation in both starch and total sugar content of different varieties both at week one and five. The total sugar content of tubers increased in the storage while the starch content decreased.

Significant negative correlation coefficients were obtained for the association between dry matter yield and flesh colour, total sugar content and dry matter percentage and starch and total sugar content. Significant positive correlation coefficients were obtained between dry matter yield and skin colour, starch content and percentage dry matter, dry matter percentage and percentage sprouting after five weeks of storage and skin colour and percentage sprouting after five weeks of storage.

The implication of the results for identification of a high yielding sweet potato varieties with good storage characteristics were discussed.

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