ABSTRACT

Evaluation of Tuber Quality in Selected Sweet Potato *Ipomoea batatas (L.) Lam)* Varieties.

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The evaluation of sweet potato varieties for tuber quality, tuber size, shape, external texture and low sugar contents after baking was undertaken in the UWI sweet potato collection and a seedling population of cultivars TIS 8504 and TIS 82/0270. Beta-amylase activity of these varieties was also determined with a view to establishing a possible relationship between β -amylase levels and sugars formed on cooking. From a total of 292 varieties, seven were evaluated for tuber yield and shape under wet season conditions. In addition, two new selections were processed into dehydrated flakes and a consumer study undertaken.

In the screening of the sweet potato population for the non-sweet trait, no obvious relationship was established between sugar content after baking and β-amylase activity. However, varieties could be grouped into very low (0-5% D.Wt.), low (5-10% D.Wt.), medium (10-15% D.Wt.) and high (>25% D.Wt.) sugar contents after baking and low and high β -amylase activities. Two varieties, 03/60 and 3030/1/1, from the UWI population were identified as low sugar content (staple) types but only 03/60 was of promising commercial potential. Within the seedling population of TIS 8504 and TIS 82/0270, 11 low sugar content varieties were identified

from the dry season crop with four varieties TIS 82/0270-16, TIS 82/0270-13, TIS 8504-17 and TIS 8504-24 displaying promising commercial potential.

Of the seven new and introduced varieties evaluated for yield and tuber shape, five produced marketable yield greater than the standard variety (A28/7) at 24 weeks after planting (WAP). Of these, TIS 8504-17 with marketable yield of 188.3gm/plant at 20WAP and 313.3gm/plant at 24WAP was considered the best overall performer. Variety TIS 8504 also produced high marketable yields and its predominantly ovoid shaped tubers enhanced its processing potential.

When tubers of TIS 8504 and TIS 2153 were processed into dehydrated flakes, consumer evaluation on the rehydrated flakes revealed a preference for the eating quality as assesed by taste of TIS 8504 over TIS 2153. Non-enzymatic darkening of the sweet potato puree was considered to be one of the major factors restricting greater consumer acceptance of this new product.