E2-12 : SOME STUDIES DIRECTED AT THE INTEGRATED UTILIZATION OF CONSTITUENTS OF PALMYRAH FRUIT PULP

*E R Jansz, Jaanaki Gooneratne, S P J N Senanayake, K Theivendirarajah**
Ceylon Institute of Scientific & Industrial Research, Colombo,
Palmyrah Development Board, Colombo.

Based on existing fruiting female palmyrah (*Borassus flabellifer*) plants presently available, the annual yield of palmyrah fruit pulp (PFP) is 15-20,000 m.tons. Although there are trraditional uses of the material and the possibilities for use after debittering as a fruit drink, these prospects are lessened by the presence of saponins and sapogenins. The purpose of this study is to propose a scheme for separation and exploitation of the utilizable constituents of PFP.

PFP contains 62.5% sugar on fresh weight comprising: sucrose (6.6%), glucose (3.5%) and fructose (3.4%), and an unknown sugar (1.5%) as determined by GC. It also has pectin (6-7%) fresh weight with an acetyl value of 3.5 and a methoxy value of 5.4 which could conceivably be used in slow set applications. PFP also contains 9 $mg,100g^{-1}$ (dry weight) carotenoids which has potential use as a food colour.

The sugar cannot be used directly as a sugar-based product (eg. treacle) as the bitter principle generally associates with it. It is therefore converted to a distilled ethanolic beverage, which is free of bitterness.

Studies have shown that the best strategy for commercial utilization is to first separate the pectin from sugars and carotenoids, then isolate the pectin by concentration in vacuo and ethanolic precipitation, followed by alcoholic fermentation and distillation of the other fraction. The carotenoids are extracted last from the residue, with petroleum-ether, despite losses in the penultimate step.