Development and quality evaluation of value added Mangrove Apple (*Sonneratia caseolaris*) Ice cream

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The demand for Ice cream(IC) in the Sri Lankan market has increased tremendously over the recent years. Consumer preference towards fruity flavoured IC is still increasing in the local market and many producers are trying to introduce new products frequently. Mangrove apple (Kirala,*Sonneratia caseolaris*), which is not yet exposed to the commercial market, has a large potential to be used as a fruity base due to several reasons such as high nutritional value, medicinal value, cheese like taste and year-round bearing habit. In addition Mangroves are highly productive ecosystems, but are on the verge of destruction, as they do not yield direct economic benefits to people. Therefore the objectives of this study were to conserve mangroves indirectly by adding an economic value to mangrove products through formulation of a value added mangrove apple IC using different treatments.

Four treatments were used for the experiment; kirala flavoured IC (Trt C) according to the recipe of a commercially available IC (Ingredients - Sugar, Skim milk powder, Whey powder, Vegetable Fat, Stabilizer, Vanilla, Colouring and Water). And three types of Kirala ripple IC - with 45 Brix brown sauce (Trt A), with 50 Brix brown sauce (Trt B) and with 50 Brix green sauce (Trt D). They were tested to comply with SLS requirements (SLS 223: 1989) and their storage stability were tested with respect to physicochemical and microbiological aspects for two months. Sensory evaluation was done to find out the best formulation and organoleptic quality of the product.

The results of the sensory evaluation revealed that Trt D had significant difference in preference for sensory attributes such as flavour, body and texture, melting quality and overall acceptability) between other treatments and Trt C had the highest preference,. where the flavour was concerned. It was also found that the green colour sauce had improved the appearance of the ripple ice cream than the natural brown colour. From sensory evaluation combined with the physicochemical and microbiological evaluations after the initial storage period, it could be concluded that all treatments comply with the SLS standards except fat content. Milk and Mangrove apple flavour had a complementary effect on the flavour of IC. This study reveals that the mangrove apple can be utilized to make high value ripple IC. Further development is necessary not only in the production process but also in environmentally safe harvesting of mangrove apples and in the constant supply of quality fruits.