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Development of technology to produce nutmeg (*Myristica fragrans* Houtt.) jelly using its pericarp

M V Gamlathge*, P D Liyanage, I K Indrasena, S P Prematilake
Research Station, Department of Export Agriculture, Matale

The nutmeg tree (*Myristica fragrans* Houtt.) produces two separate and distinct products; nutmeg and mace, which are about 30 % of the fresh fruit. The fleshy pericarp or the rind represents 70 % of fruit is discarded during processing of nutmeg as a by product. This can be used to produce jam, chutney, marmalade etc., as it contains a considerable amount of pectin, which is a natural substance. The direct major usage of spices are inclining towards value addition and gradually moving from primary processed products to more value-added products as they fetch more profits. Value added spice products are more popular in food sector over the primary processed products. The main aim of the study is to develop a new value-added product from the pericarp extraction of the nutmeg fruit for the ready to serve market and to create a market value for the nutmeg pericarp.

Nutmeg fruits of fully matured were selected and extraction was done by boiling 3.0 kg of cut pieces of rind or pericarp with 3.0 L of water for 30 minutes. The extract was filtered through a muslin cloth to remove the residues. Three sets of 800 mL, 780 mL and 760 mL extractions were prepared and labeled as treatment A, B and C. They were boiled with 745.0 g, 720.0 g, and 700.0 g of sugar respectively. To obtain the Brix value to 65 ^{o} and the original set structure of the jelly, commercial grade pectin was added in different scales while maintaining the pH range at 3.1 - 3.3. As a preservative 20 mg of potassium meta-bi-sulfite ($K_2S_2O_5$) was added to each set.

A sensory evaluation test was conducted to observe the consumer preferences for three treatments of nutmeg flavoured jelly with thirty-three members and data were analyzed using a ranking method. Overall preferences, as per the panel test were 43.17 % for the treatment A, 36.69 % for treatment B and 20.14 % for treatment C. The preference values for colour, sweetness, flavour and aroma, transparency and mouth feel softness were analyzed only for the treatment A. The overall preference values for the colour, sweetness, flavour and aroma, transparency and mouth feel softness were 54.54 %, 81.81 %, 60.60 %, 84.84 %, 78.78 % respectively. Developed recipe for the Jelly, treatment A was selected as the best out of three jelly samples tested to introduce as a new value added product and to conduct further studies.

*malika_vg@yahoo.com Tel: 066-2232514