

Production and Shelf Life Evaluation of Nutritious Jam Using Underutilized Bael (*Aegle marmelos* L.) Fruit

T. Mahendran and G.G.A. Shashikala

Department of Agricultural Chemistry, Eastern University, Chenkalady (E.P.), Sri Lanka

Bael (*Aegle marmelos* L.) fruit is a rich source of nutrients, including dietary fiber, vitamin C, folate, potassium, phyto-nutrients and many antioxidants such as phenols and flavonoids. They are naturally low in fat, sodium, calories and have no cholesterol. Jams are one of the most popular food products because of their low cost, all year long availability and sensory properties. The present study was aimed to develop nutritious jam from Bael fruit pulp and to assess its quality, stability and suitability during storage. Bael fruit jam was prepared according to the Sri Lankan Standard Specification for jam using a general recipe. The nutritional, phytochemical, microbiological and sensory evaluations were assessed up to 3 months of storage at 28-30°C and 80-90% relative humidity. The nutritional parameters were analyzed according to the Standard AOAC methods. Sensory attributes of colour, aroma, taste, spreadability and overall acceptability were evaluated with 30 semi-trained panelists using a 7-point hedonic scale. The results were subjected to statistical analysis using analysis of variance technique and comparison of means by LSD test. The bael fruit jam contained 69.27% total carbohydrates, 30.26% moisture, 0.91% protein, 0.47% ash, 1.83% dietary fiber, 35.5 mg% ascorbic acid, 0.46% titratable acidity, 61.2% total soluble solids (°Brix) and 3.47 pH. The total soluble solids, titratable acidity and pH were not significantly changed during storage period of 3 months ($p > 0.05$) however ascorbic acid, polyphenol content and antioxidant activity significantly decreased ($p < 0.05$). The total plate, yeast, mold counts were less than the standard maximum permissible limits. Sensory assessments revealed that texture of the bael jam significantly changed and became soft on storage. Based on the quality assessment, the bael fruit jam production proved to be feasible and certainly is an option for the consumption of underutilized fruits for greater shelf life.

Keywords: Bael fruit, Jam, Phytochemical properties, Quality assessment, Shelf life