

**PREPARATION AND SHELF LIFE EVALUATION OF
SOURSOP (*Annona muricata* L.)
JELLY WITHOUT PRESERVATIVES.**



BY

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ABSTRACT

Soursop (*Annona muricata* L.) fruit has a great universal, local and regional importance. However generally lack national recognition and appreciation. Soursop has potential to ensure food security, nutrition, health, income generation and environment services. Therefore nowadays most food processing industries move to preparation of various value added products using soursop fruits due to its proven influence on human health. Fruit jelly is a product brought to a semi solid gelled consistency and made from the juice and/or aqueous extracts of one or more fruits, mixed with foodstuffs (Brown sugar, honey) with sweetening properties with or without the addition of water. This study was focused to develop a soursop jelly and asses its sensory, physico-chemical properties and storage stability.

Soursop jelly was prepared according to Sri Lankan Standard Specification for jelly, jam and marmalades by using a general recipe for fruit jelly. Considering the findings of several preliminary studies, five formulations of jelly were prepared by using different soursop pulp concentration. The freshly made formulations were subjected to physico-chemical, sensory analysis and microbial assessment including total plate count and yeast and molds count. Seven point hedonic scales were used to sensory evaluation. Most preferred three formulations (80% soursop pulp, 60% soursop pulp, 40% soursop pulp) were selected for storage studies. The formulations were stored at 28-30°C room temperature and 80-90% of RH for 12 weeks. Physico-chemical parameters such as moisture, ash, pH, titrable acidity, total soluble solids, ascorbic acid, reducing sugar and total sugar were analyzed after formulation and during storage period. Organoleptic qualities such as colour, taste, texture, aroma and overall

acceptability and microbial assessment were done after formulation and during storage period.

The nutritional analysis of freshly made jelly shown increasing trend in moisture (from 22.21 to 36.40%) and pH (from 3.85 to 4.33) decreasing trend with ash (from 12.33 to 4.00%), titrable acidity (from 0.523 to 0.317%), TSS (from 21.17 to 5.1^oBrix), ascorbic acid content (from 3.57 to 1.77g/100 g), reducing sugar (from 32.7 to 14.96%) and total sugar (from 82.4 to 40.58%) with decrease in soursop pulp extract from 100 to 20%. According to Tukey's test, the mean scores for all the assessed sensory characters varied significantly ($p < 0.05$) in the freshly made jelly formulations. Higher mean scores of overall acceptability was recorded by T₂ (Jelly formulation with 80% soursop pulp).

The decreasing trends in pH, ascorbic acid and an increasing trend in moisture, total soluble solids, titrable acidity, reducing sugar and total sugar was noted with advancement of storage period of 12 weeks. Ash content of jelly formulation was constant during the storage period. The sensory analysis also showed that there were significance differences ($p < 0.05$) for organoleptic characters of jelly. Mean scores of all organoleptic characters were gradually decreased during 12 weeks storage period. Highest overall acceptability was observed in formulation with 80% soursop pulp and all formulations were microbiologically safe for consumption.

Based on the results of physico-chemical characteristics, sensory attribute and microbial assessment, the jelly with 80% soursop pulp concentration was selected as best formulation and could be stored for 12 weeks without any significant changes in the quality characteristics of soursop jelly. In conclusion, soursop jelly is an ideal way of adding value to the underutilized soursop fruit with retained antioxidant properties.

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