

Effect of Thermal Treatment on Keeping Quality of Palmyrah Sweet Sap

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The palmyrah palm (*Borassus flabellifer* L.) is grows extensively in Northern part of Sri Lanka. It is called as 'Tree of life' has contributed immensely to the people both as food and shelter and also the base for income generation. The most important product of palm is the sap or juice. It should be extracted from both male and female inflorescences (dioecious plant) by the process known as tapping. Harvested sap should be immediately processed due to the highly perishability as it under goes spontaneous fermentation via air born yeast microflora. The main objective is the study was to identify the optimum temperature and time for preservation of sweet sap and detected the suitable shelf life for bottled sweet sap via the physical, chemical, microbiological and sensory quality of preserved sweet sap. Traditionally quick lime is added to prevent the fermentation; phosphoric acid was selected at pH 8 for the removal of lime as calcium phosphate. Delimed sweet sap was used for the study of thermal treatment in order to increase the keeping quality of palmyrah sweet sap. Three experiments with different thermal treatments were conducted to preserve the sweet sap. Experiment 1 (preservatives such as citric acid and sodium metabisulphite) and Experiment 2 (thermal treatments of 60, 70 80 and 90°C) were rejected through the microbiology and sensory evaluation. In the 3rd experiment the bottled sweet sap was heated at 105, 110 and 115°C for different time intervals (15 and 30min) and stored at room temperature. There were no significant differences ($p < 0.05$) in chemical, physical and microbial evaluation of selected treatments at 60 days of storage. Based on sensory evaluation, Treatment 5 thermal processing at 105° C for 15 min was selected as the best treatment and it could be stored for 60 days without changing its native characteristics.

Keywords: Palmyrah, Preservation, Sweet sap Temperature and Time