Microbial, Physicochemical and Sensory Evaluation of Preserved Palmyrah Fruit Pulp

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Abstract: Fruits of Palmyrah palm (Borassus flabellifer) are seasonal; therefore their fibrous (mesocarp) Palmyrah fruit pulp (PFP) extracted with water and should be preserved with lengthened shelf life to ensure its availability in local and international market throughout the year. Therefore a study on preservation of PFP was carried out with or without various concentrations of preservatives, Sodium benzoate (SB), Sodium metabisulphite (SMS) and combinations of the both at different ratio. pH of the PFP was adjusted to 3.8 with citric acid, heated in a water bath at 90°C for 20 Sec, preservatives were added, mixed well then bottled pulp was heated at 80°C for 30 min in thermostatic water bath and kept at room temperature (30°C) for 180 days. Initial pH with stabilization has come to about 4.2. Aliquots of them were withdrawn periodically (at 30 days intervals) and were analyzed for microbial, physicochemical and sensory characteristics. PFP alone (without preservatives) was spoiled with increasing pH by showing adverse characteristics (unacceptable odour) before 24 hours of storage. All the treatment showed significant (p<0.001) increased in total soluble solid (10.82-13.10 °brix) and declined in pH (4.42 - 4.14) was observed with a proportional increase in the acidity (0.71 - 0.91%) for treatments of T1 - T5 (containing SB), T6 - T10 (containing SMS) and T11 – T15 (containing both SMS & SB) up to 180 days. But no colony (Total Plate Count) was observed in the pulp treated with SMS and with combination of SMS & SB at various concentrations up to 120 days of storage. Among the all treatments the pulp treated with SB were found to be inferior in both colour and flavour characteristics. Even though it was found that PFP treated with SMS, T6 - T10 could be stored for extended period of 180 days without any major changes in chemical, microbiological and sensory characteristics, whereas T7 (with SMS, 0.4g/l) was selected as the best treatment based on the overall acceptability.

Keywords: Palmyrah Fruit Pulp, preservatives, sensory evaluation