Changes in Quality Parameters of Palmyrah Ready-To-Serve (RTS) Beverage during Storage

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A study was conducted to asses the changes in quality parameters of palmyrah ready-to-serve (RTS) beverage during storage. Palmyrah *(Borassus flabellifer* L.) fruits are under-utilized. It is rich in vitamin A and C. The presence of natural colour pigments, its volatile constituents and the sweet taste serves as positive factors in formulating a beverage of high organoleptic properties. In this study, the RTS beverage was formulated using palmyrah fruit pulp at different concentrations of 10, 12 and 14% and stored at two different conditions of ambient temperature (30°C) and refrigeration temperature (5°C) for a period of twelve weeks. These blends were tested for physico-chemical qualities, organoleptic characteristics, microbial counts and shelf life throughout storage period.

Physico-chemical analysis revealed that, the ascorbic acid, total sugar, total soluble solids and pH had declining trend whereas the titratable acidity had increasing trend with the storage period at both temperatures in all treated samples. Compared to the samples stored at 30°C, the samples stored at 5°C showed the better performance in maintaining the qualities. Among the tested treatments, the loss of total sugar and ascorbic acid content was 3.55% and 4.42% respectively which was considerably lower in the RTS beverage having 12% of palmyrah pulp and stored at 5°C whereas the titratable acidity was increased gradually by 0.04% during the storage period. Sensory evaluation showed that the qualities of the formulated blends retained stable for twelve weeks period under refrigeration storage than that of ambient storage. Compared to other treatments the RTS blend made with 12% of pulp and stored at 5°C obtained highest overall acceptability. There was no any deleterious effect on the quality of stored blends at both temperatures by microbes. Based on these results the RTS beverage made with 12% of pulp concentration and stored at 5°C was selected as best treatment to extend the shelf life without any significant changes in qualities.

Keywords: Microbial qualities, Palmyrah, Physico-chemical characteristics, Readyto-serve beverage, Sensory attributes, Shelf life