

## **Development and evaluation of the quality of a ready to serve (RTS) drink using Sea lettuce and *Annona muricata* L. (Custard apple)**

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The food industry has shown the growing demand for healthy, nutritionally rich ready-to-serve drinks to satisfy the thirst while obtaining the health benefits. Furthermore, consumption of underutilized foods, rich in functional properties would lead to promote a healthy nutrient diet. Further, sea weed is an underutilized food source that behaves as rich nutritional delivery medium. Therefore, the present study focused on the development and quality evaluation of a RTS drink produced using custard apple and a model species: sea lettuce (*Ulva fasciata*). Dried powder of *Ulva fasciata*, 1.5%, 3.5%, 5.5% (w/v) enriched custard apple RTS drinks and a control sample (100% of custard apple) were tested to select the best combination of the RTS drink by conducting a sensory analysis using a 5-point hedonic scale. Chemical properties (Titratable acidity, pH and Total soluble solids) and proximate composition of the drink were determined according to the standard methods. Chemical and microbial quality changes of the drink were evaluated at the refrigerated (4-8°C) condition for the period of 21 days and the coliform test was performed to ensure the product. Results revealed that 1.5% (w/v) enriched custard apple RTS drink was the most acceptable in terms of overall acceptability and it contains 8.03±0.51% of proteins, 0.53±0.02% of fat, 88.58±0.15% of moisture, 0.65±0.11% of ash, 0.34±0.02% of fiber and 1.85±0.28% of carbohydrates. Titratable acidity, pH and TSS of the drink were 0.29% of citric acid, 3.47 and 10.70°Brix respectively. The drink fulfilled the SLS chemical and microbial requirements for 14 out of 21 days of storage period and *E. coli* was absent. Thus, the developed drink was microbiologically safe for human consumption for 3 weeks. As a conclusion, the RTS drink containing 1.5% (w/v) *Ulva fasciata* dried powder and custard apple is rich in nutritional properties and can successfully be promoted in the society as a healthy drink.

**Keywords:** Custard apple, RTS drink, *Ulva fasciata*, proximate composition, Sensory properties

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