Physiochemical composition, sensory properties, and keeping quality of jelly developed with *Kappaphycus alvarezii* and passion fruit pulp extracts

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Abstract: Value-added products from seaweeds are limited in Sri Lanka. *Kappaphycus alvarezii* is a commercially valuable seaweed species cultured in Sri Lanka and currently exported only in dry form. The distinctive aroma of seaweed is the main problem when developing seaweed value-added food products. To mask this odor, an ingredient with a strong aroma, such as passion fruit, is required. Thus, this study was focused on developing a ready-to-eat seaweed jelly incorporated with passion fruit extract and to evaluate its physiochemical and sensory properties. Ready-to-eat seaweed jelly was prepared by incorporating different percentages of passion fruit extracts (0%, 10%, 15% and 20%) as four treatments with dried cinnamon and seaweed powder. Best treatment combination was selected based on the sensory evaluation with 30 untrained panelists using a 7-point hedonic scale. The proximate composition of the final product was determined. Physicochemical parameters such as colour, texture, and pH were determined for a 14 days storage period along with microbiological analysis. The treatment with 15% of passion fruit extract scored the highest for all sensory attributes. The seaweed jelly incorporated with 15% passion fruit extract had 36.7% of ash, 16.8% of fiber, 12.5% of moisture, 8.3% of protein, and 0.15±0.03% of fat, which was significantly higher (p<0.05) than those of the control jelly. In conclusion, ready-to-eat seaweed jelly with 15% of passion fruit extract is nutrition-rich, without preservatives and is best to consume within 7 days. Further studies on the bioactive properties of the jelly are required to improve the quality of the product.

Keywords: Jelly dessert, Passion fruit, Sensory parameters, Shelf-life