

## **EXTRACTION OF ALGINATES AND CARRAGEENAN FROM SELECTED SEAWEEDS IN SRI LANKA AND THEIR APPLICATION AS STABILIZER FOR ICE CREAM**

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Seaweeds are an abundant, under-utilized source in the Sri Lankan coastal line. This study was aimed to extract alginates and carrageenan, select the best stabilizer, emulsifier or stabilizer emulsifier combination extracted from seaweeds to replace gelatine in ice-cream. The extraction of alginates and carrageenan were done and their quality and yield were measured. Different kinds of stabilizer, emulsifier and their combination were tested including the above extracted seaweeds extracts. Sensory tests were conducted to select the best combination. The first sensory test was done with cremodan, gelatine- lecithin, carrageenan and lecithin-alginate and a carrageenan incorporated ice-cream sample which exhibited the best sensory qualities. The second sensory test was done with gelatine, lecithin, carrageenan and carrageenan-lecithin. In the second sensory analysis, carrageenan-lecithin incorporated ice cream had the best sensory qualities. The Friedman rank sum test was used to analyse the data with a significant level of  $\alpha=0.05$ . Over two sensory tests were carried out using 0.5% stabilizer, emulsifier or stabilizer-emulsifier combination. The final sensory test was conducted with different levels of the selected stabilizer-emulsifier combination. The different levels incorporated were 0.25%, 0.5% and 0.75%. Physico-chemical tests were conducted for all the treatments made and their results coincided with the standard values. The microbial quality of the final product was measured using the total plate count and was compared with SLSI standards for ice cream. The results were within the limits and the best ice cream developed contained a 0.25% carrageenan-lecithin combination. As a quantitative parameter, the overrun of all the ice cream samples were measured.

Keywords: Stabilizer, Emulsifier, Carrageenan, Lecithin

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