

ABSTRACT

The physico-chemical properties of fish oil extracted from fish waste by Bligh and Dyer method is assessed. The free fatty acid content and peroxide value is found to be in acceptable range. Fish oil is a rich source of omega-3 fatty acid especially EPA and DHA. It is useful in prevention of many lifestyle diseases, cardiovascular disease in particular. Encapsulation of fish oil is done to mask the fishy flavour and to reduce the oxidation from the external environment. Sodium alginate is used as an encapsulating wall material. Fortification of encapsulated fish oil is fortified in yoghurt to provide adequate intake of omega-3 fatty acid in the consumer's diet on daily basis. Four sets of yoghurt samples were prepared depending upon the concentration of encapsulated fish oil used. The physico-chemical properties of yoghurt are analysed. The physico-chemical properties like Ash content, fat content, acidity, protein content did not show any significant difference statistically from the control. Syneresis values ranged on an average between 97.48-134% among the samples. The fat content of the yoghurt samples is noted between 2.7-3.6%. High protein content of yoghurt samples is recorded. Ash content ranged between 10.39-24.33. Texture Profile analyses indicated no significant difference with the control product. Slight variations observed in hardness and adhesiveness. Sensory evaluation (9 point hedonic scale) showed no difference among the samples regardless of omega-3 source. The yoghurt samples were stored at 4⁰C and shelf life of the product was evaluated. After 18th day of storage microbial counts were high. But there was no growth of coliform which makes the product safe for consumption.

KEYWORDS: Fish oil, omega-3 fatty acid, Physico-chemical properties, Sensory evaluation, shelf life