Production of Novel Ice Cream Enriched with β-carotene using Orange Fleshed Sweet Potato Powder

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Ice cream is a delicious dessert that has a considerable demand throughout the world not only the taste but also it gives high nutritional benefits and high-calorie value. Orange fleshed sweet potato *(Ipomoea batata L.*) is an important staple crop in the world. It is rich in β-carotene and a pigment that gives yellow and orange color to the fruits and vegetables. This study was conducted to produce an ice cream incorporating orange fleshed sweet potato (OFSP) powder with no added artificial food colorant and to study the physical, chemical, nutritional attributes and shelf life of the product. Ice creams were prepared by OFSP powder at 1%, 2%, and 2.6% (w/w) with added water by replacing the milk. Sensory evaluation (5-point hedonic scale) was carried out using 30 panelists. One percent (1%) (w/w) of OFSP powder incorporated ice cream was selected as best for the further analysis. Results were analyzed using Minitab software package. Milk solids non-fat (16.25%) and total solids (36.81%) were complied with SLS Standard. Protein (2.62%) and fat (3.22%) were not significantly differ from Brazil standard (2.5% and 3% respectively). Melting rate pattern of OFSP powder ice cream was similar to standard ice cream meltdown curve. OFSP ice cream was rich in β-carotene ($1.8\times10^6\pm0.0$ µg/l) and color was yellow orange group-15 brilliant yellow. The product was Shelf-stable for four weeks' period according to the microbial study stipulated in SLS standard. The Orange-sweet potato incorporated ice cream was rich in β-carotene and economically profitable novel product.

Keywords: β-carotene, Ice cream, Novel product, Orange fleshed sweet potato