DEVELOPMENT OF FUNCTIONAL FOODS:
LOW-FAT, LOW-SUGAR ICE CREAM

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Background: Concerns about the increasing incidence of lifestyle- and diet-related diseases have led consumers to reduce consumption of high-fat foods and have stimulated the development of food products with reduced fat content. Frozen desserts such as ice cream are popular among young and adult consumers. With this study, the consumers will be provided with value-added products which would help them reduce the risk for cardiovascular diseases, hypertension and diabetes. Objective: To develop a low-fat, low-sugar ice cream. Methods: Trial formulations were made using the basic ingredients of the most common method of ice cream preparation. The most acceptable formulation of low-fat, low-sugar ice cream was prepared and packed in ice cream plastic cups. The product was stored in a freezer at -18°C. Chemical, microbiological, physico-chemical analysis and sensory evaluation were conducted periodically to evaluate the quality and safety of the product during storage. The most acceptable formulation was processed three (3) times in a larger scale than its initial trials. Sensory evaluation of the final product for each batch was conducted using the 7-point Hedonic Rating Scale. Results: The sugar content of the developed low-fat, low-sugar ice cream in cups was < 0.1 gram/100 grams while the fat content was 0.34 gram which was lower than that of the regular commercial products (10.9 gram). The developed product was found to be very acceptable by the panelists, obtaining an average rating of 6.6 for color, 6.4 for texture, 6.5 for appearance, taste and general acceptability on the 7-point Hedonic Scale. The product was shelf-stable and microbiologically safe, even after 50 weeks of storage, packed in plastic cups and stored in a freezer at -18°C or below. Conclusion/Recommendation: A very acceptable and shelf-stable low-fat (0.34 gram), low-sugar ice cream (<0.1 gram) with vanilla flavor was developed. Pilot scale production of the product is recommended to determine its technical and economic feasibility for commercial production. For scientific evidence to substantiate health claims, clinical or efficacy studies should be conducted.