

Development of a Non-Dairy Mix Fruit Incorporated Ice Cream

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In recent decades, there has been a significantly growing consumer demand for plant-based dairy alternatives due to milk allergies and an increasing interest in sustainable and cruelty-free food products. As a result, the trend of maximizing credentials in non-dairy ice cream has increased. But lower palatability is a major problem of non-dairy ice cream. This study was carried out to develop a non-dairy ice cream by incorporating coconut cream and fresh fruit pulp with higher sensory attributes. Ice cream mixes were prepared by adding fresh fruit pulp, including mango, banana, and pineapple, in equal weights. Three formulations were developed by adding fruit pulp and coconut cream in different percentages of final weight as 0%, 60%, and 75 % fruit pulp and 85%, 25%, and 10% of coconut cream, respectively while the rest were sugar, stabilizers and emulsifiers. The prepared products were subjected to physicochemical (melting point, pH, titratable acidity, fat, protein, fiber, and moisture content), microbial and sensory analyses. The results showed that the fat contents of ice cream samples were reduced according to the decreasing order of coconut cream but the fiber contents were increased with the increment of fruit pulp. Negative results were obtained for E. coli and Coliform, which meet SLS 223 specifications for ice cream. The seven-point hedonic test was conducted for the sensory evaluation of developed ice cream and the Friedman test revealed that ($P < 0.05$) all sensory attributes were significantly different. There were 6.2 pH value, 0.2% titratable acidity, and 66% overrun values for ice cream, which had higher sensory attributes. Ice cream with 25% coconut cream and 60% fruit pulp was selected as the most acceptable formulation (1.43% protein, 1.57% fiber, 5.67% fat content, 0.2%) and which can fulfill the market demand for non-dairy ice cream with desired sensory and functional properties.

Keywords: Non-dairy, Ice cream, Coconut cream, Fruit pulp