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Development of Fat Free & Milk Solids Non Fat Free Mango Sorbet

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degree of Bachelor of Applied Sciences in Food Science & Technology

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Abstract

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Satisfying customers' demands for good food at the lowest possible cost has always been the major challenge faced by the foodservice industry. In efforts to cope with this challenge, the industry has utilized the latest techniques of product development, including ingredient formats, sensory evaluation, and cost control. This has been especially true in the effort to meet customers' demands for a dessert using such fruits as Mango. Objective is transforming mango into sorbet would enable consumers to enjoy the freshness and flavor of mango at any time.

Many consumers associate fruit with a healthy consumption pattern. Development of frozen desserts that indulge consumers' eating desire, yet provide potential health benefits, is a challenge. Product appraisal to identify specific sensory attributes driving product acceptance is vital to the introduction of this new product. This thesis research was designed to develop fat-free & MSNF-free mango sorbet products and to determine the consumer sensory profile driving product acceptance. If Mango were transformed into a flavorful, relatively cheap sorbet, consumers would be able to enjoy a desirable dessert year round

Sugar was mixed with stabilizer (CREMODAN 200 SORBETLINE) and dissolved the sugar mixture by using hot water. The sugar syrup was heated in a water bath to 80 °C & held for a few seconds. Samples were then cooled to room temperature. Mango puree was stirred well and immediately mixed with the sugar syrup soon after the temperature was reduced to room temperature. Then mix was homogenized and pasteurized. It was

allowed to cool 5⁰C. The coloring matters and flavours were poured into the above mix and thoroughly mixed until it dispersed evenly in order to get the pale green colour. pH of the preparation was adjusted using Citric acid. The preparation was directed to the continuous freezer. The mango sorbet mix was filled in to plastic cups and sealed with plastic lids. Then the sorbet was directed to the hardening tunnel under -30⁰C for about 45 minutes and stored under -18⁰C.

Samples were evaluated organoleptically by a group of panelists using a five point hedonic scale. The selected sample was further developing by changing its mango puree and stabilizer. The amounts of stabilizing agents were 0.35% (based on the total weight of the ingredients). The mango sorbets containing 25% Of mango puree 0.35% stabilizer of received a higher overall quality then other mango sorbet formulations.

The data were subjected to statistical analysis. Data was analyzed by using Freidman non parametric test in "MINITAB" computer package. The scores were converted into ranks and a non parametric ranking procedure was used with Friedman Rank Sum Test for the evaluation of appearance, sorbet flavor and aroma, texture, sweetness and overall acceptability. A significant level of 0.05 was taken for the whole analysis.

Specifications of the developed mango sorbet is, ash content 0.81%, crude protein content 3.14%, fiber content 0.041% and the results of microbiological analysis (Yeast & moulds, E- coli, Coliforms, Aerobic Plate Counts) were revealed that the mango sorbet was within good in quality. No any quality defects were observed in terms of microbiological activities. Melting resistance of is higher than vanilla & chocolate ice creams. Freezing Point Depression Factor (FPDF) is 38.4 and Relative sweetness (Rel S) is 35.0. Shelf life of mango sorbet can be proposed as 3 months at refrigeration conditions (-18⁰C).

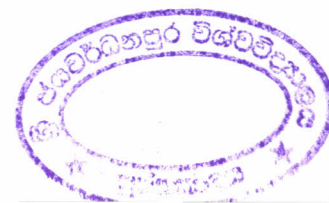
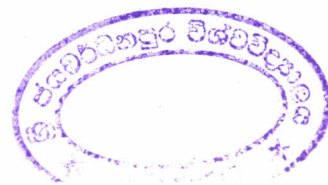


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