Development of Healthy Ice Cream

Dr. Shih-Ming Hu
Department of Human Ecology
State University of New York, College at Oneonta

Methods

Preparation of Ice Cream
This study investigates the acceptability of using okra gum as the fat and cholesterol replacers in ice cream and develops the options of replacement method.

The International Dairy Foods Association (2009) indicated that vanilla ice cream was the number one of the fifteen most popular ice cream flavors. In this study, the vanilla ice cream, derived from a recipe in a professional and popular recipe website, will serve as the control sample. Okra gum will be substituted for 25%, 50%, 75%, and 100% milk fat in the condense milk of the controlled recipe.

Instrument Design and Survey Procedures

A self-administered sensory evaluation questionnaire will be developed to rate each product for the appearance, color, flavors, texture and overall acceptability. Four hundred participants in a state university will be randomly invited to the sensory evaluation. Distilled water will be given between each tasting to refresh the palate of the participants.

Data Analysis

Data will be coded and analyzed by using the Statistical Packages for Social Sciences (SPSS 11.0.1). Descriptive analysis, mean, and standard deviation will be determined for the sensory characteristics and overall acceptability. One way Analysis of Variance (ANOVA) techniques will be conducted to compare the mean scores of the four batches to determine the differences of the sensory characteristics and acceptability. A probability of equal or less than .05 will be considered significant. A Scheffe post hoc multiple comparisons will be conducted to test all possible pair-wise differences in a set of means if the results of ANOVA analysis indicate statistically significant differences among the five sample products.

Summary

The average ice cream recipe has high percentage of egg yolks and includes large amounts of saturate fat. To prepare an acceptable fat free and low cholesterol product may be a unique challenge to culinary professionals. This study investigates the acceptability of using okra gum as the fat and cholesterol replacers in ice cream and develops the options of replacement method. The applications of this new technique will help in promoting the US Dietary Guidelines for Americans, supporting the Healthy Meals for Healthy Americans Act of 1994, and improving the USDA School Meals Program and the health of US children.

Excepted Outcomes and Significance

The findings will offer a new technique of healthful food preparation. If it is acceptable by potential consumers, the applications of this new technique will help in promoting the US Dietary Guidelines for Americans, supporting the Healthy Meals for Healthy Americans Act of 1994, and improving the USDA School Meals Program and the health of US children.

References


