Methods
Preparation of Muffins

This experiment explores the acceptability of using pureed cauliflower as a fat replacer in chocolate chip muffins.

Muffins are an extremely popular food in today's market. Specifically, chocolate chip muffins are the most widely purchased. In this study, the chocolate chip muffin recipe was taken from a popular website and was used as the control since it obtained a high amount of vegetable oil. Pureed Cauliflower will be substituted for 50%, 75%, and 100% of the allotted vegetable oil in the control recipe.

Instrument Design and Survey Procedures

The participants of our self-administered sensory evaluation questionnaire were 30 college students and one college Food Science Professor. The sampling was blind taste testing. Each muffin batch was labeled A through D with evaluation of each group. In order to ensure a clean palate, distilled water was administered.

Data Analysis

The data was obtained through the implementation of a questionnaire using the Likert Scale, and included the evaluations of 30 participants and a food science professor. The data was obtained from the collection of the evaluations and was manually calculated to produce the mean of each of the scores in each category including overall acceptability, taste, texture, overall appearance, moisture, and whether the student would buy or consume this muffin on their own. The data was then transferred to various graphs which depicted the data visually and compared the results of the various groups in terms of overall acceptability, taste, texture, moisture, appearance, and whether the participant would buy the muffin on their own.

Summary

Muffins as a product typically contain a high amount of calories in the form of fat. The object of our study was to reduce the overall calories from fat in the muffins while still preserving the overall acceptability of the Muffins as a product. In our experiment, the most acceptable of the control, 50% replacement, 75% replacement, and 100% Replacement, products, as suggested by the evidence in the study, was the 100% replacement of fat group, which had rated highest in overall acceptability over the four groups. Our conclusion, as supported by the data, has suggested that cauliflower can be used as an acceptable fat replacer in muffins and preserves overall acceptability as well as flavor, texture, moisture and taste in the brownies produced.

Significance of this Study

The findings provide a healthier option of the popular food item of chocolate chip muffins. This low fat option is acceptable by consumers that may potentially decrease the intake of fat in one's diet. This could then overall lead a healthier lifestyle.