

Development of Egg Less Cake Incorporating Yoghurt

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Introduction

Cake is a product obtained from a batter containing wheat flour, sugar and eggs or wheat flour, shortening, sugar, eggs and other ingredients of requisite mass, put into trays and baked in an oven at suitable temperature for a suitable time (Sri Lankan Standards, 1995). The most primitive people in the world began making cakes shortly after they discovered wheat flour. They were described as flour-based sweet foods as opposed to the description of breads, which were just flour-based foods without sweetening. Bread and cake were somewhat interchangeable words with the term "cake" being used for smaller breads. Cakes are five types according to the Sri Lankan Standard specifications; cakes, butter cakes which contains wheat flour, butter, sugar and eggs without filling or any coating, fruit cakes that contain wheat flour, shortening, sugar, eggs, fruits (dry or preserved) and other ingredients, sponge cakes that contain wheat flour, sugar and eggs and cake with icing which are sandwiched and/or coated either with dairy or non dairy cream, jam, jelly, marshmallow, caramel, dried fruits or any other suitable mixture. The term yoghurt can be defined as "A fermented milk product obtained from coagulation of milk specified as, cow or buffalo milk, standardized milk, skim milk or partially skimmed milk and reconstituted milk and concentrated milk by the agency of organisms of types *Streptococcus thermophilus*, *Lactobacillus bulgaricus*, *Lactobacillus acidophilus* may be present" (Sri Lankan Standards, 1989). Yoghurt can be broadly categorized in to two types based on method of production, set yoghurt and stirred yoghurt. There are three types of set yoghurt in the local market; normal yoghurt, low- fat yoghurt and non-fat yoghurt. Stirred yoghurt can be found as plain, fruit or flavoured yoghurts (Tamime and Robinson, 2007). This study was carried out to develop an eggless cake for vegetarians by replacing eggs with yoghurt which is rejected just before the expiry date and thereby add value to yoghurts and cakes through product diversification.

Methodology

Cake was prepared using wheat flour, sugar, butter and baking powder. Three cake samples were prepared by changing wheat flour percentage as 15% (w/w), 20% (w/w) and 25% (w/w). First, wheat flour and baking powder were mixed in a bowl until well combined. Then, sugar and butter were measured and added in to the mixture at the room temperate and mixture was beaten well for 5 minutes using an electric beater to prepare cake batter. Batter was transferred to the greased trays and baked for 45 minutes at 180 °C. Baked cake was wrapped with polythene and stored under room temperature. Optimum wheat flour percentage was selected by a sensory evaluation using 30 untrained panelists at day 01. Wheat flour percentage Selected from above was used to develop yoghurt incorporated cake. There were three yoghurt incorporated cake samples by changing yoghurt percentage as 20% (w/w), 25% (w/w) and 30% (w/w).

First, wheat flour and baking powder were mixed in a bowl until combined well. Then, sugar and butter were measured and added in to the mixture at the room temperate and mixture was beaten well for 5 minutes using an electric beater to prepare cake batter. Preservatives were added in maximum level to the batter to increase the shelf life. Finally, yoghurt (4% of fat and 8.5% of SNF and vanilla were added to the batter and mixed well. Batter was transferred to the greased trays and baked for 45 minutes at 180 °C. Optimum yoghurt percentage was selected by a sensory evaluation using 30 untrained panelists at day 01. Selected cake sample was wrapped with polythene and stored under room temperature for further analysis. Sensory evaluations were carried out using a 7-point hedonic scale (7–like extremely, 1 - Dislike very much) and sensory attributes such as appearance, colour, smell, taste and overall acceptability were assessed. Shelf life determination for selected cake sample was done by analyzing pH, yeast and mould count, total plate count, coliform and *Escherichia coli* at one week interval for 60 days of storage. Protein content, fat content and moisture content were analyzed by Kjeldhal method, Soxhelt method and oven dry method respectively as described in AOAC (2002). Data obtained from sensory evaluation were analyzed by Friedman rank test in MINITAB 14 software package.

Results and discussion

According to the sensory evaluation results of the cake sample with different wheat flour percentages, 20% (w/w) wheat flour incorporated cake had highest overall acceptability among three samples. Therefore, with the 20% (w/w) wheat flour, it gives best sensory characters to the cake. Furthermore, cake sample with 20% wheat flour and 30% yoghurt has highest preference with respect to overall acceptability. Therefore, 20% wheat flour and 30% yoghurt were selected as the best percentages to develop eggless cake. They can be stored for 60 days under room temperature without any quality deterioration. Similar to that, there is no growth of coliform, *E. coli*, yeast and moulds observed. The moisture content of the product was 26.28% and it fulfills the requirements of the Sri Lankan Standards for cakes with respect to moisture content. Considering the nutritional quality of the product, it has 6.13% protein and 7.94% fat. Fat content of this eggless cake is lower than the fat content of cakes with eggs and therefore it is more suitable for the people having high cholesterol levels.

Conclusions

Eggless cake can be developed using 20% wheat flour and 30% yoghurt with good sensory attributes. It can be stored for 60 days without any quality deterioration. Similarly, the fat content of this cake was lower than the cakes produced with eggs and therefore, more suitable for people who conscious on dietary fat contents.

References

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