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READY-TO-BAKE (RTB) COOKIE DOUGH

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ABSTRACT

The aim of ready-to-bake (RTB) cookie dough is to create a dough formula which can be kept and well-preserved at an optimum temperature. The RTB cookie dough that provides convenience to consumers in Malaysia has yet to be fully explored and properly introduced. Despite the abundance of cookies flour mix available on the shelves, there are still very limited choices available in Malaysian market for the RTB cookie dough. The formulation of this RTB cookie dough will ease the end user much more as it is already an all-in-one product whereby no extra ingredients need to be added and ready to be bake compared to the flour mix that still needs eggs and butter. The final product was kept refrigerated at temperature of 4°C and frozen at -18°C for preservation. The products were baked and compared in term of texture, taste, appearance against freshly made cookie dough through sensory test. The results show positive outcome, and the product can be kept up to 4 weeks in chiller and longer time in freezer. The RTB cookie dough also provided richer flavor and crunchier texture to the cookies. This product can be the new ultimate choice in term of convenience in baking for home users and hospitality business such as hotels and restaurants with a promising end product results in taste and texture. This RTB cookie dough is formulated using only Halal ingredients hence it can give more confidence to Muslim consumers. In conclusion, this study opens up an opportunity to produce new solution for convenience in baking cookies for Malaysians.

Keywords: Ready-to-bake (RTB), all-in-one product, frozen, refrigerated, Halal.

INTRODUCTION

Ready-to-bake dough production is not a new thing in the global food production industry. Previous studies were done focusing on different elements to study including usage of new ingredients to enhance the flavor and texture. Dough freezing is a way to shorten the producing time and labor intensity. This can extend the shelf life of the product, improve productivity and facilitate distributions to distant location (Chen, et al., 2013; Ban et al., 2016). However, Yadav et al. (2008) stated that during the freezing process and storage, a shift in physical, rheological and sensory may occur. Hence a choice of suitable ingredients and ratios can help to reduce the changes. A study by Kumar and Sudha in 2020 was made in trial of replacing the usage of fat

and sugar to multigrain cookies. The findings show that the absence of fats did increase the hardness of cookies and the closest result that can imitate at least to almost 50% was by using the dry peas (*Pisum Sativum*). Fat and sugar have a major role in building the structure of cookies (Mamat and Hill, 2014) and finding a total replacement that can give the same results will be hard so instead a minimal to partial replacement can be made instead (Zoulias et al., 2002).

According to previous findings, the researchers had studied the frozen dough's characteristic and the effect of oven types on characteristics of the biscuits or cookies. Dogan (2005) studies have shown that the frozen and chilled biscuits dough did not cause a significant difference in terms of physical characteristic such as spread, baking loss, surface color and density. The chilled dough with temperature of 4°C can be kept up to six weeks meanwhile the frozen dough with temperature of -18°C can be stored up to 6 months. Two types of ovens were used to test the result of finish products. The electric oven without air circulation gave better results on snap cookies and hazelnut biscuits. On the other hand, chocolate chip cookies show better results on gas oven with air circulation. Based on the previous studies, this study has guided to improve the cookie dough recipe and production in pursuit to give it better texture and taste along with convenience for the end users.

METHODOLOGY

Sample Preparation

The dough was prepared using regular all-purpose wheat flour, brown sugar, eggs, baking powder, soda bicarbonate, corn flour, salted butter and vanilla essence. The oven was preheated to 180°C where baking sheets were lined with parchment paper. In a medium bowl, flour, corn flour, soda bicarbonate and baking powder were sifted and combined. Meanwhile, in a separate bowl the butter and brown sugar were beat until creamy and well combined. Eggs and vanilla essence were beaten before adding the flour mixture gradually. The dough was portioned, packed and kept in refrigerator in two temperatures: chilled (4°C) and frozen (-18°C). The product is packed in air-tight condition to prevent oxidation process that might affect the dough. The ready-to-bake dough were baked on temperature of 180°C for 12-15 minutes using convection oven after four weeks of storage and compared with a freshly made batch of cookie dough in order to make comparison for sensory evaluation on texture and taste.

RESULTS AND DISCUSSIONS

Table 1. Sensory Evaluation and Observation

	Freshly made Dough	Chilled Dough (4°C)	Frozen Dough (-18°C)
Appearance:	Brown	Brown	Brown
Texture:	Crunchy	Crunchier than Freshly made Dough	Crunchier than Freshly made Dough and no significant differences with chilled dough

Taste:	Good with balanced flavor	Better in flavour intensity than freshly made dough	Better flavour intensity than freshly made dough and no significant differences with chilled dough
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The results have shown that there are differences between freshly made dough with the RTB cookie dough in terms of texture and flavor. However, there is no major difference in between chilled and frozen RTB dough.



Figure 1. RTB Dough in three different temperatures

In terms of spread and thickness, the freshly made dough has bigger spread compared to chilled and frozen dough. This may be due to the cold temperature of butter corporation in the dough hold the shape better compared to the freshly made dough.

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