THE EFFECT OF CHEESE POWDER IN THE FUNCTIONAL PROPERTIES OF CROISSANT PASTRY

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ABSTRACT

The increasing use of cheese powder as an ingredient used by food manufactures can be related to the changing consumer needs, identifying new consumer preferences, marketing and obtaining an acceptable capital return.

Cheese powder have been used in bakery products to improve their functional properties and impart flavour. Therefore, the development of cheese flavoured croissants was chosen to increase the utilization of cheese powder in the formulation croissant pastry. For this reason, the New Zealand Dairy Board (NZDB) predicted a brighter future for this type of dairy ingredient because of its dual acceptability of providing important functional characteristics and its cost advantage over other dairy products.

The addition of cheese powder to croissant pastry resulted in affecting the dough's physical properties and baking characteristics; i.e, increasing the dough elongational viscosity, decreasing the farinograph absorption values, decreasing the specific volume of baked croissants, and croissant firmness results indicating significant differences as a function of time for storage.

Cheese croissants containing ten percent level of cheddar-20 cheese powder was found to be the only one to have statistically significant differences in most of the attributes compared to CP1 and CP2 cheese powder when used in the formulation. Ten percent level of cheddar-20 cheese powder received the highest score and preferred by 77.8% of the panellists. Therefore, the ten percent of cheddar-20 cheese powder level was chosen for further development including the determination of the new cheese powder mixing method with its time-temperature relationship and evaluation of the market trial.

The new cheese powder mixing method (3% cheese powder mixed with dry ingredients, and 7% used to produce cheese paste) during which the paste was applied over the laminated dough and the cheese powder combined with the dry ingredients improved the cheese croissant quality characteristics when compared to the other mixing method (total 10% cheese powder mixed with other dry ingredients).

The baking time-temperature relationship of the new cheese powder mixing method was twenty seven minutes at 275°F which gave the best quality characteristics for high volume, a golden brown crust colour and flaky texture. This method received the highest scores and the most acceptable cheese croissant by the panellists.

The market evaluation results indicated that 87% of potential consumers preferred the cheese croissants. The total sales potential indicated to be approximately 2.000 tonnes/annum of finished product with a population of ten percent of the market share. The estimated net present value over five year product life was $3,206,000.

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And if all the trees on earth were pens and the ocean (were ink), with seven oceans behind it to add to its (supply), yet would not the words of Allah be exhausted (in the writing):for Allah is Exalted in powerfull of Wisdom.

(The Holly Qur'an 31:27) Luqman

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