

***CINNAMON ROLL MILLET (Ciromill) Sweet Bread Made From Millet Flour As A
High-Protein Dessert***

Muhammad Ndaru Cahyo Sumirat, Sugiyono

¹Yogyakarta State University; ² Yogyakarta State University

E-mail:muhammad3923ft2016@student.uny.ac.id

ABSTRACT

This study aims to 1) find the exact formula of cinnamon roll products substituted for millet flour.2) to find out public acceptance of cinnamon roll products substituted for millet flour. However, the general aim of this research is to increase local food consumption through the innovation of cinnamon roll products substituted for millet flour to emphasize the need for wheat flour in Indonesia. In the research and development procedure, this study uses the ADDIE model which is combined with the 4D model to produce Analysis (reference product studies), Design (product design), Develop (product manufacture and testing) and Dissemination (product exhibition). The subjects of this study were residents of PTBB FT UNY and the community at large. This research was conducted in the Chemistry Laboratory Building, Department of Culinary Engineering, with time allocation, from January 2019 to May 2019. Data collection was conducted to find out whether the product results were acceptable or not by the community. Data collection methods carried out by using product acceptance tests. Then the data from the product testing are analyzed descriptively and quantitatively. The results of study 1) the determination of the exact formula of cinnamon roll products substituted for millet flour.2) the results of the T test value between control and development were not significantly different, meaning that this product could be accepted. 3) the value of community acceptance of cinnamon roll substitution of millet flour at 3.75 with light is very preferred. The data shows that this substitution product is accepted by the community.

Keywords: High Protein, Millet Flour, Development, Utilization, Nutritional Test

PRELIMINARY

So far, flour in Indonesia is the raw material for making bakery products, one of which is bread. According to Astawan (2009), bread is generally made from hard wheat flour (high protein flour). Hard wheat flour can absorb large amounts of water, can achieve the right consistency of dough, has good elasticity to produce bread with fine crumbs, soft texture, large volume, and contains 12-13% protein.

Millet is a type of small seed cereal that was once the staple food of East and Southeast Asian communities before they planted other cereal plants. Millet is a minor economic plant but has a nutritional value similar to other food crops such as rice, corn, wheat, and other grain crops because millet plants themselves belong to the type of grain crops. Most of the people do not know millet as a food source so that millet plants have only been used as bird feed. Even though these plants can be processed into food sources by the community to support food security and anticipate hunger problems (Marlin, 2009).

In Indonesia, the use of millet flour is still not well known, its use has not yet developed in the community. Besides millet flour and the variety of processed products are still limited, it is used in the research environment. Millet flour is expected to also be used as raw material for various processed food products, such as noodles and various types of bread. This will be very helpful to reduce our level of dependence on flour, the more days the price increases and tends to be unstable.

One of the most popular pastry preparations today is cinnamon roll. Sweet bread is served generally in Northern Europe and North America. In Denmark, it

is known as Kanelsnegl, cinnamon snail and is a form of wienerbrød ('Wina Bread'). In North America, it is usually eaten for breakfast or dessert. The main ingredients are flour, cinnamon, sugar, and butter, which gives a strong and sweet taste. In some places, it is eaten as a breakfast food and served with cream cheese or sugar coating.

From the description of the background above, the researchers will try to innovate the cinnamon product, which later this product will use substitution of flour and millet flour. CINNAMON ROLL MILLET (Ciromill) is an innovation product that will be studied with the use of local materials, namely millet.

RESEARCH METHODS

Final Project aims to study and develop products by utilizing millet flour, so the expected final product is a quality millet flour material. To achieve these goals, a good method of research and development is needed. Product Research and Development Method (Research and Development) is a research method used to produce certain products and test the effectiveness of these products. The model that will be used is ADDIE which stands for Analysis, Design, Development or Production, Implementation or Delivery, and Evaluation combined with the 4D model which stands for Define, Design, Develop and Dissemination into Analysis, Design, Develop and Dissemination (Endang Mulyatiningsih, 2011).

1. Analysis, is a process of defining what will be studied by the researcher, namely analyzing needs, identifying problems (needs) and performing task analysis.

2. Design, commonly referred to as making a design. In making product designs based on the results of the analysis that will be the basis of the next product.
3. Development or production is the process of realizing design into reality. By developing a recipe with a product concept that has been designed by making and testing the product, the first product trial, the second product trial, and the panelist trial to be used as a reference during the Dissemination (exhibition) stage.
4. Dissemination, is a stage of dissemination with a wider scale by conducting publications or exhibiting products of development to consumers.

PLACE AND TIME OF RESEARCH

Research Place: Catering Laboratory PTBB

Department FT UNY

Time of Research: January-April 2019

DEVELOPMENT PROCEDURE

In the research and development procedure using the ADDIE model which is combined with the 4D model so as to produce Analysis (reference product studies), Design (product design), Develop (product manufacture and testing) and Dissemination (product exhibition).

1. Reference Product Study (Define)
To maintain the quality of the product development in order to be consistent with the characteristics of a standard product, the product development formula must still use the standard

prescription reference as a control. However, in making this product, the author reviews recipes from trusted sources, then compares the formula for each recipe to determine the basic formula.

2. Product Design

The formula design is used to determine the right recipe for the preparation of this product which is substituted with millet flour. The use of this millet flour as a substitute both in terms of taste, texture and aroma in the manufacture of these products. With a comparison of the addition of 20% of millet flour from the total flour for this product. In addition to the formula design, the researcher also determines the proportions of materials, techniques, and presentation.

3. Manufacture and Testing of Products (Develop)

Thiagarajan divides the development stage into two activities, namely developmental testing and expert appraisal. Developmental testing is a trial activity of product design on the real target of the subject. During this trial a response data, reaction or comment is sought from the target user of the model. The results are used to repair the product, after being repaired, then tested again until it produces an effective product. While an expert

appraisal is a technique to validate or assess the feasibility of product design. In this activity an evaluation is carried out by experts in their fields. Suggestions and input provided are used to improve the product.

4. Product Exhibition (Disemination)

At this stage, development products that have been validated by examiners, will be exhibited to the wider community to be retested based on their preferences for product development.

A. Materials and Research Tools

1. Material and product manufacturing tools

To get a quality product, the materials and tools used in the manufacture must also be of high quality and maintain its standard.

2. Material and Product Testing Tools

a. The product acceptance test sheet is given to the panelists when they will conduct product acceptance tests by providing product samples. Each product has its own characteristics, ranging from taste, color, texture, aroma, to presentation.

b. How to use the Product Acceptance Test Sheet in the presence of panelists, the product has been presented.

Panelists were asked to give an assessment of texture, color, aroma, taste, and presentation by giving advice that needed to be improved in the product, and the panelists were asked to fill in yes / no in product acceptance.

3. Data Source / Product Testing Subject

In this study, researchers used several panelists as data sources. Panelists provide an assessment of the texture, taste, color, aroma, and preference of cinnamon roll products.

4. Data Analysis Method

Data collection is done to find out whether the product results are acceptable or not by the community. Data collection methods carried out by using product acceptance tests. Product evaluation consists of several aspects, namely organoleptic (color, aroma, taste and texture), presentation and overall impression. Data obtained from product acceptance test is qualitative data, namely data that contains panelist comments on color, aroma, taste, texture, and presentation of the product. Then the data from the product testing are analyzed descriptively and quantitatively.

RESULTS AND DISCUSSION

a) Sensory Test (Semi Trained Panelist)

This stage the researcher conducted a test of preference or sensory with a number of 30 student panelists serving with a total of 60 products, namely 30 reference products and 30 development products. The following are semi-trained sensory test results:

Table 1. Semi-Trained Sensory Test Results

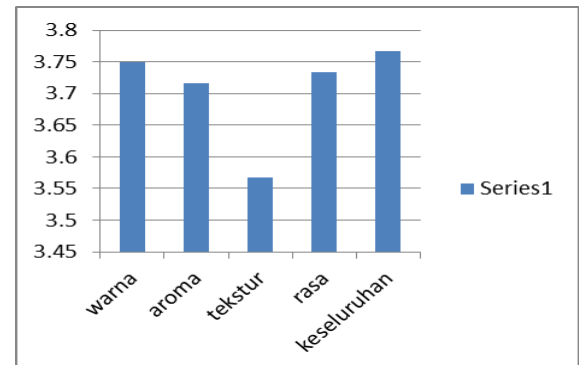
Information	Sig (2-tailed)	Information
Color	0.096	Ha
Aroma	0.839	Ho
Taste	0.083	Ha
Texture	0.083	Ha
Over all	0.165	Ho

The table above is the result of a semi-trained sensory test. After analyzing the color, aroma, texture, taste and the overall results were all more than 0.05. If P Value is more than 0.05 then control and development are not significantly different which means the product is accepted.

b) Wide Scale Preference Tests (80 Trained Panelists)

At this stage after the next product preference test is the exhibition stage. This stage makes 80 development products to get an assessment from the wider community. Exhibitors provide 80 development products with standard

recipes made and tasted directly by visitors. This is done to get a response to the test of preference for new products made. The final results of the preference test can be presented in the following table based on the number of 80 forms:



Graph 1. Wide Scale Favorite Test Results

The above graph represents the average score on the untrained panelist test which results in color and aroma having a score of 3.75 means that this substitution product is very preferred.

c) Proximate Test

The researcher also carried out a proximate test conducted at the Primary Chem-Mix Laboratory on April 7, 2019. The proximate test analyzed was water, ash, protein, fat, crude fiber, carbohydrates and energy with the following results:

Table 2. Proximate Test Results
Per100gr samples

Code sample	analysis	Test 1	Test 2
Cinnam on millet roll	water	18.2361 %	18.4262 %
	Ash	1.1406 %	1.2007 %
	Protein	8.0384 %	7.9947 %
	fat	19.6176 %	19.7442 %
	Crude fiber	12.2546 %	12.0641 %
	carbohydr ate	40.7121 %	40.5698 %
	Energy	368.606 9 kal/100 gr	369.016 7 kal/100 gr

The table above presents the results of the proximate test per 100 gr of black rice samples. From the results above it can be explained that the highest content is found in the water content with the results of 54.72gr / 100gr and the smallest is the content of crude fiber with the yield of 0.11 gr / 100gr.

CONCLUSION

Based on the results of research, analysis and data obtained from the results of research on the development of cinnamon roll products with the substitution of millet flour, conclusions can be drawn as follows:

1. Get the right formula for cinnamon roll products substituted for millet flour.

2. The value of the T test between control and development is not significantly different, meaning that this product is acceptable.
3. The value of community acceptance of cinnamon roll substitution of millet flour is 3.75 with light is very preferred. The data shows that this substitution product is accepted by the community.

SUGGESTION

By looking at the results of the T test, the control with development is not significantly different, meaning that this product can be accepted, maybe the number of substitution percentages can be done in even more or greater numbers, in order to optimize the level used for substitution.

SOURCE

<http://www.kerjanya.net/faq/18130-kayu-manis.html>

<http://www.bakerymagazine.com/2012/02/15/ragi-bahan-utama-pengembangan-adonan-roti>

<http://www.kerjana.net/faq/17928-gula-pasir.html>

anni faridah, 2008:302

<http://www.kerjanya.net/faq/18474-cream-cheese.html>

This template can be downloaded at: <http://journal.uny.ac.id/index.php/jptk>