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Substitution of Yellow Pumpkin Flour (Cucurbita Moschata) in Making Mille Crepes

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ABSTRACTS

This research aims to determine the acceptability of mille crepes products substituted with pumpkin flour, a local food with good nutritional value. Pumpkin consumption in Indonesia is low, with less than 5 kg per capita per year. Pumpkin flour is processed to extend its shelf life and can be used in various food preparations, such as mille crepes. The experimental method used includes recipe analysis, experimental trials, QDA organoleptic tests, organoleptic hedonic tests, making standard recipes, and organoleptic tests. The formulation of the research is a comparison of wheat flour and pumpkin flour for four treatments: MLCB 1, MLCB 2, MLCB 3, and MLCB 4. The QDA test results showed that the pumpkin flour substitution treatment significantly improved shape, texture, color, aroma, and taste. The MLCB 4 pumpkin flour substitution treatment was the most preferred formula. The organoleptic test results indicated that the mille crepes product substituted with pumpkin flour was positively received by consumers.

ARTICLE INFO

Article History:
Received 01 December 2023
Revised 05 Februari 2024
Accepted 10 March 2024
Available online 01 April 2024

Keyword:
Acceptability,
Mille Crepes,
Pumpkin Flour

1. INTRODUCTION

The level of pumpkin production in Indonesia will remain unbalanced with pumpkin consumption. According to Rahmawati in (Mardiah, et al., 2020: 98) the use of pumpkin is currently still limited to traditional food processing such as dodol, compote, soup, pudding, wet cakes and other foods with a short shelf life and limited distribution.

Halimah in (Avianti, TM., 2022: 1) stated that the amount of pumpkin consumption in Indonesia is very low, namely less than 5 kg per capita per year. Pumpkin production levels experienced increases and decreases from 2010 to 2019 with the highest production in 2016,

namely 603,325 tons. The Central Statistics Agency (2015) shows that the average production of pumpkin throughout Indonesia is around 20,000-21,000 tons/hectare.

The complete nutrition contained in local food, yellow pumpkin is a potential source of nutrition, yellow pumpkin is rich in dietary fiber, contains beta carotene, vitamin C, vitamin K, vitamin A, vitamin B3, minerals such as iron, potassium and magnesium (Sudarman , 2018).

Pumpkin that is processed into pumpkin flour will be substituted for wheat flour as an effort to increase the economic value of pumpkin fruit. Pumpkin flour is a processed form of pumpkin made with the aim of extending the shelf life of pumpkin and expanding its use in food products that require formulation (Que, et al., 2008: 98).

Pumpkin flour can be used to make various kinds of food preparations, one of which is making mille crepes. Pumpkin flour protein contains quite high amounts of gluten type protein. Pumpkin flour has good flour quality because it has good gelatinization properties, so it can form a dough with good consistency, elasticity, viscosity and elasticity, so it can produce crepes with a soft texture (Putri, L., 2018: 2).

Mille crepesis one of the desserts that is currently in great demand among the public. According to Yustiani (in Christanti, 2021) mille crepes originate from one region in France. The word 'mille' in French means thousands or thousands of layers. Mille crepes usually consist of more than 20 layers of thin crepes accompanied by a smear of soft cream.

One of the drawbacks of mille crepes made only from wheat flour is that the texture is thin, which makes mille crepes a little dry. Therefore, substitution with pumpkin flour is one idea for developing mille crepes products to reduce the use of wheat flour. The characteristic of mille crepes is that they are a dessert that has a thin and soft texture. Apart from that, mille crepes do not require much development so there is potential for adding pumpkin flour to the formulation (Christanti, 2021).

Apart from improving the texture of mille crepes to make them softer, the beta-carotene content in pumpkin flour has the advantage of being a natural coloring agent in making mille crepes dough so it does not require additional coloring (Nur Laila, 2017). Based on this background, it is important for researchers as students from the Culinary Education Study Program at the Indonesian Education University to conduct research with the title "Substitution for Yellow Pumpkin (Cucurbita Moschata) Flour in Making Mille Crepes".

The aim of this research is to obtain data on the substitution of pumpkin flour in the manufacture of mille crepes with the substitution of pumpkin flour and consumer acceptance.

a) Know the standard formula/recipe for making mille crepes by substituting pumpkin flour. b) Understand the analysis of organoleptic hedonic test results for mille crepes substituted with pumpkin flour in terms of color, aroma, taste and texture. c) Understand the analysis of consumer acceptability test results for mille crepes substituted with pumpkin flour in terms of color, aroma, taste and texture.

2. METHODS

The method used in this research is an experimental research method with a quantitative approach. The research that will be carried out by the author is considered a true experiment. Experiments were carried out to make mille crepes products with the substitution of pumpkin flour. The author also wanted to know the acceptability of mille crepes products with the substitution of pumpkin flour in the community. QDA (Quantitative Descriptive Analysis) test to determine the formula for mille crepes product innovation with the substitution of pumpkin flour and organoleptic tests for product acceptability.

The steps taken in this research are: 1) Analyzing the recipe to get a starting recipe that will be used as a reference. 2) Carry out trials to get the best mille crepes product with the

DOI: http://dx.doi.org/10. 17509/xxxxt.vxix
p- ISSN 2085-9783 e- ISSN 2549-6123

substitution of pumpkin flour. 3) Carrying out a QDA test on the starting recipe for trained panelists to get input to get a standard recipe. 4) Conduct a trial of mille crepes products with the substitution of pumpkin flour. 5) Carry out QDA tests again with trained panelists to get suggestions and input on the products that have been created by the author. 6) Next, the author will carry out an acceptance test on 30 untrained panelists using a questionnaire.

The population and sample involved in this research consisted of 3 trained panelists for the hedonic organoleptic test and QDA organoleptic test, who were the Chefs of the Grand Tjokro Hotel Bandung. Then for the organoleptic test, there were 30 untrained panelists, namely culinary students class of 2020 and students in the UPI FPTK environment, so the number of participants in this research was 33 people.

The instrument used to collect data in this research was a questionnaire. The instrument used to carry out the QDA test is a descriptive test sheet and for the acceptability test a questionnaire is used. The type of questionnaire used contains a Likert checklist scale. The scale used for the level of liking can be seen in Table 1:

Table 1. Likert Scale Checklist

Score	Criteria
1	Very dislike
2	Do not like
3	Just like it
4	Like
5	Really like

This test provides an assessment of shape, color, aroma, taste, texture and overall preference for the product.

The data analysis techniques used in this research are qualitative and quantitative. Qualitative data in the form of criticism and suggestions put forward by expert panelists to get a starting recipe for mille crepes by substituting pumpkin flour. The quantitative data analysis technique in this research uses descriptive statistical analysis in the form of QDA test results using spider web and hedonic organoleptic test results using 5 hedonic scales, namely:

DOI: http://dx.doi.org/10.17509/xxxx.vxix
p- ISSN 2775-8400 e- ISSN 2775-9857

Table 2. Hedonic Scale

Score	Criteria
1	Very dislike
2	Do not like
3	Just like it
4	Like
5	Really like

3. FINDINGS AND DISCUSSION

3.1. Product Development Results

Product trials were carried out four times, with the best formula result being MLCB 4 (fourth trial mille crepes) which was used as the standard recipe for making mille crepes substituting pumpkin flour. The results of the MLCB 4 trial can be seen in Figure 1 below:

Figure 1. Results of the MLCB 4 Formula Trial

The MLSB 4 formula can be seen in Table 3 below:

Table 3. MLSB 4 Formula

Material	Amount
Mille crepes ingredients	
Liquid milk	500 ml
Flour	80 grams
Pumpkin flour	65 grams
Egg	2 items
Sugar	45 grams
Margarine/butter	45 grams
Salt	A pinch
Whipped cream ingredients	
Whipped cream	500 ml
Fine granulated sugar	65 grams
Mocha flavoring	2 tsp

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p- ISSN 2085-9783 e- ISSN 2549-6123

The MLCB 4 formula uses a ratio of 60% pumpkin flour to wheat flour, 65 grams of pumpkin flour and 80 grams of wheat flour, 500 ml of liquid and 45 grams of fat. The filling ingredients used are whipped cream, powdered sugar and mocha flavoring.

The next step is to carry out a QDA test to determine the attribute assessment of the mille crepes product substituted for pumpkin flour. The QDA test results for the mille crepes product substituted for pumpkin flour can be seen in Figure 2 below:

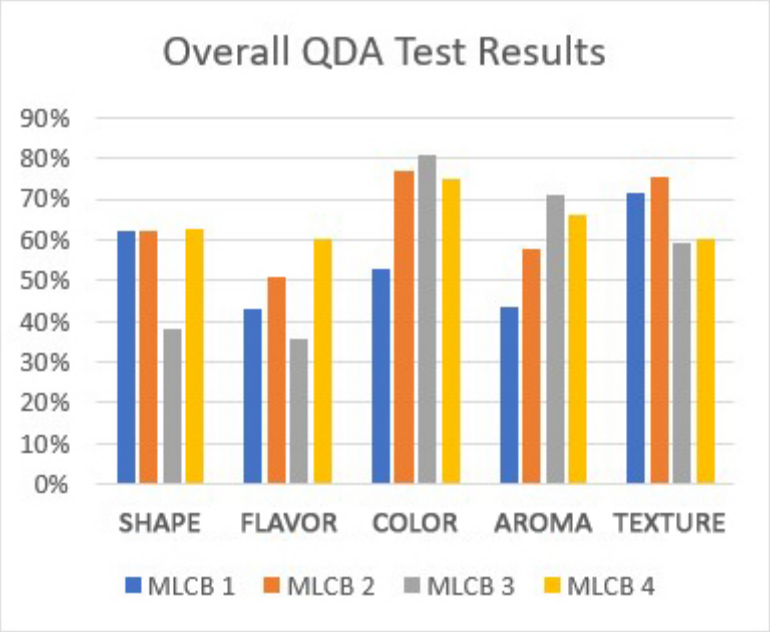

Figure 2. Overall QDA Test Results Diagram

Information:
MLCB 1: Mille crepes 1st trial
MLCB 2: Mille crepes 2nd trial
MLCB 3: Mille crepes 3rd trial
MLCB 4: Mille crepes 4th trial

It can be seen in Figure 2 showing the results of the sensory attribute assessment of the four samples of mille crepes products substituted with pumpkin flour. The appearance or shape indicator shows a significant decrease in MLCB 3 with a value of 38.3, this is because the MLCB 3 formula uses the highest amount of pumpkin flour, namely 75 grams.

The sweetness indicator MLCB 1 got a score of 43 using 20 grams of sugar and 25 grams of pumpkin flour, MLCB 2 got a score of 50.7 using 30 grams of granulated sugar and 50 grams of pumpkin flour, MLCB 3 got a score of 35.7 using 45 grams of sugar and 75 grams of pumpkin flour, and MLSB 4 got a score of 60 using 45 grams of sugar and 65 grams of pumpkin flour.

The color indicator on MLCB 1 got a score of 52.7 using 25 grams of pumpkin flour, MLCB 2 got a score of 77 using 50 grams of pumpkin flour, MLCB 3 got a score of 80.7 using 75 grams of pumpkin flour, and MLCB 4 got a value 75 using 65 grams of pumpkin flour.

The aroma indicator on MLCB 1 pumpkin aroma is still very weak with a value of 43.7 because it only uses 25 grams of pumpkin flour, then the highest rating is achieved by MLCB 3 with a value of 71 with a total of 75 grams of pumpkin flour used. However, the expert panelists said that the aroma of pumpkin in MLCB 3 was too dominant, so for the MLCB 4 formula the use of pumpkin was reduced to 65 grams and got a score of 66.3.

DOI: http://dx.doi.org/10.17509/xxxx.vxix
p- ISSN 2775-8400 e- ISSN 2775-9857

The formula for MLCB 4 gets a score of 60 and produces a soft and thin crepe skin texture. Apart from that, this texture indicator is also influenced by the texture of the pumpkin flour, which still contains fine grains from the flour milling, so that it can still be felt on the surface texture of the crepes skin.

3.2. Acceptability Results with Organoleptic Tests

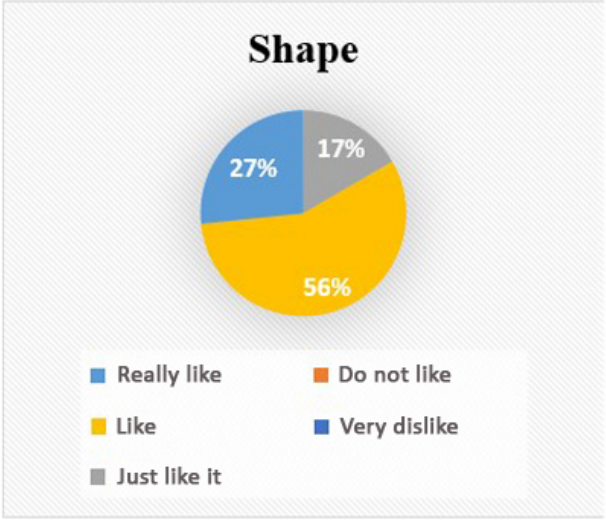

Figure 3. Organoleptic Test Results in Terms of Shape

The results of the organoleptic trial of mille crepes products in terms of shape from 30 untrained panelists stated that they liked it very much as much as 27%, said they liked it as much as 56%, said they quite liked it as much as 17%, they didn't like it as much as 0% and they really didn't like it as much as 0%, which means no There are panelists who don't like and really don't like Mille Crepes products. Overall, the majority of untrained panelists preferred the mille crepes shape.

The shape of mille crepes is greatly influenced by the water absorption capacity of pumpkin flour, in accordance with the opinion of Purwanto et al. Flask soaked in various concentrations of sodium metabisulfite in flour production, the best concentration is 0.3%, which has the highest value for water absorption, solubility, lightness, dispersibility, protein and fat. The pumpkin flour used in making mille crepes has high water absorption capacity, making the dough thicker depending on the amount of pumpkin flour used in the dough.

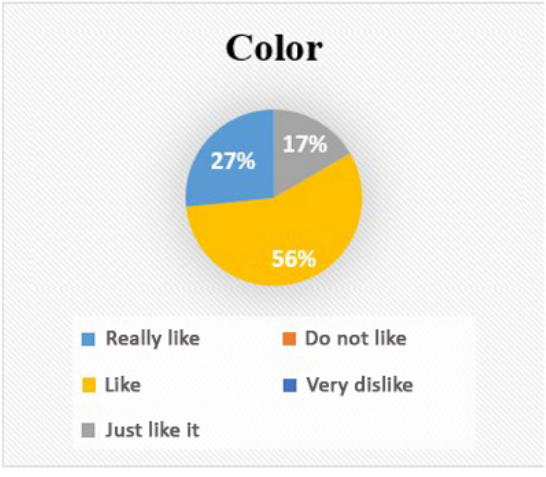

Figure 4. Organoleptic Test Results in Terms of Color

DOI: http://dx.doi.org/10. 17509/xxxxt.vxix
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The results of the organoleptic test of mille crepes products in terms of color from 30 untrained panelists stated that they liked it very much as much as 27%, said they liked it as much as 56%, said they quite liked it as much as 17%, they didn't like it as much as 0% and they really didn't like it as much as 0%, which means there is none. panelists who don't like and really don't like mille crepes products. Overall, the majority of untrained panelists preferred the color of mille crepes.

The results of making mille crepes tend to be brownish yellow, in accordance with the opinion of Purwanto et al. The process of producing pumpkin into flour can cause a browning reaction. Therefore, the color of mille crepes is influenced by the amount of pumpkin flour used in the dough. The highest color score is in the MLCB 3 formula because it uses the most pumpkin flour.

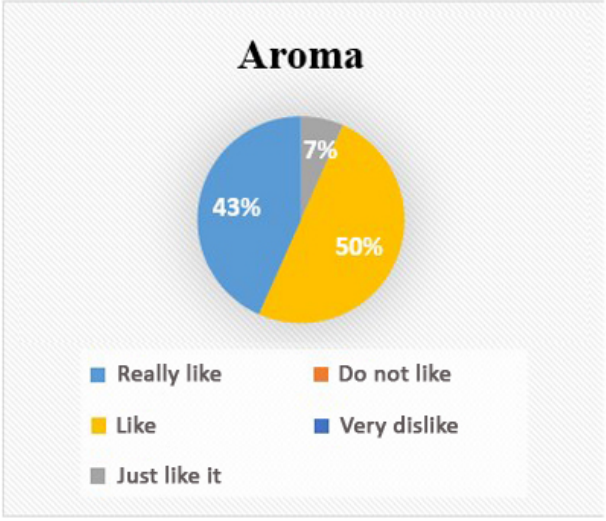

Figure 5. Organoleptic test results in terms of aroma

The results of the organoleptic test of mille crepes products in terms of aroma from 30 untrained panelists stated that they really liked it as much as 43%, said they liked it as much as 50%, said they liked it quite well as much as 7%, they didn't like it as much as 0% and they really didn't like it as much as 0%, which means nothing. panelists who don't like and really don't like mille crepes products. Overall, the majority of untrained panelists preferred the aroma of mille crepes.The benefits of pumpkin flour include its high beta-carotene content, which in the form of pumpkin flour has a distinctive aroma. However, panelists tend to prefer the aroma of mille crepes which is not too dominant, namely the MLCB 4 formula.

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Figure 6. Organoleptic test results in terms of taste

The organoleptic test results of mille crepes products in terms of taste from 30 untrained panelists stated that they liked it very much as much as 27%, said they liked it as much as 56%, said they quite liked it as much as 17%, they didn't like it as much as 0% and they really didn't like it as much as 0%, which means nothing panelists who don't like and really don't like mille crepes products. Overall, the majority of untrained panelists preferred the taste of mille crepes.

Old pumpkin has a high sugar content, which affects the quality of the flour produced. Using pumpkin flour that is too dominant will add a bitter aftertaste to the mille crepes skin. The panelists preferred the results of the MLSB 4 formula because the pumpkin flour and granulated sugar used were balanced and reduced the bitter aftertaste of the pumpkin flour.

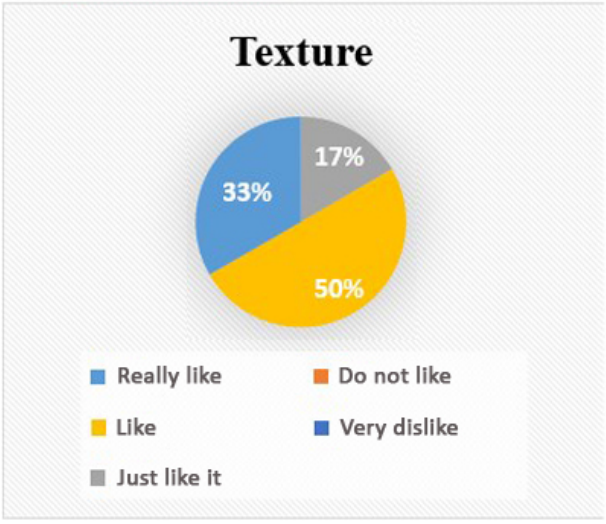

Figure 7. Organoleptic Test Results in Terms of Texture

The results of the organoleptic test of mille crepes products in terms of texture from 30 untrained panelists stated that they liked it very much as much as 33%, said they liked it as much as 50%, said they liked it quite well as much as 17%, they didn't like it as much as 0% and they really didn't like it as much as 0%, which means nothing. panelists who don't like and really don't like mille crepes products. Overall, the majority of untrained panelists preferred the texture of mille crepes.

DOI: http://dx.doi.org/10. 17509/xxxxt.vxix
p- ISSN 2085-9783 e- ISSN 2549-6123

Pumpkin made from flour has a yellowish color with fine grains and has a distinctive smell like pumpkin, which is one of the factors in the texture of the mille crepes skin. There are still fine grains from the grinding.

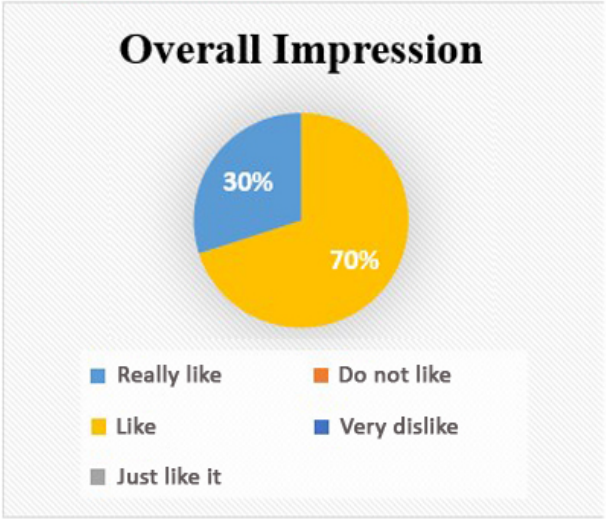

Figure 8. Organoleptic Test Results in Terms of Overall Impression

The overall organoleptic test results of Mille Crepes products from 30 untrained panelists stated that they liked it very much as much as 30% and said they liked it as much as 70%, stated that they liked it quite well as much as 0%, they didn't like it as much as 0% and they really didn't like it as much as 0%, which means there were no panelists. who don't like and really don't like Mille Crepes products. Overall, the untrained panelists predominantly preferred the mille crepes product as a substitute for pumpkin flour.

4. CONCLUSION

The trial process for making mille crepes products consists of QDA (Quantitative Descriptive Analysis) tests and organoleptic tests carried out by expert panelists and untrained panelists. The QDA (Quantitative Descriptive Analysis) test was carried out by three expert panelists who are chefs from the Grand Tjokro Hotel Bandung who are of course experts in understanding the characteristics of good mille crepes, so that during the testing process the author received very useful input and suggestions for the success of making the product. mille crepes.

The organoleptic test was carried out by 30 untrained panelists who were culinary arts students and students from other majors within the FPTK UPI environment.

From a series of trials carried out 4 times, namely MLCB 1, MLCB 2, MLCB 3 and MLCB 4, the author obtained the best formula for making mille crepes products substituted for pumpkin flour, namely MLCB 4 (65 grams of pumpkin flour : 80 grams of wheat flour). The results of the research show that the acceptability of mille crepes products substituted for pumpkin flour has implications, namely that pumpkin flour can be used as a substitute for wheat flour in making mille crepes substituted for pumpkin flour and can be well accepted by consumers so that it can improve the texture of mille crepes substituted for flour. summer squash.

DOI: http://dx.doi.org/10.17509/xxxx.vxix
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