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Acceptance of Nastar Substitution of Kepok Banana Flour

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ABSTRACTS

Nastar substitute for kepok banana flour is an innovative product from cookies or nastar pastries which are included in the type of molded cookies made from wheat flour which are then substituted with banana kepok flour. The purpose of this study was to obtain nastar recipes with banana kepok flour substitution and to find out consumer acceptance of kepok banana flour substitute nastar products. The method used in this study is an experimental method with product development starting from recipe analysis, product trials, to finding a reference recipe for making nastar with banana kepok flour substitution of 40%, 60% and 80%. Then, hedonic tests, QDA tests, and ranking tests were carried out by 3 expert panels to determine the best product samples. Furthermore, The samples were distributed to 30 consumer panelists who were randomly selected by means of a questionnaire based on 5 hedonic scales, namely strongly dislike, dislike, moderately like, like and really like. The results of the consumer hedonic test stated that nastar products were very liked and positively received by consumers.

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1. INTRODUCTION

Cookiesis a long lasting product. In general, the quality of cookies, namely crunchy structure, brittle, dry, brownish yellow in color, or according to the color of the ingredients used, has a distinctive fragrant aroma, and tastes delicious, savory and sweet" (Sutomo, 2012: 18). According to Brown in 2000, how to print cookies can be classified into 6 types, namely Molded cookies, Pressed cookies, Bar cookies, Drop cookies, Rolled cookies, and Ice boxes or refrigerators.

Nastar is a type of molded cookies made from wheat flour, powdered sugar, margarine and egg yolks. Nastar are generally small round in shape filled with pineapple jam (Ariyani, 2015). There needs to be innovation that can bring out other versions of nastar cakes without losing their original characteristics.

Substitution is "the addition of certain nutrients to food products that are made to resemble or replace other food products with higher nutritional value" (Kurniati, AD, 2017).

Replacing one material with another cannot be done directly because it has to pay attention to its acceptance by the community, therefore it needs to be done in stages through various trials product. In line with another opinion which says that, "substitution also provides consumers with choices for an existing product by utilizing substitute materials such as various local flours" (Prayudha, 2013). Various types of local flour that have been produced and are widely available in the market but are still rarely used in food products, such as purple sweet potato flour, canna flour, and banana flour.

According to Winarno in 2000, banana flour is an alternative form of utilization of banana commodities which is recommended because it is more resistant to storage, easy to mix (make composites), enriched with nutrients (fortified), shaped, and cooks faster according to the practical demands of modern life. As Kaleka's opinion in 2013 stated, banana flour is a semi-finished product that can be used to make cakes, breads and pastries. Basically, all types of bananas can be processed into banana flour, with sufficient level of ripeness. However, the properties of the banana flour produced are not the same for each type of banana. Bananas that are the best for producing banana flour are kapok bananas because they have a richer color white compared to other bananas (Santoso, 1995).

Based on the description above, it can be concluded that banana kepok flour can be substituted for making nastar cakes. On the basis of this problem, the author, as a student of the Patisserie Specializing in Catering Education Study Program who has taken Patisserie Courses including Cookies and Candy, is interested in conducting research on "Acceptability of Nastar Banana Flour Substitute Kepok".

1. General purpose
   The general objective of this research is to analyze the Acceptability of Nastar Banana Flour Substitute Kepok.
2. Special purpose
   a. Obtain the Nastar recipe formulation with Kepok Banana Flour Substitution.
   b. Assessing the acceptability of taste, color, aroma and texture of Nastar Banana Flour Substitute Kepok.

2. METHODS

This study uses an experimental method that is used to look for the effect of certain treatments on others under controlled conditions (Sugiyono, 2011).

This research is a pure experimental research with the Hedonic Test (Favourability Test) to determine the level of preference of the expert panelists for 4 product samples, the QDA Test (Quantitative Descriptive Analysis) to determine the assessment of indicators on the product and the Hedonic Ranking Test to determine the sample that is most liked by the panelists expert. Then, made a standard recipe for pineapple kepok flour substitution samples according to the expert panelist input on the Hedonic Test (Favourability Test), QDA Test (Quantitative Descriptive Analysis) and Hedonic Ranking Test. The sample was then distributed to 30 consumer panelists for the Consumer Acceptability Test by filling out a questionnaire with 5 hedonic scales, namely, score 1 = really dislike, 2 = don't like, 3 = quite like, 4 = like, and 5 = really like.

2.1. Participant

Participants are all people or humans who participate or take part in an activity. Participants in this study were 3 expert panelists with very high specific sensitivity who were obtained due to talent or very intensive training and 30 consumer panelists who were very

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general and could be determined on an individual basis or certain group. This is done to be able to represent the acceptability of nastar as a substitute for kepok banana flour.

2.2. Research Instruments

The data obtained is both primary data and secondary data, in collecting or measuring it always uses a measuring device which is commonly called an instrument. Research instruments are the tools needed or used to collect data (Alhamid and Anufia, 2019). The instrument used in this study was a questionnaire or questionnaire with 5 hedonic scales, namely, a score of 1 = very dislike, 2 = dislike, 3 = quite like, 4 = like, and 5 = really like.

2.3. Research procedure

1. Time and Place of Research
   The research was conducted in June 2022 at the Indonesian Education University.
2. Tools and materials
   The tools used in making kepok banana flour substitution nastar are divided into 3 parts, namely preparation tools, processing tools, and presentation tools.
   The material used in making pineapple kepok flour substitution is banana flour kepok, wheat flour, corn patti flour, powdered milk, powdered sugar, egg yolks, butter, margarine and pineapple jam as filling.
3. Product Research Stage
   Before starting experiments for product development, the authors conducted an analysis of 10 (ten) nastar product recipes (sourced from books, electronic media as well as YouTube channels) to obtain standard recipes to be used.
   Then trials were carried out using reference recipes until the resulting product was able to resemble nastar products in general according to the characteristics in terms of shape, color, taste, aroma and texture.
4. Organoleptic Test Stage
   Testing the acceptability of nastar product as a substitute for kepok banana flour began with a hedonic test, then a QDA test and a ranking test by 3 expert panelists. From the test by the expert panelists, the sample with the best formulation was obtained, which was then tested for consumer acceptance to determine consumer acceptance of the nastar product as a substitute for kepok banana flour. Samples shared to 30 consumer panelists who were randomly selected with a questionnaire assessment based on 5 hedonic scales, namely strongly dislike, dislike, moderately like, like and really like.

2.4. Data analysis

The collected data were analyzed using descriptive statistical methods assisted by Microsoft Excel and then presented in the form of tables and diagrams.

2.4.1. Expert Panelist

In the hedonic test, 3 expert panelists were given 3 product samples and then asked to fill out a nastar questionnaire for kepok banana flour substitution. Panelists provide an assessment of likes or dislikes on a score scale for the product. Data analysis used 5 indicators in the sample consisting of color, aroma, taste, texture and overall impression. The range of scores in the assessment is:

a. Really like 5
b. Like 4
c. Rather like 3

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d. Do not like 2
e. Really dislike 1

Information :
% = Percentage score
n = Number of scores obtained
N = ideal score (highest score x number of panelists)

In the QDA test, the expert panelists were given a questionnaire sheet in which each question had a long line 10 cm with a total value of each question is 100 points. Thus 1 cm means 10 points earned. The data that has been obtained is then input into the Ms. software. Excel then averaged the data, after getting the average results the data was analyzed to get conclusions from the QDA test on nastar products substituted for kepok banana flour.
The ranking test was carried out to select from the three samples of nastar product substituted for kepok banana flour based on the level of preference of the expert panelists. The data that has been obtained is then sorted and analyzed to obtain conclusions from the ranking test of the nastar product substituted for kepok banana flour.

2.4.2. Consumer Panelist

In the hedonic test, 30 consumer panelists were given 1 product sample and then asked to fill out a nastar questionnaire for kepok banana flour substitution. Panelists provide an assessment of likes or dislikes on a score scale for the product. Data analysis used 5 indicators in the sample consisting of color, aroma, taste, texture and overall impression.
The range of scores in the assessment is:

a. Really like 5
b. Like 4
c. Rather like 3
d. Do not like 2
e. Really dislike 1

Information :
% = Percentage score
n = Number of scores obtained
N = ideal score (highest score x number of panelists)

3. RESULTS AND DISCUSSION

3.1. Likelihood Level Test Results

3.1.1. Hedonic Test

It can be observed in the diagram above, the results of the hedonic test of color indicators in nastar samples with a 40% substitution of kepok banana flour (NPK1) as many as 33% of panelists said they liked it and 67% of panelists said they really liked it. Nastar samples with banana kepok flour substitution of 60% (NPK2) as many as 100% of the panelists said they really liked it. Nastar samples with 80% (NPK3) substitution of kepok banana flour (NPK3) as many as 100% of the panelists said they really liked it. The hedonic test results of the color indicators can be observed in the diagram below:

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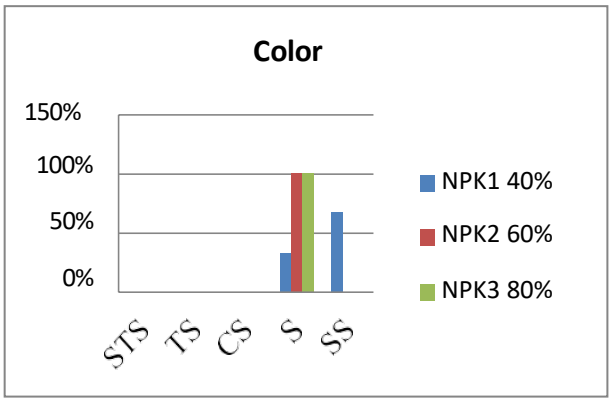

Figure 1. Color indicator hedonic test results.

The hedonic test results of the aroma indicator can be observed in the diagram below.

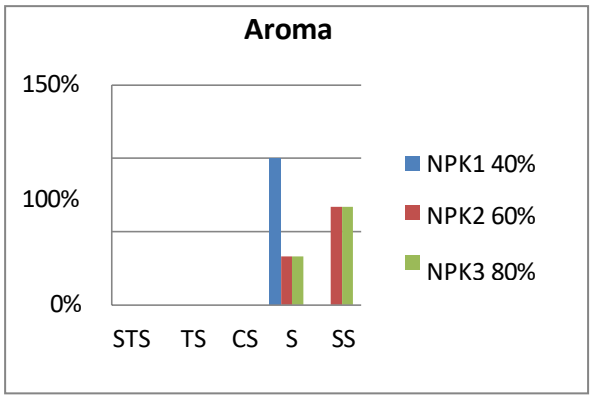

Figure 2. Hedonic test results for aroma indicators.

It can be observed in the diagram above, the results of the hedonic test of the aroma indicator in the nastar sample with a 40% substitution of kepok banana flour (NPK1) as many as 100% of the panelists said they liked it. Nastar samples with banana kepok flour substitution of 60% (NPK2) as many as 33% of the panelists said they liked it and 67% of the panelists said they really liked it. Nastar sample with banana kepok flour substitution of 80% (NPK3) as many as 33% of the panelists said they liked it and 67% of the panelists said they really liked it.

The hedonic test results of the taste indicators can be observed in the diagram below.

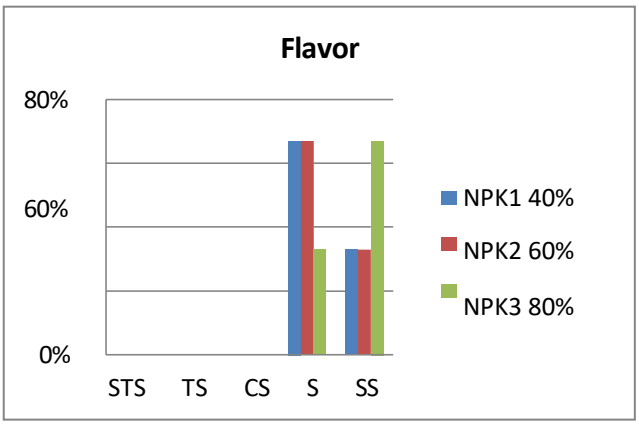

Figure 3. Taste indicator hedonic test results.

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It can be observed in the diagram above, the hedonic test results of the taste indicators in the nastar sample with a 40% substitution of kepok banana flour (NPK1) as many as 67% of the panelists said they liked it and 33% of the panelists said they really liked it. Nastar samples with banana kepok flour substitution of 60% (NPK2) as many as 67% of the panelists said they liked it and 33% of the panelists said they really liked it. Nastar sample with banana kepok flour substitution of 80% (NPK3) as many as 33% of the panelists said they liked it and 67% of the panelists said they really liked it.

The hedonic test results of the texture indicators can be observed in the diagram below.

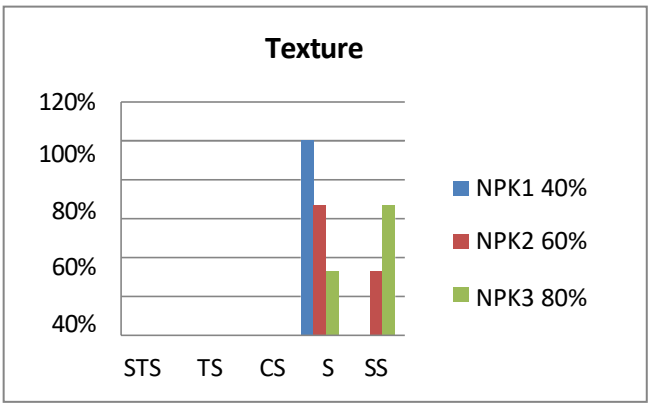

Figure 4. Hedonic test results for texture indicators.

It can be observed in the diagram above, the results of the hedonic test of texture indicators on nastar samples with 40% substitution of kepok banana flour (NPK1) as many as 100% of the panelists said they liked it. Nastar samples with banana kepok flour substitution of 60% (NPK2) as many as 67% of the panelists said they liked it and 33% of the panelists said they really liked it. Nastar sample with banana kepok flour substitution of 80% (NPK3) as many as 33% of the panelists said they liked it and 67% of the panelists said they really liked it.

The hedonic test results of the overall effect indicators can be observed in the diagram below.

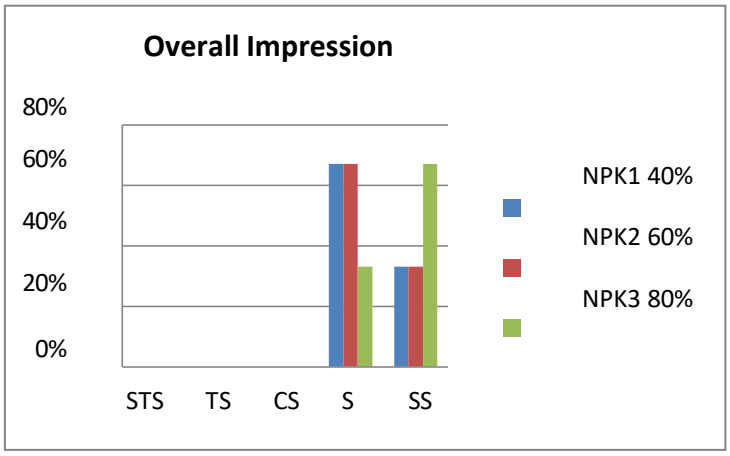

Figure 5. Hedonic test results for overall impression indicators.

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Can observed on diagram above, the results of the hedonic test of the overall effect indicator on the nastar sample with a 40% substitution of kepok banana flour (NPK1) as many as 67% of panelists said they liked it and 33% of the panelists said they really liked it. Nastar samples with banana kepok flour substitution of 60% (NPK2) as many as 67% of the panelists said they liked it and 33% of the panelists said they really liked it. Nastar sample with banana kepok flour substitution of 80% (NPK3) as many as 33% of the panelists said they liked it and 67% of the panelists said they really liked it.

3.1.2. QDA test

QDA test results can be seen in the table and diagram below.

Table 1. QDA test results

INDICATOR	Average per Code Sample		
	NPK1	NPK2	NPK3
Sighting	8,7	8,4	7,3
Taste (Nastar)	7,9	8,6	8,9
Flavor (Banana)	6,1	7,7	8,6
Aroma	6,6	7,7	8,7
Texture	6,6	7,9	8,9

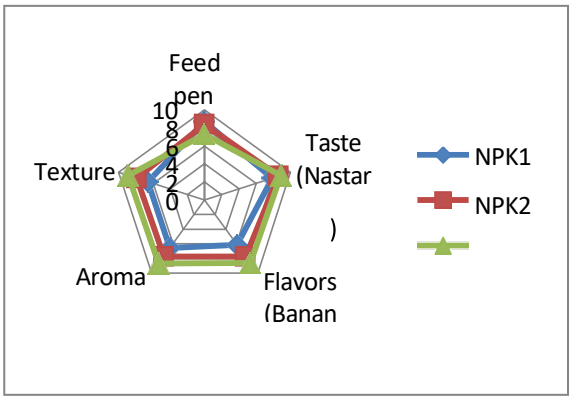

Figure 6. QDA test results.

It can be observed in the diagram above, the QDA test results of each indicator on the three nastar samples with kepok banana flour substitution. In the appearance indicator for nastar product evaluation, the substitution of kepok banana flour was 40% (NPK1) scored 8.7 and 60% (NPK2) scored 8.4. Then in the nastar product, the substitution of kepok banana flour as much as 80% got a value of 7.3 and experienced a decrease. . This is caused by the more banana flour content that is substituted to make the appearance of pineapple kepok flour substitution becomes browner and has lots of cracks.

In the third nastar taste indicator, nastar products substituted for kepok bananas experienced an increase, namely nastar products with 40% substitution of kepok banana flour (NPK1) scored 7.9, nastar products substituted for kepok banana flour as much as 60% (NPK2) scored 8.6 , and for nastar products with 80% substitution of kepok banana flour (NPK3) a score of 8.9. This is caused by the more banana flour substituted makes the nastar taste stronger and more dominant.

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In the banana flavor indicator, the three nastar products substituted for kepok banana flour by 40% (NPK1), 60% (NPK2), and 80% (NPK3) increased. This is caused by the more content of substituted banana flour makes the banana taste stronger in nastar products.

There was a significant increase in the aroma indicator for the three nastar products that substituted for kepok banana flour. In the nastar product, 40% substitution of kepok banana (NPK1) got a score of 6.6. In the nastar product, the substitution of kepok bananas was 60% (NPK2) which scored 7.7. In the nastar product, the substitution of kepok bananas was 80% (NP31) with a score of 8.7. This is caused by the more content of substituted banana flour, the stronger the smell of bananas can be smelled in nastar products.

There was an increase in the texture indicators of the three nastar products substituted for kepok banana flour. This is caused by the more banana flour substituted, the nastar texture becomes more melted but still firm.

3.1.3. Ranking Test

Then a hedonic ranking test was carried out to measure the level of preference of the expert panelists for the three samples of nastar product substituted for kepok banana flour. The most preferred sample will receive a rating of one and will be used for hedonic tests on consumer panelists. Processing of the hedonic ranking test data produces a preference value for the nastar substitute for kepok banana flour which is presented in the diagram below.

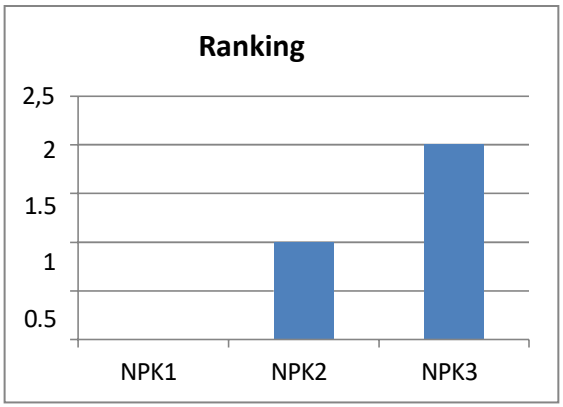

Figure 7. Ranking test results.

From the diagram above it can be seen that the three expert panelists did not choose nastar products with 40% of kepok banana flour substitution (NPK1). One of the three expert panelists chose nastar products with a 60% (NPK2) substitution of kepok banana flour. Then two of the three expert panelists chose nastar products with 80% (NPK3) substitution of kepok banana flour. So it can be concluded that nastar product with banana kepok flour substitution of 80% (NPK3) has the highest level of preference and is used in hedonic tests on consumer panelists.

3.1.4. Consumer Acceptance Test

The consumer acceptance test was carried out by distributing samples of nastar products with 80% substitution of kepok banana flour to 30 consumer panelists who were selected randomly.

Panelists stated their level of preference based on 5 indicators, namely appearance, aroma, taste, texture, and overall impression of the nastar product with 80% substitution

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of kepok banana flour. The hedonic test results for the acceptability of nastar products with 80% substitution of kepok banana flour are as follows:

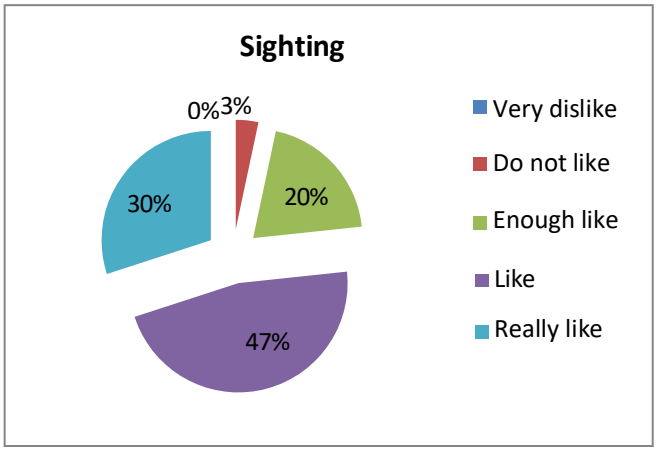

Figure 8. Hedonic test results for appearance indicators.

Based on the diagram above, in terms of appearance indicators on nastar products with 80% substitution of kepok banana flour, 3% of consumer panelists stated they did not like it. As many as 20% of consumer panelists said they quite liked it. As many as 47% of consumer panelists said they liked it. Then as many as 30% of consumer panelists said they really liked it. Therefore, it can be concluded that the level of preference of consumer panelists for nastar products with banana kepok flour substitution is as much as 80% of the appearance indicator, expressing likes and can be positively accepted by consumers.

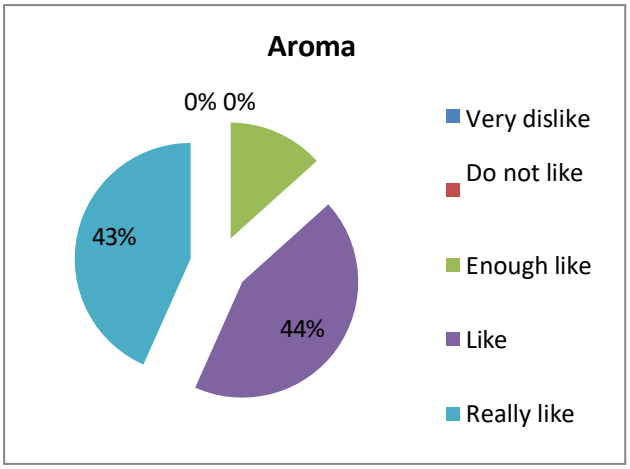

Figure 9. Hedonic test results for aroma indicators

Based on the diagram above, in terms of aroma indicators in nastar products with 80% substitution of kepok banana flour, 13% of the panelists quite liked it. As many as 44% of consumer panelists said they liked it. Then as many as 43% of consumer panelists said they really liked it. Therefore, it can be concluded that the level of preference of consumer panelists for nastar products with banana kepok flour substitution is as much as 80% of the aroma indicator, expressing likes and can be positively accepted by consumers.

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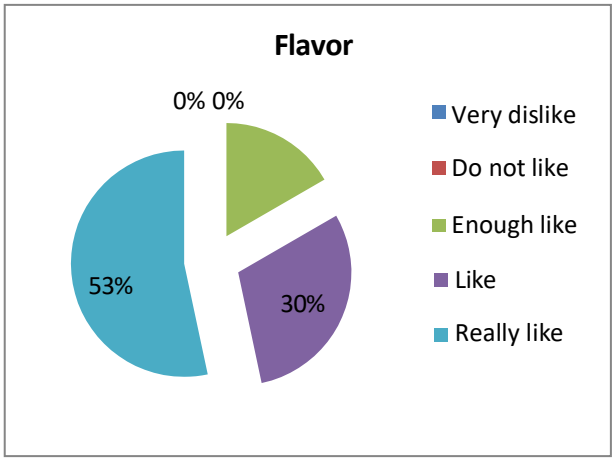

Figure 10. Hedonic Test Results for taste indicators

Based on the diagram above, in terms of taste indicators on nastar products with 80% substitution of kepok banana flour, 17% of the panelists quite liked it. As many as 30% of consumer panelists said they liked it. Then as many as 53% of consumer panelists said they really liked it. Therefore, it can be concluded that the consumer panelist's level of preference for nastar products with kepok banana flour substitution was 80% of the taste indicator, stated that they really liked and could be positively accepted by consumers.

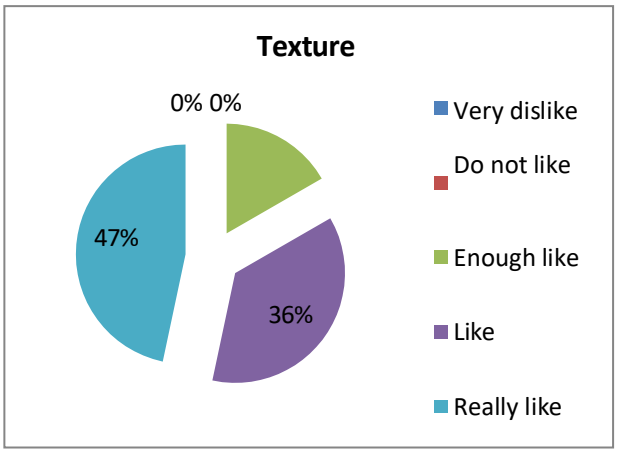

Figure 11. Hedonic Test Results for texture indicators

Based on the diagram above, in terms of texture indicators on nastar products with 80% substitution of kepok banana flour, 17% of the panelists quite liked it. As many as 36% of consumer panelists said they liked it. Then as many as 47% of consumer panelists said they really liked it. Therefore, it can be concluded that the level of preference of consumer panelists for nastar products with banana kepok flour substitution was 80% of the texture indicator, stated that they really liked and could be positively accepted by consumers.

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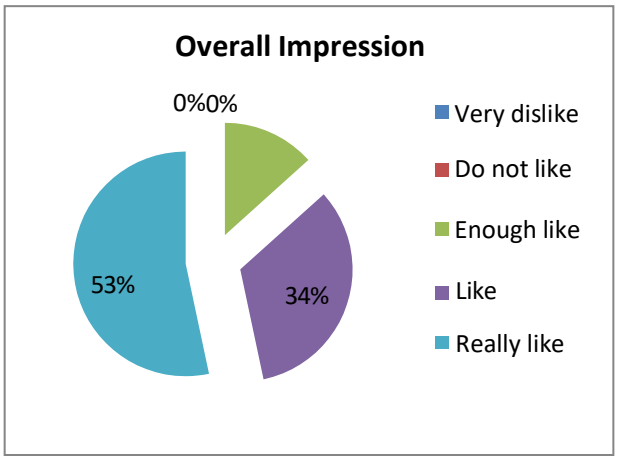

Figure 12. Hedonic test results for overall impression indicators.

Based on the diagram above, in terms of overall effect indicators on nastar products with 80% substitution of kepok banana flour, 13% of the panelists quite liked it. As many as 34% of consumer panelists said they liked it. Then as many as 53% of consumer panelists said they really liked it. Therefore, it can be concluded that the level of preference of consumer panelists for nastar products with banana kepok flour substitution is as much as 80% of the overall impression indicator, stating that they really like and can be positively accepted by consumers.

4. CONCLUSION

Based on study Which hasdone, it can be concluded that nastar product with kepok banana flour substitution is an innovation product from nastar cake which belongs to the type of molded cookies made from wheat flour which is then substituted with kepok banana flour. Nastar banana flour substitution kepok has characteristics in accordance with the indicators in the QDA test by. The 3 expert panelists, among them had an attractive appearance, had a strong banana flavor on the skin, had a sweet and sour taste from the pineapple jam filling, had a fairly strong banana aroma combined with the aroma of milk and butter, and had a firm texture but still melted (fragile).) when enjoyed. The results of the consumer hedonic test stated that the nastar product that substituted for kepok banana flour was very liked and positively received by consumers. During the research process, the authors obtained many findings that can be used as references to recommend the following: Making nastar by substituting kepok banana flour can be a reference for innovation in other pastry products. The innovation product of nastar substitute for kepok banana flour is a new product and can be commercialized into a typical souvenir business from Lampung Province with the largest commodity yields of kepok bananas in Indonesia. It is necessary to carry out a nutritional analysis on nastar products that are substituted for kepok banana flour to determine the nutritional content contained therein in order to complete the information needed by consumers.

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