Media Pendidikan Gizi dan Kuliner

Journal homepage: https://ejournal.upi.edu/index.php/Boga/index

Addition of Jackfruit in Making Choux Pastry

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ABSTRACTS

Jackfruit is a popular fruit in tropical areas, especially in Indonesia; in almost every region, this fruit can be found and has a high economic level. Jackfruit can provide nutrition as a source of minerals, vitamins,s, and calories. The fruit has a soft and ripe texture, but the seeds are also rich in minerals and vitamins. Jackfruit is one of the most widely consumed tropical fruits in Indonesia. This fruit has a savory and sweet taste, is aromatic, and is often used as a base ingredient for various foods, including pastries. The fruit has rough skin, sharp spines, sweet flesh, and a distinctive aroma. Jackfruit can be processed slowly or cooked into various foods and drinks. In this research, the addition of jackfruit aims to determine the effect of adding jackfruit on the taste and acceptance of Choux Paste by the public and to find out whether jackfruit can be used in making Choux Paste. Adding jackfruit can also provide additional nutritional benefits, such as fiber and vitamins from the jackfruit itself. However, adding jackfruit will affect the texture and consistency of Choux Paste, so you need to adjust the proportions and ratio of ingredients to produce good Choux Paste. This research was conducted to analyze the level of liking (taste, aroma, texture, and color) of Choux Paste through organoleptic tests. This research is a type of experimental research with three treatments for the addition of jackfruit, namely control (P1) 50%, (P2) 70%, and (P3) 100%. This research shows that the best formula for adding jackfruit in making Choux Paste, which both panelists prefer, is the addition of 70% jackfruit. The average results obtained from the aspects (color, aroma, taste, and texture) are a total score of 35.8 for the expert panelists with an average of 2.9, which is included in category VII. Meanwhile, the total score of the non-expert panelists was 37.8, with an average of 3.2, which was included in the like category.

ARTICLE INFO

Article History:
Received 01 Jul 2023
Revised 03 Aug 2023
Accepted 18 Sep 2023
Available online 01 Nov 2023

Keyword:
Additions,
Avocado Seed Flour,
Choux Paste

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1. INTRODUCTION

Tourism is a new style of industry that is capable of spurring rapid economic growth in terms of job opportunities, income, standard of living, and in activating other sectors in tourist receiving countries. Apart from that, tourism as a complex sector is able to revive other sectors including industries such as the handicraft industry, souvenir industry, accommodation and transportation.

The positive impact that is beneficial in the economic sector is that tourism activities bring in foreign exchange income for the country and create job opportunities, as well as the possibility for people in tourist destination areas to increase their income and living standards 2. Of course, the tourism industry and the hotel industry are closely related, because the hotel industry is an industry that plays an important role in the development of the tourism economy, especially in Indonesia. The hotel industry is of course supported by many departments in carrying out its operations, one department that has an important role is the Food and Beverage Department.

Wrongone of which is the Pastry Department, which is a section or division under the auspices of the main kitchen which is responsible for handling various types of sweet foods or desserts at various events in the hotel such as weddings, birthday parties, coffee breaks, breakfast, lunch, dinner, etc. Pastry or patisserie is knowledge in processing and serving food, especially in processing and serving various types of cakes. Choux Pastry is a type of pastry with the characteristics of being light but large in volume (Putri, 2019). Choux Pastry it self has a soft texture and is hollow on the inside so it can be filled with various flavors of vla. Making Choux Pastry is not easy because there are many things that must be considered, both in processing and the ingredients used. Choux Pastry or pastry soes is a type of cake originating from France. This dough is made from basic ingredients such as wheat flour, butter, water and eggs. Choux Pastry has unique properties, namely that it can expand well when baked, resulting in a light and hollow structure.

Therefore, this dough is often used to make various types of cakes and pastries, such as cream puffs, eclairs, profiteroles, and so on. Jackfruit (Artocarpus heterophyllus Lamk) is a fruit that is popular in tropical areas, especially in Indonesia, in almost every region this fruit can be found and has a high economic level. Jackfruit belongs to the Moraceae family, which is a large fruit with a sharp aroma and sweet taste. Jackfruit can provide nutrition, as a source of minerals, vitamins and calories. Just as the fruit has a soft and ripe texture, the seeds are also rich in minerals and vitamins (Widiarti, 2013). Jackfruit is one of the most widely consumed tropical fruits in Indonesia.

This fruit has a savory and sweet taste, is aromatic, and is often used as a base ingredient for various foods, including pastries. The fruit in question has rough skin, sharp spines, and sweet flesh and a distinctive aroma. Jackfruit can be processed slowly or cooked into various foods and drinks, such as juice, ice cream, or jackfruit dodol. Apart from that, jackfruit seeds can also be made after boiling or frying them. The addition of jackfruit to Choux Pastry products can provide benefits in terms of taste, aroma, sensation and visual appeal. The addition of jackfruit to making Choux Pastry can provide variations in taste and texture to the cake.

The addition of 4 jackfruits to making Choux Pastry can provide a unique taste and aroma to the dough. However, it should be noted that jackfruit contains a lot of water, so it must be ensured that the jackfruit is cooked until it releases oil in the pan. If the dough is not completely cooked, the Choux Pastry dough may not rise properly when baked. Apart from that, jackfruit also has a high fiber content, vitamin C and antioxidants which are good for

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

health. By adding jackfruit to Choux Pastry, the cake is not only tasty and delicious, but can also provide good health benefits.

In general, culinary experts recommend that additional ingredients added to Choux Pastry dough should be chosen carefully and should not be too much so as not to affect the texture and ability of the dough to rise properly when baked. Apart from that, additional ingredients must also be prepared and processed properly so as not to affect the quality of the dough.

This research aims to make optimal use of jackfruit, usually jackfruit is only used as an ice topping or as a base for ice cream. The author uses it as an additional ingredient for Choux Pastry which has a higher selling value. The author also optimizes the addition of jackfruit to making Choux Pastry and creates new innovations in Choux Pastry by using local ingredients that are rich in nutrients and have high market potential. By conducting this research, it is hoped that 5 can contribute to the development of pastry products that are healthy, innovative and have a high visual appeal to consumers.

2. LITERATURE REVIEW

2.1. Understanding Choux Paste

Choux paste in Indonesia is better known as eclairs (Ratnasari, 2014). Choux paste is shaped like cabbage which refers to the choux paste product called cream puff. Choux paste is defined as a cake that has a soft texture and is hollow in the middle and light, so it can be filled with various fillings.

Choux paste dough is made from adding wheat flour to a mixture of water cooked with margarine until it boils. After the mixture has cooled, add the chicken eggs into the mixture one by one while stirring until the mixture doesn't stick to the bowl, then mold it and put it in the oven. Eclair dough is different from other types of cake dough because the flour and eggs are cooked before baking (Marom et al., 2014).

2.2. Understanding Choux Filling

Choux fillingis a culinary term that refers to the filling or ingredients put into a ball-shaped pastry made from choux dough. Choux dough is usually used to make éclairs. Choux filling can consist of various ingredients such as cream, jam, chocolate, fruit, or a mixture of these ingredients.

2.3. Choux Pastry Theory

In Indonesia Choux Paste is better known as eclairs (Yuli, 2014). Choux Paste is shaped like a cabbage which refers to the Choux Paste product called cream puff. Choux Paste is defined as a cake that has a soft texture and is hollow in the middle. The resulting characteristics of Choux Paste dough are light, large volume with cavities on the inside, slightly thick skin and soft. Choux Paste is divided into 2 variations, namely éclair (elongated shape) and cream puff (round shape) (Afifah, I., & Sopiany, 2017).

2.4. Jackfruit

Jackfruit (Artocarpus heterophyllus) is a tropical fruit that grows in Southeast Asia, especially in Indonesia, Malaysia, Thailand and the Philippines. Jackfruit has spiny skin and yellow flesh with a strong and sweet aroma. Apart from its delicious taste, jackfruit is also rich in nutrients and health benefits. Jackfruit contains a variety of important nutrients, including vitamin C, vitamin B6, folate, potassium and fiber.

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

Vitamin C and vitamin B6 play a role in improving the immune system, while folate is important for cell development and DNA formation. Potassium is an important mineral that helps maintain body fluid balance, maintain muscle and nerve function, and regulate blood pressure.

Meanwhile, the fiber in jackfruit can help improve digestive health and reduce the risk of heart disease. Apart from that, jackfruit also contains antioxidant compounds such as flavonoids, tannins and saponins, which can help prevent cell damage caused by free radicals. The content of this compound can also help improve heart health and prevent the development of cancer. Apart from being eaten directly, jackfruit can also be processed into various kinds of food, such as dodol, jackfruit ice, and various types of cakes.

Jackfruit can also be processed into jackfruit flour, which can be used as an additional ingredient in food preparation to increase nutritional value and taste. Food ingredient interactions. The nutritional content of jackfruit has quite high fiber content. The following is the nutritional information contained in jackfruit: In 100 grams of jackfruit there are 94 calories in jackfruit (100 grams). Calorie details: 3% fat, 92% carbohydrates, 6% protein (Fatseicreit, 2023).

3. METHODS

This research was conducted to analyze the level of liking (taste, aroma, texture and color) of Choux Paste through organoleptic tests. Data analysis techniques are a series of methods and procedures used to process and analyze data. In this research, the author will use quantitative research methods. This research is a type of experimental research with 3 treatments for the addition of jackfruit, namely control (P1) 50%, (P2) 70% and (P3) 100%. The subjects of this research were 30 non-expert panelists and 3 expert panelists.

4. RESULTS AND DISCUSSION

Non-Expert Panelist Demographic Data Results. The following is a discussion of the non-expert panelist demographic data results based on age-based interpretation of experiment P1 see the Table 1.

Table 1. Age-based interpretation of experiment P1

Age	Count of WP1	Average of WP1	Average of TP1	Average of RP1	Average of AP1
30 – 39	1	3.00	3.00	3.00	3.00
40 – 49	1	3.00	3.00	3.00	3.00
50 – 60	1	3.00	3.00	3.00	3.00
Grand Total	**3**	**3.00**	**3.00**	**3.00**	**3.00**

From the data above, it can be said that in the P1 experiment, non-expert panelists in the age range 50-59 years preferred it more. It is suspected that in the first experiment the highest non-expert panelists aged 20-29 years consisting of 21 people liked the most based on all aspects and the lowest scores were from panelists aged 15-19 years. It is suspected that panelists aged 15-19 years did not like experiment P1 because the color was not good. The following is a discussion of the non-expert panelist demographic data results based on age-based interpretation of experiment P2 see the Table 2.

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

Table 2. Age-based interpretation of experiment P2

Age	Count of WP2	Average of WP2	Average of AP2	Average of TP2	Average of RP2
30 – 39	1	3.00	3.00	3.00	3.00
40 – 49	1	3.00	2.00	2.00	2.00
50 – 60	1	3.00	3.00	3.00	3.00
Grand Total	**3**	**3.00**	**2.67**	**2.67**	**2.67**

From the data above, it can be said that in the P2 experiment, non-expert panelists in the age range of 40-49 years were preferred. This is thought to be more suitable for them from all aspects, while the lowest score was obtained by the panel list aged 15-19 years. This is also thought to be because they prefer a sweeter taste and stronger aroma. The following is a discussion of the non-expert panelist demographic data results based on age-based interpretation of experiment P3 see the Table 3.

Table 3. Age-based interpretation of experiment P3

Age	Count of WP3	Average of WP3	Average of AP3	Average of TP3	Average of RP3
30 – 39	1	3.00	3.00	3.00	4.00
40 – 49	1	2.00	2.00	2.00	2.00
50 – 60	1	2.00	3.00	2.00	2.00
Grand Total	**3**	**2.33**	**2.67**	**2.33**	**2.67**

From the data above it can be said that in the P3 experiment the non-expert panelists in the age range 20-29 did not like the color and taste aspects of the P3 experiment, while in the 50-59 year age range the non-expert panelists liked all aspects of the P3 experiment.

3.1. Non-Expert Panelist Demographic Results Data

The following is a discussion of the demographic data results of non-expert panelists based on age-based interpretation of experiment P1 see the Tabel 4.

Table 4. Age-based interpretation of experiment P1

Age	Count of WP1	Average of WP1	Average of AP1	Average of TP1	Average of RP1
15 – 19	1	2.00	3.00	3.00	3.00
20 – 29	21	3.00	3.14	3.33	3.14
30 – 39	2	3.00	3.00	3.50	3.00
40 – 49	5	3.20	3.20	3.20	3.20
50 – 59	1	4.00	3.00	4.00	4.00
Grand Total	**30**	**3.03**	**3.13**	**3.33**	**3.17**

From the data above, it can be said that in the P1 experiment, non-expert panelists in the age range 50-59 years preferred it more. It is suspected that in the first experiment the highest non-expert panelists aged 20-29 years consisting of 21 people liked the most based on all

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

aspects and the lowest scores were from panelists aged 15-19 years. It is suspected that panelists aged 15-19 years did not like experiment P1 because the color was not good. The following is a discussion of the non-expert panelist demographic data results based on age-based interpretation of experiment P2 see the Table 5.

Table 5. Age-based interpretation of experiment P2

Age	Count of WP2	Average of WP2	Average of AP2	Average of TP2	Average of RP2
15 – 19	1	3.00	3.00	3.00	3.00
20 – 29	21	3.10	3.57	3.14	3.67
30 – 39	2	3.00	4.00	3.50	3.50
40 – 49	5	3.60	3.40	3.40	3.80
50 – 59	1	3.00	3.00	4.00	4.00
Grand Total	**30**	**3.17**	**3.53**	**3.23**	**3.67**

From the data above, it can be said that in the P2 experiment, non-expert panelists in the age range of 40-49 years were preferred. This is thought to be more suitable for them from all aspects, while the lowest score was obtained by the panel list aged 15-19 years. This is also thought to be because they prefer a sweeter taste and stronger aroma. The following is a discussion of the non-expert panelist demographic data results based on age-based interpretation of experiment P3 see the Table 6.

Table 6. Age-based interpretation of the P3 experiment

Age	Count of WP3	Average of WP3	Average of AP3	Average of TP3	Average of RP3
15 – 19	1	3.00	4.00	3.00	2.00
20 – 29	21	2.81	3.48	3.00	2.62
30 – 39	2	3.50	3.00	3.50	2.50
40 – 49	5	3.00	3.00	2.80	2.80
50 – 59	1	3.00	3.00	3.00	3.00
Grand Total	**30**	**3.90**	**3.37**	**3.00**	**2.63**

From dataabove it can be said that in the P3 experiment the non-expert panelists in the age range 20-29 did not like the color and taste aspects of the P3 experiment, while in the age range 50-59 years the non-expert panelists liked all aspects of the P3 experiment.

3.2. Discussion of Data Processing Results

The following are the conclusions from processing data from the product "Adding Jackfruit in Making Choux Paste" see the Table 7.

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

Table 7. Conclusions from Questionnaire Results for Products Adding Jackfruit in Making Choux Paste Expert Panelists

Test	Dimensions	Total Score	Mean	Median	Mode	Standard Deviation
P1	Color	3,0	3,0	3	3	0,00
	Aroma	3,0	3,0	3	3	0,00
	Texture	3,0	3,0	3	3	0,00
	Flavor	3,0	3,0	3	3	0,00
P2	Color	3,0	3,0	3	3	0,00
	Aroma	2,67	2,67	3	3	0,47
	Texture	2,67	2,67	3	3	0,47
	Flavor	2,67	2,67	3	3	0,47
P3	Color	2,33	2,33	2	2	0,47
	Aroma	2,67	2,67	3	3	0,47
	Texture	2,33	2,33	2	2	0,47
	Flavor	2,4	2,4	2	2	0,94
Total		**32,74**	**32,74**	**33**	**33**	**3,76**
Average		**2,7**	**2,7**	**3**	**3**	**0,31**

In making Choux Paste products with additional ingredients of jackfruit, conclusions were obtained in the form of questionnaire data for the panelists, totaling 3 expert panelists in the expert panelist category, using four aspects, including: color, aroma, texture and taste in 3 experimental formulations.

The total for the color aspect in the 3 experimental formulations got a score of 2.7 with the conclusion that they tend to like it, the total for the aroma aspect in the 3 experimental formulations got a score of 2.9 with the conclusion that they tend to like it, the total texture aspect in the 3 experimental formulations got a score of 3 with the conclusion that they tend to like it. , the total taste aspect in the 3 experimental formulations got a score of 3 with the conclusion that it tended to be liked.

Based on the results of the Choux Paste product questionnaire research with the addition of jackfruit, the overall results were obtained with a score of 32.7 which is in the Like category. with the lowest indicator for the questionnaire question being the Taste aspect (P3) with a score of 2.4 with the conclusion tending to be Dislike. Meanwhile, the highest score is in the aspects of Color, Aroma, Texture and Taste (P1) with a score of 3.0.

The research results showed that the expert panelists were interested in the experimental formulation of the Choux Paste product with the addition of jackfruit. Based on 3 experimental formulations in making Choux Paste which added jackfruit, it was concluded

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

that the panelists liked the product formulation P1, namely the addition of 50% jackfruit, seen from the 3 aspects between P1, P2, and P3 which are listed in the data table above.

In making Choux Paste products with the addition of jackfruit, conclusions were obtained in the form of questionnaire data for 30 panelists in the category of non-experts or consumers using 4 aspects, including: color, aroma, texture and taste in 3 experimental formulations, see the Table 8.

Table 8. Conclusion of Product Questionnaire Results Adding Jackfruit to Making Choux Paste Non-Expert Panelists

Test	Dimensions	Total Score	Mean	Median	Mode	Standard Deviation
P1	Color	3,1	3,1	3	3	0,63
	Aroma	3,1	3,1	3	3	0,34
	Texture	3,4	3,4	3	3	0,48
	Flavor	3,2	3,2	3	3	0,42
P2	Color	3,2	3,2	3	3	0,65
	Aroma	3,5	3,5	4	4	0,50
	Texture	3,2	3,2	3	3	0,37
	Flavor	3,2	3,2	4	4	0,46
P3	Color	2,9	2,9	3	3	0,57
	Aroma	3,3	3,3	3	3	0,46
	Texture	3,0	3,0	3	3	0,37
	Flavor	2,7	2,7	3	3	0,60
Total		**37,8**	**37,8**	**38**	**38**	**5,85**
Average		**3,2**	**3,2**	**3**	**3**	**0,48**

In making Choux Paste products with the addition of jackfruit, conclusions were obtained in the form of questionnaire data for 30 panelists in the category of non-experts or consumers using 4 aspects, including: color, aroma, texture and taste in 3 experimental formulations. The total for the color aspect in the 3 experimental formulations got a score of 3.2 with the conclusion tending to like it, the total for the aroma aspect in the 3 experimental formulations got a score of 3.2. with the conclusion tending to be Like. The total texture aspect in the 3 experimental formulations got a score of 3 with the conclusion that it tended to be liked. The total taste aspect in the 3 experimental formulations got a score of 3 with the conclusion that it tended to be liked.

Based on the results of the Choux Paste product questionnaire research with additional ingredients of jackfruit, a total result of 37.8 was obtained, overall which was in the Like category, with the lowest indicator for the questionnaire question being the Taste aspect (P3) with a score of 2.7 while the highest score was The highest is in the Aroma aspect (P2) with a score of 3.5. Based on the results of the preference test by distributing questionnaires that

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

the author has carried out, it shows that the panelists are interested in the experimental formulation of Choux Paste with the addition of jackfruit. Of the 3 experimental formulations in making Choux Paste which added jackfruit, the panelists liked the product formulation P2. Judging from the 3 aspects between P1, P2 and P3 listed in the table above.

4. CONCLUSION

Based on the results of research conducted by the author entitled "Adding Jackfruit in Making Choux Paste" the following results were obtained: 1) Based on the results of experiments carried out by the author, it can be concluded that jackfruit can be added to making choux paste from the aspects of color, aroma, texture , and taste. 2) Based on the results of research carried out by the author by distributing questionnaires to test preferences for experimental products, it can be concluded that the formulation preferred by both expert and non-expert panelists in terms of color, aroma, texture and taste is the P2 formula, because this formula is superior to in terms of color, aroma, texture and taste from other formulations. 3) The public's acceptance of this experimental Choux Paste has been very good, especially for the P2 formula. This can be seen from the good response from the public to this experimental Choux Paste considering that very few people use jackfruit in making cakes.

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