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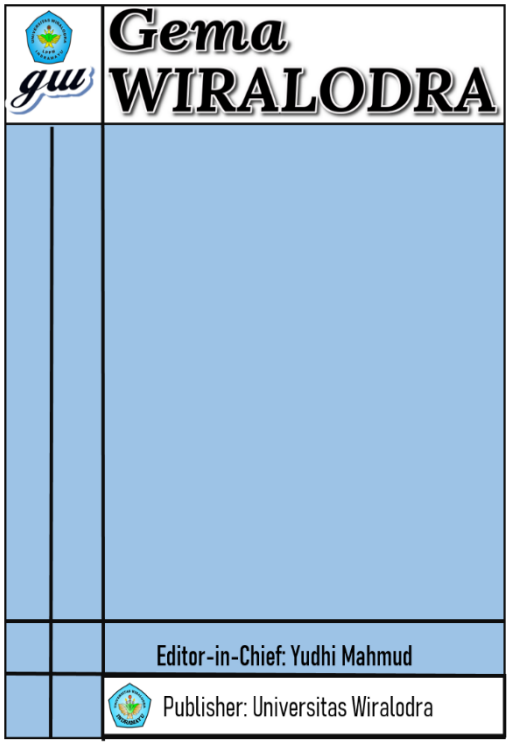

Analysis of the effect of pancake product substitution using durian seed flour on consumer acceptance: case study of generation Z in DKI Jakarta

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Analysis of the effect of pancake product substitution using durian seed flour on consumer acceptance: case study of generation Z in Dki Jakarta

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Abstract
Durian seeds possess numerous health benefits, and their high starch content makes them a potential substitute for wheat flour. However, despite their potential, durian seeds need to be more utilized and often become food waste. This study assesses the success and acceptability of pancakes made with durian seed flour substitution. The research employed an experimental approach comprising four treatments and one control group. The treatments involved 25%, 50%, 75%, and 100% substitution of wheat flour with durian seed flour, while the control group contained 0% substitution. The acceptance test involved 100 panelists from Generation Z in DKI Jakarta. The results indicated that pancakes with 25% durian seed flour substitution were the most favored by the panelists, with an 80.1% preference rate, and were well-received by the public. The organoleptic analysis revealed that pancakes with 25% substitution had a pleasant sweet taste (71%), a mild durian seed flour aroma (55.5%), a soft texture (71.8%), and an attractive color (70.5%). For future research, it is suggested to conduct trials using durian seed flour with other food products or different food waste materials with relatively high proportions. This would enable a more comprehensive exploration of the potential applications of durian seed flour in the food industry.
Keywords: Acceptability Test, Organoleptic Test, Durian Seed Flour, Pancakes, Generation Z

1. Introduction

Pancakes are a delightful treat with a sweet and savory taste, made from flour, eggs, margarine, and liquid ingredients like milk. The batter is stirred until well blended and then cooked on a pan using a roasting technique that produces a fragrant aroma of eggs, sugar, and milk (Heluq & Mundiastuti, 2018). Pancakes have gained popularity among Indonesian children and adults and are often chosen as a breakfast option. This can be observed from the numerous restaurants and cafes that serve pancakes all over Indonesia (Ali, 2022).

In addition to their delicious taste, pancakes also boast an attractive appearance due to the various toppings added, enhancing flavor and visual appeal. As a result, pancakes are relatively expensive, especially in middle to upper-class restaurants in the Jakarta area. Pancakes are typically made from wheat flour, contributing to the increased usage of wheat flour in society. According to wheat import data from the Central Statistics Agency for 2022, Indonesian wheat imports reached 9,827.20 tons in 2021, surpassing the total imports in 2019, which were 7,397.60 tons. This situation necessitates measures to reduce dependency on imports. An alternative approach involves utilizing durian seeds as a substitute for flour, considering Indonesia's high durian production and the underutilization of durian seeds. Durian seeds contain valuable nutrients, including amylose, carbohydrates, water, protein, fat, and energy (Sugeng et al., 2021), making them a potential alternative.

Research conducted by Hermiati & Firdausni (2016) indicates that the essential ingredient of pancakes, wheat flour, can be partially replaced, up to 50%, with other ingredients, such as red bean flour, to maintain softness and avoid stiffness (Heluq & Mundiastuti, 2018), given this information, interested in innovating by substituting wheat flour with durian seed flour in pancakes, thereby maximizing the utilization of durian seed waste.

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DKI Jakarta has a significant Generation Z population, totaling 2,292,094 million people, known for their willingness to try new things. Jakarta is the main focus of this research, as data (Kusnandar & Widowati, 2019) shows that it ranks first in consumerism, with a population keen on spending money on food and eager to try new innovative dishes.

According to data from the Central Statistics Agency (BPS) in 2021, five cities within Jakarta - East Jakarta, South Jakarta, West Jakarta, North Jakarta, and Central Jakarta - have the highest number of consumptive consumers. This makes DKI Jakarta an ideal location for conducting new product trials. For the success of this innovation, it is essential to consider consumer acceptance, as it significantly influences consumers' purchase decisions. Acceptance is closely related to an individual's attitude and interest in a product. The acceptance process is typically divided into five stages: Awareness, Interest, Evaluation, Trial, and Decision (Renata et al., 2017).

Previous research conducted between 2020-2022 by various researchers Harahap (2021), Utari (2020), Isnaini (2016), Ali (2022), Heluq & Mundiastuti (2018), Mardhiah et al. (2020) explored the use of durian seed flour, pumpkin flour, mocaf flour, avocado, red bean, and moringa leaves in various food additives for school children, yielding mixed results. The studies used various percentages of ingredient substitution, and the panelists' preferences for aroma, color, taste, and texture varied accordingly. As my research differs from these studies by exploring up to 100% substitution with a 0% control system and using a more significant number of treatments, the results cannot be directly applied to my current research.

Based on the background information, my research aims to test the success rate of pancake products using varying percentages of durian seed flour substitution, ranging from 0% to 100%. Additionally, this research serves as a graduation requirement for me and contributes to developing knowledge and experience in conducting research. For readers, this research provides valuable insights into using durian seed flour in making pancakes and encourages them to provide input and share knowledge with the community. Moreover, this study holds significant value for the campus, serving as valuable literature, additional library collections, and a reference for other students interested in similar research or utilizing durian seed flour.

2. Methods

The research method used in this study is experimental research, with the research object being pancakes. To gauge consumer acceptance, the study explores variations of durian seed flour substitution at 25%, 50%, 75%, and 100%, with a 0% control system. The independent variable is the amount of durian seed flour substitution, while the dependent variable is consumer acceptance measured in terms of taste, texture, color, and aroma. Control variables include standardizing equipment, weighing ingredients accurately, and maintaining consistent pancake-making conditions.

The research subjects are individuals from Generation Z living in the DKI Jakarta area. Data collection involved both primary and secondary data. Primary data was gathered through questionnaires distributed to 40 respondents in the pretest and 60 respondents in the posttest, totaling 100 Generation Z respondents from DKI Jakarta. Secondary data was obtained from relevant research literature, including books, journals, and articles.

The study's population includes Generation Z residing in the DKI Jakarta area, which amounts to approximately 2,297,094 residents. A sample of 100 respondents was selected using the Slovin formula and a purposive sampling technique.

The experimental procedure included using various ingredients such as wheat flour, milk, eggs, margarine, sugar, salt, baking powder, and durian seed flour. The tools utilized for the experiment encompassed scales, a balloon whisk, large and small bowls, a spatula, measuring cups, and a pancake pan.

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To summarize, this research follows an experimental approach to examine the acceptability of pancakes with different levels of durian seed flour substitution among Generation Z respondents in DKI Jakarta. Data was collected through questionnaires and secondary research, with a purposive sampling technique used to select 100 respondents. The experimental setup involved using specified ingredients and tools to create pancakes with varying proportions of durian seed flour.

3. Results and Discussion

Descriptive Test

Pretest

At the pretest stage, the research was conducted on 40 respondents at the beginning as a benchmark in this study whether it was accepted by the community or not. To see the results and explanations, can be seen as follows:

1) Flavor

Table 1

Taste Frequency 0%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Manis	3	7,5	7,5	7,5
	Kurang Manis	8	20,0	20,0	27,5
	Manis	24	60,0	60,0	87,5
	Sangat Manis	5	12,5	12,5	100,0
	Total	40	100,0	100,0	

Based on the descriptive test results presented in the table and graph, it is evident that sweetness is the highest assessment of pancake taste, with 0% durian seed flour substitution. A total of 24 panelists rated the taste as sweet, accounting for 60% of the respondents. Additionally, eight panelists found the taste less sweet, representing 20% of the respondents. Furthermore, five panelists perceived the taste as very sweet, constituting 12.5% of the respondents, while three assessed the taste of the pancakes as not sweet, making up 7.5%.

These findings show that pancakes prepared with a 0% control system tend to be perceived as sweet by most of the panelists.

Table 2

Taste Frequency 25%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Manis	3	7,5	7,5	7,5
	Kurang Manis	9	22,5	22,5	30,0
	Manis	25	62,5	62,5	92,5
	Sangat Manis	3	7,5	7,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of the taste of pancakes with 25% durian seed flour is the sweet taste of 25 panelists who rate it with a percentage scale of 62.5%. Followed by 9 panelists assessing less sweet with a percentage of 22.5%, 3 panelists assessing very sweet with a percentage of 7.5% and 3 panelists assessing the taste of pancakes is not sweet with 7.5%. This shows that pancakes with 25% durian seed flour substitution have a tendency to be sweet and there is almost no difference with the control system.

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Table 3
Taste Frequency 50%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Kurang Manis	6	15,0	15,0	15,0
	Manis	32	80,0	80,0	95,0
	Sangat Manis	2	5,0	5,0	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake taste with 50% durian seed flour is sweetness as many as 32 panelists who rate it with a percentage scale of 80%. Followed by 6 panelists assessing less sweet with a percentage of 15%, 2 panelists assessing very sweet with a percentage of 5% and 0 panelists assessing the taste of pancakes is not sweet with 0%. This shows that pancakes with 50% durian seed flour substitution have a sweeter taste and when compared to the previous assessment the taste of 50% pancakes has a sweeter taste.

Table 4
Taste Frequency 75%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Kurang Manis	4	10,0	10,0	10,0
	Manis	26	65,0	65,0	75,0
	Sangat Manis	10	25,0	25,0	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake taste with 75% durian seed flour is sweetness as many as 26 panelists who rate it with a percentage scale of 65%. Followed by 10 panelists assessing very sweet with a percentage of 25%, 4 panelists assessing less sweet with a percentage of 10% and 0 panelists assessing the taste of pancakes is not sweet with 0%. This shows that pancakes with 75% durian seed flour substitution have a sweeter taste and when compared to the previous assessment the taste of 75% pancakes has a sweeter taste.

Table 5
Taste Frequency 100%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Manis	1	2,5	2,5	2,5
	Kurang Manis	3	7,5	7,5	10,0
	Manis	19	47,5	47,5	57,5
	Sangat Manis	17	42,5	42,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of the taste of pancakes with 100% durian seed flour is the sweet taste of 19 panelists who rate it with a percentage scale of 47.5%. Followed by 17 panelists who rated it as very sweet with a percentage of 42.5%, 3 panelists rated it as less sweet with a percentage of 7.5% and 1 panelist rated the taste of pancakes as not sweet with a percentage of 2.5%. This shows that pancakes

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with 100% durian seed flour substitution have a sweeter taste and when compared to the previous assessment the taste of 75% pancakes has a sweeter taste.

The taste of pancakes with durian seed flour substitution can be said that the higher the percentage of durin seed flour substitution, the sweeter it will be, from the results of a survey of 40 panelists assessing that the more durian seed flour the more the sweetness will accentuate.

2) Aroma

Table 6

Aroma Frequency 0%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Beraroma Tepung Biji Durian	23	57,5	57,5	57,5
	Kurang Beraroma Tepung Biji Durian	6	15,0	15,0	72,5
	Beraroma Tepung Biji Durian	8	20,0	20,0	92,5
	Sangat Beraroma Tepung Biji Durian	3	7,5	7,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest rating of pancake aroma with 0% durian seed flour was not flavored with durian seed flour by 23 panelists who rated it with a percentage scale of 57.5%. Followed by 8 panelists assessing the aroma of durian seed flour with a percentage of 20%, 6 panelists assessing that it lacks aroma of durian seed flour with a percentage of 15% and 3 panelists assessing that it is very flavorful of durian seed flour with a percentage of 7.5%. This shows that pancakes with 0% durian seed flour substitution have an aroma that tends not to smell like durian seed flour.

Table 7

Aroma Frequency 25%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Beraroma Tepung Biji Durian	1	2,5	2,5	2,5
	Kurang Beraroma Tepung Biji Durian	23	57,5	57,5	60,0
	Beraroma Tepung Biji Durian	15	37,5	37,5	97,5
	Sangat Beraroma Tepung Biji Durian	1	2,5	2,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest rating of pancake aroma with 25% durian seed flour is less flavorful with durian seed flour as many as 23 panelists who rate it with a percentage scale of 57.5%. Followed by 15 panelists assessing the aroma of durian seed flour with a percentage of 37.5%, 1 panelist assessing that it has no aroma of durian seed flour with a percentage of 2.5% and 1 panelist assessing it is very flavorful of durian seed flour with a percentage of 2.5%. This shows that pancakes with 25% durian seed flour substitution already have a pungent aroma but not too flashy.

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Table 8
Aroma Frequency 50%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Kurang Beraroma Tepung Biji Durian	14	35,0	35,0	35,0
	Beraroma Tepung Biji Durian	24	60,0	60,0	95,0
	Sangat Beraroma Tepung Biji Durian	2	5,0	5,0	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the tables and graphs above show that the highest rating for the aroma of pancakes with 50% durian seed flour is the smell of durian seed flour by 24 panelists who rate it with a percentage scale of 60%. Followed by 14 panelists assessing that it lacks durian seed powder flavor with a percentage of 35%, 2 panelists assessing that it is very flavorful with durian seed flour with a percentage of 5% and 0 panelists assessing that it does not have durian seed powder aroma with a percentage of 0%. This shows that pancakes with 0% durian seed flour substitution have an aroma that the greater the percentage of flour substitution, the higher the aroma.

Table 9
Aroma Frequency 75%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Beraroma Tepuing Biji Durian	1	2,5	2,5	2,5
	Kurang Beraroma Tepung Biji Durian	1	2,5	2,5	5,0
	Beraroma Tepung Biji Durian	29	72,5	72,5	77,5
	Sangat Beraroma Tepung Biji Durian	9	22,5	22,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest rating of pancake aroma with 75% durian seed flour is that of durian seed flour as many as 29 panelists who rate it with a percentage scale of 72.5%. Followed by 9 panelists who rated it very flavorful with durian seed flour with a percentage of 22.5%, 1 panelist rated it as less flavorful with durian seed powder with a percentage of 2.5% and 1 panelist rated it not flavorful with durian seed powder with a percentage of 2.5%. This shows that pancakes with 75% durian seed flour substitution have a fairly strong aroma where many panelists really feel the aroma of durian seed flour.

Table 10
100% Aroma Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Beraroma Tepung Biji Durian	1	2,5	2,5	2,5
	Beraroma Tepung Biji Durian	12	30,0	30,0	32,5
	Sangat Beraroma Tepung Biji Durian	27	67,5	67,5	100,0
	Total	40	100,0	100,0	

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Descriptive test results based on the table and graph above show that the highest rating of pancake aroma with 100% durian seed flour is very flavorful with durian seed flour as many as 27 panelists who rate it with a percentage scale of 67.5%. Followed by 12 panelists assessing the aroma of durian seed flour with a percentage of 30%, 1 panelist assessing that it does not smell of durian seed flour with a percentage of 2.5% and 0 panelists assessing that it lacks aroma of durian seed flour with a percentage of 0%. This shows that pancakes with 100% durian seed flour substitution have a very strong aroma where almost all panelists really feel the aroma of durian seed flour on the pancakes.

The aroma of pancakes with durian seed flour substitution can be said that the higher the percentage of durian seed flour used, the more pronounced and stronger the aroma of pancakes with durian seed flour substitution. From the results of a survey of 40 panelists, it was assessed that the more durian seed flour the more it accentuates the aroma of durian seed flour.

3) Texture

Table 11

Texture Frequency 0%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Lembut	5	12,5	12,5	12,5
	Kurang Lembut	7	17,5	17,5	30,0
	Lembut	21	52,5	52,5	82,5
	Sangat Lembut	7	17,5	17,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake texture with 0% durian seed flour is soft as many as 21 panelists who rate it with a percentage scale of 52.5%. Followed by 7 panelists who considered it very soft with a percentage of 17.5%, 7 panelists considered it less soft with a percentage of 17.5% and 5 panelists considered it not soft with a percentage of 5%. This shows that pancakes with 0% durian seed flour substitution have a fairly soft texture.

Table 12

Texture Frequency 25%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Lembut	3	7,5	7,5	7,5
	Kurang Lembut	3	7,5	7,5	15,0
	Lembut	27	67,5	67,5	82,5
	Sangat Lembut	7	17,5	17,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake texture with 25% durian seed flour is soft as many as 27 panelists who rate it with a percentage scale of 67.5%. Followed by 7 panelists who considered it very soft with a percentage of 17.5%, 3 panelists considered it less soft with a percentage of 7.5% and 3 panelists considered it not soft with a percentage of 7.5%. This shows that pancakes with 25% durian seed flour substitution have a fairly soft texture and when compared to the control system it can be said that the texture of pancakes with 25% durian seed flour substitution is slightly softer.

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Table 13
Texture Frequency 50%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Kurang Lembut	6	15,0	15,0	15,0
	Lembut	31	77,5	77,5	92,5
	Sangat Lembut	3	7,5	7,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake texture with 50% durian seed flour is soft as many as 31 panelists who rate it with a percentage scale of 77.5%. Followed by 6 panelists who considered it less soft with a percentage of 15%, 3 panelists considered it very soft with a percentage of 7.5% and 0 panelists considered it not soft with a percentage of 0%. This shows that pancakes with 50% durian seed flour substitution have a fairly soft texture and when compared to the 25% treatment it can be said that the texture of pancakes with 50% durian seed flour substitution is softer.

Table 14
Texture Frequency 75%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Kurang Lembut	8	20,0	20,0	20,0
	Lembut	27	67,5	67,5	87,5
	Sangat Lembut	5	12,5	12,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake texture with 75% durian seed flour is soft as many as 27 panelists who rate it with a percentage scale of 67.5%. Followed by 8 panelists who considered it less soft with a percentage of 20%, 5 panelists considered it very soft with a percentage of 12.5% and 0 panelists considered it not soft with a percentage of 0%. This shows that pancakes with 75% durian seed flour substitution have a fairly soft texture and when compared to 50% texture it can be said that the texture of pancakes with 75% durian seed flour substitution has decreased in softness.

Table 15
Texture Frequency 100%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Lembut	3	7,5	7,5	7,5
	Kurang Lembut	10	25,0	25,0	32,5
	Lembut	23	57,5	57,5	90,0
	Sangat Lembut	4	10,0	10,0	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake texture with 100% durian seed flour is soft as many as 23 panelists who rate it with a percentage scale of 57.5%. Followed by 10 panelists who considered it less soft with a percentage of 25%, 4 panelists considered it very soft with a percentage of 10% and 3 panelists considered it not soft with a percentage of 7.5%. This shows that pancakes with 100% durian seed flour substitution have a soft texture and when compared to 75% texture it can be said that the texture of pancakes with 100% durian seed flour substitution has decreased softness.

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The texture of pancakes with durian seed flour substitution can be said that durian seed flour if used in moderation can add tenderness to the texture, but if used excessively/too much it will experience a decrease in softness which will make the product even worse.

4) Color

Table 16

Color Frequency 0%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Bewarna Menarik	7	17,5	17,5	17,5
	Kurang Bewarna Menarik	8	20,0	20,0	37,5
	Bewarna Menarik	18	45,0	45,0	82,5
	Sangat Bewarna Menarik	7	17,5	17,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake color with 0% durian seed flour is an attractive color as many as 18 panelists who rate it with a percentage scale of 45%. Followed by 8 panelists who considered colorless attractive with a percentage of 20%, 7 panelists considered very colorful with a percentage of 17.5% and 7 panelists considered colorless attractive with a percentage of 17.5%. This shows that pancakes with 0% durian seed flour substitution have quite attractive colors.

Table 17

Color Frequency 25%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Bewarna Menarik	3	7,5	7,5	7,5
	Kurang Bewarna Menarik	5	12,5	12,5	20,0
	Bewarna Menarik	28	70,0	70,0	90,0
	Sangat Bewarna Menarik	4	10,0	10,0	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake color with 25% durian seed flour is an attractive color as many as 28 panelists who rate it with a percentage scale of 70%. Followed by 5 panelists who considered colorless attractive with a percentage of 12.5%, 4 panelists considered very colorful with a percentage of 10% and 3 panelists considered colorless attractive with a percentage of 7.5%. This shows that pancakes with 25% durian seed flour substitution have quite attractive colors and when compared with the control system have a slightly more attractive color level.

Table 18

Color Frequency 50%

		Frequency	Percent	Valid Percent	Percent
Valid	Kurang Bewarna Menarik	7	17,5	17,5	17,5
	Bewarna Menarik	26	65,0	65,0	82,5
	Sangat Bewarna Menarik	7	17,5	17,5	100,0
	Total	40	100,0	100,0	

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Descriptive test results based on the table and graph above show that the highest assessment of pancake color with 50% durian seed flour is an attractive color as many as 26 panelists who rate it with a percentage scale of 65%. Followed by 7 panelists who considered colorless attractive with a percentage of 17.5%, 7 panelists considered very colorful with a percentage of 17.5% and 0 panelists considered colorless attractive with a percentage of 0%. This shows that pancakes with 50% durian seed flour substitution have quite an attractive color and when compared with 25% color, 50% substitution has a slightly more attractive color level.

Table 19
Color Frequency 75%

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Bewarna Menarik	1	2,5	2,5	2,5
	Kurang Bewarna Menarik	4	10,0	10,0	12,5
	Bewarna Menarik	25	62,5	62,5	75,0
	Sangat Bewarna Menarik	10	25,0	25,0	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake color with 75% durian seed flour is an attractive color as many as 25 panelists who rate it with a percentage scale of 62.5%. Followed by 10 panelists who considered it very colorful with a percentage of 25%, 4 panelists considered it less colorful with a percentage of 10% and 1 panelist considered it colorless with a percentage of 2.5%. This shows that pancakes with 75% durian seed flour substitution have quite attractive colors and when compared with the color of 50% durian seed flour substitution, 75% color has a slightly more attractive color level.

Table 20
100% Color Frequency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tidak Bewarna Menarik	1	2,5	2,5	2,5
	Kurang Bewarna Menarik	9	22,5	22,5	25,0
	Bewarna Menarik	13	32,5	32,5	57,5
	Sangat Bewarna Menarik	17	42,5	42,5	100,0
	Total	40	100,0	100,0	

Descriptive test results based on the table and graph above show that the highest assessment of pancake color with 100% durian seed flour is very colorful and attractive as many as 17 panelists who rate it with a percentage scale of 42.5%. Followed by 13 panelists who rated it as attractive in color with a percentage of 32.5%, 9 panelists considered it less colorful with a percentage of 22.5% and 1 panelist considered it not attractive in color with a percentage of 2.5%. This shows that pancakes with 100% durian seed flour substitution have attractive colors and when compared with the color of 75% durian seed flour substitution, the color level of 100% durian seed flour substitution is more attractive.

The color of the pancakes with durian seed flour substitution can be said that the durian seed flour can produce a more attractive color than the control system. The higher the durian seed flour content used, the more attractive the color will stand out.

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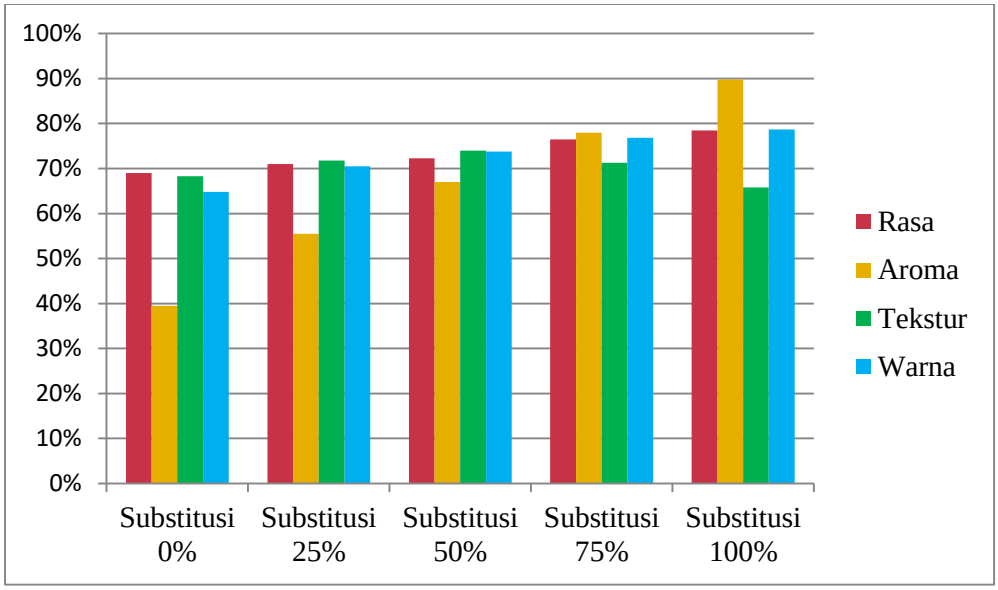
Orginal Article

Posttest

At the post test stage, it was carried out on 100 respondents as a whole to assess the pancake product as a substitute for durian seed flour on consumer acceptance.

Figure 1

Graph of Average Results of All Pancake Product Descriptive Tests

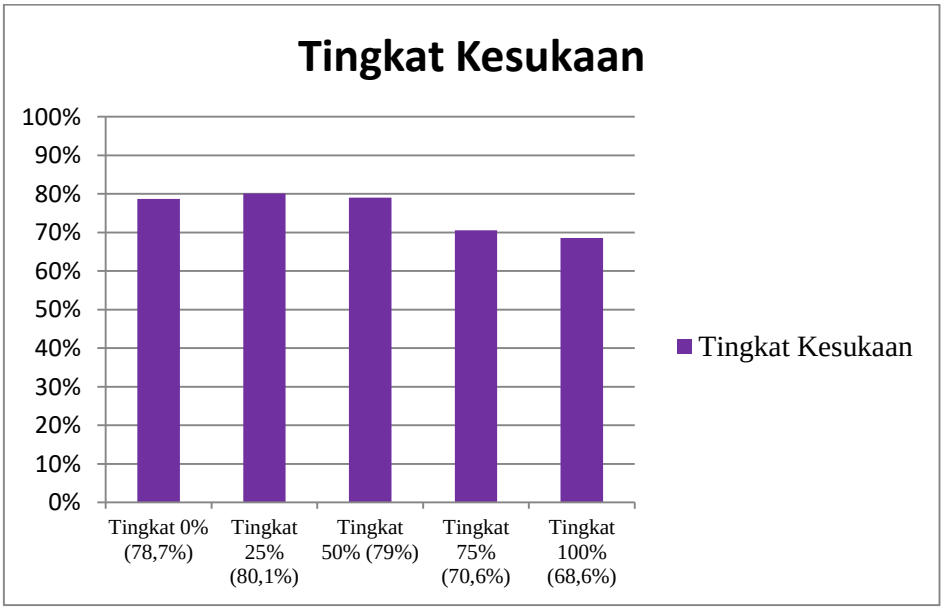


Based on the overall average results, it can be seen in Figure 4.25 which shows a clear comparison of taste, aroma, texture, and color in pancake products with durian seed flour substitution 0% 25% 50% 75% and 100%.

Hedonic Test

Figure 2

Graph of Average Results of All Pancake Product Hedonic Tests



Based on the results of the hedonic test, the highest level of preference of the panelists was on pancake products with 25% durian seed flour substitution with a percentage of 80.1%

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which means like. The second level of panelist preference was on pancake products with 50% durian seed flour substitution with a percentage of 79% which means like. The third place on the panelists' preference level was on pancake products with 0% durian seed flour substitution with a percentage of 78.7% which means they like it. The fourth place on the panelists' preference level was on pancake products with a durian seed flour substitution of 75% with a percentage of 70.6% which means they like it a bit. On the fifth rank, the panelists' preference level focused on pancake products with 100% durian seed flour substitution with a percentage of 68.6%, which means they like it quite a bit.

Anova test

1) Flavor

Table 21

Descriptive Anova Test of Substitution of Durian Seed Flour on Taste

		Sum of Squares	df	Mean Square	F	Sig.
Rasa 25%	Between Groups	22,586	3	7,529	21,999	<,001
	Within Groups	32,854	96	,342		
	Total	55,440	99			
Rasa 50%	Between Groups	5,059	3	1,686	7,810	<,001
	Within Groups	20,731	96	,216		
	Total	25,790	99			
Rasa 75%	Between Groups	12,567	3	4,189	12,159	<,001
	Within Groups	33,073	96	,345		
	Total	45,640	99			
Rasa 100%	Between Groups	8,248	3	2,749	4,731	,004
	Within Groups	55,792	96	,581		
	Total	64,040	99			

Observations in Table 21 on "taste" for each sample tested in the ANOVA table and it can be seen that there are differences in the product 25% 50% 75% and 100% in terms of taste against the control sample. Because the calculation results are less than 0.05, it can be concluded that H_O is rejected and H_1-H_4 is accepted.

2) Aroma

Table 22

Descriptive Anova Test of Substitution of Durian Seed Flour on Aroma

		Sum of Squares	df	Mean Square	F	Sig.
Aroma 25%	Between Groups	25,305	3	8,435	45,352	<,001
	Within Groups	17,855	96	,186		
	Total	43,160	99			
Aroma 50%	Between Groups		3	1,996	7,434	<,001
	Within Groups	25,773	96	,268		
	Total	31,760	99			
Aroma 75%	Between Groups	10,566	3	3,522	11,273	<,001
	Within Groups	29,994	96	,312		
	Total	40,560	99			
Aroma 100%	Between Groups	7,629	3	2,543	6,677	<,001
	Within Groups	36,561	96	,381		
	Total	44,190	99			

Observations in Table 22 on "aroma" for each sample tested in the ANOVA table and it can be seen that there are differences in the product 25% 50% 75% and 100% in terms of aroma against the control sample. Because the calculation results are less than 0.05, it can be concluded that H_O is rejected and H_1-H_4 is accepted.

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3) Texture

Table 23

Descriptive Anova Test of Substitution of Durian Seed Flour on Texture

		Sum of Squares	df	Mean Square	F	Sig.
Tekstur 25%	Between Groups	33,434	3	11,145	48,908	<,001
	Within Groups	21,876	96	,228		
	Total	55,310	99			
Tekstur 50%	Between Groups	4,216	3	1,405	6,874	<,001
	Within Groups	19,624	96	,204		
	Total	23,840	99			
Tekstur 75%	Between Groups	,718	3	,239	,574	,634
	Within Groups	40,032	96	,417		
	Total	40,750	99			
Tekstur 100%	Between Groups	6,054	3	2,018	3,163	,028
	Within Groups	61,256	96	,638		
	Total	67,310	99			

Observations in Table 23 on "Texture" for each sample tested in the ANOVA table and it can be seen that there is a difference in the product of 25% 50% in terms of texture against the control sample. Because the calculation results are less than 0.05, it can be concluded that H_O is rejected and H_1-H_2 is accepted. In the 75% 100% product it is seen that there is no significant difference because it has a calculation of more than 0.05, it can be concluded that H_O is accepted and H_3-H_4 is rejected.

4) Color

Table 24

Descriptive Anova Test of Durian Seed Flour Substitution on Color

		Sum of Squares	df	Mean Square	F	Sig.
Warna 25%	Between Groups	41,140	3	13,713	55,737	<,001
	Within Groups	23,620	96	,246		
	Total	64,760	99			
Warna 50%	Between Groups	6,461	3	2,154	7,308	<,001
	Within Groups	28,289	96	,295		
	Total	34,750	99			
Warna 75%	Between Groups	14,206	3	4,735	12,522	<,001
	Within Groups	36,304	96	,378		
	Total	50,510	99			
Warna 100%	Between Groups	22,799	3	7,600	13,768	<,001
	Within Groups	52,991	96	,552		
	Total	75,790	99			

Observations in Table 24 on "color" for each sample tested in the ANOVA table and it can be seen that there are differences in the product 25% 50% 75% and 100% in terms of color against the control sample. Because the calculation results are less than 0.05, it can be concluded that H_O is rejected and H_1-H_4 is accepted.

After seeing the results of the entire sample, answers can be obtained from the differentiation test that has been made. Then the data can be obtained from statistical processing and the results are obtained. In terms of taste, the first ranking for sweet is 100% taste, followed by a second rating of 75%, a third rating of 50%, a fourth rating of 25% and the last 0% as a control system.

From the results based on aroma, the first place was occupied by pancakes with 0% substitution of durian seed flour which was the least flavorful, then followed by the second rank, namely 25% aroma which was less flavorful with durian seed flour, third place with 50% substitution, fourth rank 75% with durian seed flour substitution and finally 100% which was

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very flavorful. From the results of the analysis, many respondents did not like the aroma of durian seed flour.

Then from the texture of the first rank, soft is 50% substitution, followed by 25% as the second rank, then 75% as the third rank, 0% as the fourth rank and finally 100% as the fifth rank in terms of texture. Substituting 100% durian seed flour will make the product experience a decrease in softness, so there must be additional handling in terms of ingredients that can make it softer.

Furthermore, in terms of color, the more levels of durian seed flour eaten, the more attractive the color will be, where the more levels, the browner it will be. Ranked first in terms of color, namely pancakes with durian seed flour substitution with 100%, followed by the second rank is 75%, the third is 50%, the fourth is 25% and the last is 0%.

In the hedonic test results, panelists preferred pancakes with 25% durian seed flour substitution, in second place were pancakes with 50% durian seed flour substitution, and in third place were pancakes with 0% durian seed flour substitution. The three categories are considered liked and acceptable by the public, but substitution for durian seed flour 75% and 100% are only considered somewhat liked which cannot be accepted because the public does not really like the pancakes.

*Pancakes*with the content of durian seed flour which increases, it will cause a very brown color so that from the research conducted, the pan baking technique is needed here. The higher the percentage of durian seed flour, the smaller the fire used for roasting. And for pancakes with 50%, 75% and 100% durian seed flour substitution, they are baked in hot Teflon but with the fire turned off, until the dough bubbles a little, then the fire is turned on again on low heat so that the pancakes are cooked with a color that is not too brown.

4. Conclusion

Based on the results of the trials conducted with 100 panelists, the following conclusions can be drawn regarding the utilization of durian seed flour in making pancakes: (1) durian seed flour can indeed be used as a substitute for wheat flour in making pancakes and is generally accepted by the community. The preference value for substitutions of 25% and 50% durian seed flour was high, as the panelists liked them. However, substitutions of 75% and 100% were not well-accepted by the public due to their texture being less soft compared to the previous substitutions, and the aroma was less appealing. The table indicates that the higher the percentage of durian seed flour, the stronger its flavor becomes. (2) The results of the descriptive test revealed significant differences/influences in terms of taste, aroma, and texture between the 0% control and 25% and 50% durian seed flour substitutions. However, there was no significant difference/influence in terms of texture for the 75% and 100% substitutions.

Based on these findings, several suggestions can be made to enhance the utilization of durian seed flour in pancakes: (1) to improve the aroma and taste, it is recommended to add essence or other flavoring agents to the pancake batter. This can create a more diverse and appealing flavor profile that will be liked by a wider range of people. (2) Adding additional toppings with pleasant aromas and flavors can help balance out the aroma of durian seeds and make the pancakes more enjoyable for consumers. (3) For pancakes with a substitution percentage of 75% and 100% durian seed flour, which have a denser texture, the researchers can add liquids such as milk to the batter to achieve a softer texture. (4) Researchers should explore the potential of durian seed flour in other food products as well, to make the most of its versatility and benefits in various culinary applications. (5) Additionally, utilizing durian seed flour in recipes that help reduce food waste can be a valuable approach. By using ingredients that are typically wasted in large quantities, this research can contribute to minimizing food wastage and promoting sustainability in the food industry.

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