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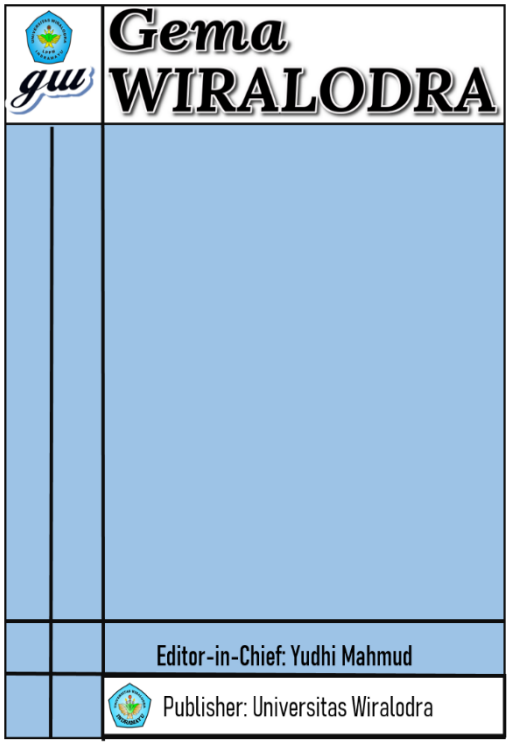

Analysis of consumer acceptability of green bean flour as a substitution for wheat flour in baked sponge cake

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Orginal Article

Analysis of consumer acceptability of green bean flour as a substitution for wheat flour in baked sponge cake

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Abstract
Green Beans are one commodity the nuts spread in Indonesia can replace material food that can become Lots of food. Plus, peanuts green can make as flour, peanut green can give Lots of benefits. Using peanut green flour on manufactured cake dry also helps reduce high gluten content, which is Good for the body. Another benefit can support the diversification of products of enough food tall from the import process. With existing flour, peanut green can replace flour. Study This use study experiment uses a purposeful hedonic test to measure the level of liking and power by accepting the public with substitute flour wheat use flour peanut green to manufacture cake sponge roast. This research uses five samples of cake sponge roast with flour peanut green and one sample of cake sponge roast *original* as sample C has almost the same value comparison. Power tests accept consumers, carried out at SMK N 4 Jambi City with 100 Panelists who are students majoring in catering/patisserie. Analysis results show that the fifth sample owns relatively the same color. However, in the hedonic test, sample A gets a treatment of 3.02 %. Sample C has the best aroma compared to sample other with test results of 3.25%, for aspect texture obtained by sample B with a value of 3.12%, and for taste obtained by sample D with a value of 3.46 %. The fifth average result sample has almost the same value, ± 3.00%. Which is where all samples can be accepted and liked by society.
Keywords: Acceptability Test, Organoleptic Test, Flour Green Beans, Sponge Cake Bake.

1. Introduction

Indonesia is an archipelagic country with biologically diverse animals and fertile land, with good potential for producing food. Among products scattered food throughout Indonesia alone, one is sufficient often found in Indonesia is nuts (Rachma, 2019). Nuts are a source of protein, fat, and carbohydrates. Types of nuts In Indonesia itself, 12 types of nuts are ground peanuts, peanuts soybeans, peanuts greens, nuts red, toro beans, koro beans, cashews, peanuts pods/chickpeas, almonds, pecans, pistachios, peanuts macadamia (Kasno & Harnomo, 2014).

The Latin name peanut green is *Vigna Radiata*. Plant peanut green is one plant old year short, i.e., only (60 days), and can harvest times end on the 80th day after planted (Mustakim, 2016). As a source of food protein, vegetables are tall, nuts, and green. This own Lots benefit in life every day. One hundred grams of peanut green contains 345 calories, 22 grams of protein, 1.20 grams of fat, and 62.9 grams of carbohydrates (Mahmud, 2009). Peanut green this claimed to contain nutrition, among others: Manganese, Magnesium, Niacin, and Vitamins (B1, A & E). Benefits of green nuts are that they can relieve constipation and improve Spirit life. It can be used to heal hepatitis, sprains, beriberi, fever, breath, head Dizzy or vertigo, recover health, less blood, heart flutter as well as dizziness (Atman, 2007).

Peanut green is a material proper meal that gets attention and is not bad for growing up, especially as an alternative variant material meal. The average productivity of peanut green in Indonesia in 2013 was 11.24 quintals/hectare. In 2014, it was 11.76 quintals/hectare, and in 2015 it was 11.83 quintals/hectare (BPS, 2015). This shows a remarkable ability to create _ peanut green as alternative food in Indonesia and the world (Rachma, 2019).

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As it goes time, food peanut green Alone Lots We meet with various types processed, which where If seen development peanut green as processed food Lots We meet as vegetable sprouts, bean sprouts, chips, porridge peanut green, processed become a drink peanut green, food baby and also can process become material making cake, delicate cake wet and cake dry (Rachma, 2019).

Viewed from many processed peanut green Alone as making cake, no escape from the process of making flour from peanut green. Pealing flour peanut green Alone makes diverse traditional and international food more reasonable and healthy (Rachma, 2019). Pastry Making is not escaped leave flour wheat as the material central in manufacturing cake, and there is dependence on materials. This is one influencing factor that exists to enhance the amount import flour wheat in Indonesia. Use flour Excessive flour can also have no impact good for the body if and on consumed flour excessively without being limited (Muchtadi, 2010).

Muchtadi (2010) explains that at 100 grams, flour wheat has a protein content of 8% to 14%. The content index glycemic index in flour is also tall enough, i.e., 70, which is where it can increase blood sugar levels that do not suitable for sufferers of Diabetes Mellitus. Reported from data from the Central Bureau of Statistics explains that exists a number increase in the Import process of Incoming wheat to Indonesia, with a total amount of 9,961.10 tons from 2018 to 2021. The surge resulted Because of the existing enhancement production of noodles instant using flour (flour wheat) to fulfill the need for production.

Sponge cake is one of food's favorite lights in Indonesian society, filling in time spare with snacking food lights, which helps supply energy and temporarily relieve hunger (Aris, 2013). Lots of food light usually consumed is dry pastries, bread, cake sponge, and chips. Sponge Roast Alone is one dry cake that people like made from base flour, flour, sugar, eggs, and vanilla. This has a sweet taste as well soft texture. Because processed with roasting (Flo, 2003).

With existing encouragement, new flour can be replaced with peanut green flour. The Author wants to make flour changes; wheat becomes flour peanut green on manufacture cake sponge which Roast? Own hope big so people can like and consume cake sponge roast use flour peanut green.

2. Research Methods

This study uses the experimental method, with an object study cake sponge roast using 100% peanut green flour to power accept consumers. The independent variable is peanut flour green as a material substitute, while the related variable is consumer acceptance as measured in terms of taste, texture, color, and aroma. Control variables include controlling the equipment, weighing the ingredients, and making pancakes under the same conditions. The research subject writer chose SMK Negeri 4 Jambi City on Jalan Jenderal Urip Sumoharjo No.31 Sungai Putri, Selamat, Jambi City, Jambi 36124. With criteria panelists aged 16-20 years, domiciled in Jambi, student female students majoring in catering and pastry (culinary) according to with provision school. This research was conducted at SMK 4 because there is an appropriate major to study this, which is where the students and female students his Already trained in related matters with culinary (food), so they will be more sensitive in filling in the questionnaire. Amount panelists in this study are 100 students sensitive to the culinary/pastry department to food.

3. Result

There are five samples used as a trial Power accept consumer use flour peanut green and one sample comparison (original sample cake sponge roast), which in each sample given labels:

a) Sample A (cake sponge roast with three items egg chicken, 70 grams of flour peanut greens, 50 grams of flour rice, oranges lime, sugar and butter liquid, oil coconut, and condensed milk sweet)

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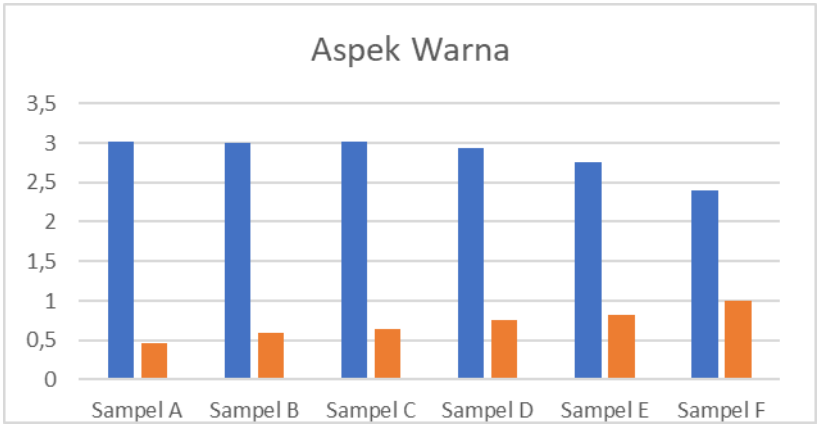
b) Sample B (cake sponge roast with two items of egg, 100gram flour peanut greens, sp, sugar, and butter liquid)
c) Sample C (cake sponge roast with three items egg, 150 grams flour, peanut green, BP, powdered milk, and butter liquid)
d) Sample D (cake sponge grilled with four items egg, 200gram flour, peanut green, condensed milk sweet, sp, margarine, oil, vegetables, and sugar)
e) Sample E (cake sponge roast with five items egg chicken, 200gram flour peanut green, granulated sugar, sp, bp, white milk powder, and butter liquid)
f) Sample F (cake sponge original roast, with 5 grains egg, 200 grams flour, butter, sp, and sugar).

Hedonic Test

From the results of the hedonic test in research, get results as follows.

Figure 1

Color Aspect



Tabel 1

Hedonic Test Mean Value

Hedonic Test Mean Value						
Color	Sample A	B sample	C sample	Sample D	Sample E	F sample
	3.02 ± 0.47	3.00 ± 0.60	3.01 ± 0.64	2.93 ± 0.76	2.75 ± 0.82	2.39 ± 1.00

On the aspect color, show that sample A becomes a sample with a preferred color, with a mark of 3.02%, followed by sample C and sample B. However, the fifth sample owns almost the value same in the category of love the color his. Sample F (sample comparator) has a low value of 2.39% because there is no own characteristic special, and is the same as cake sponge roast. The resulting colors right from samples A, B, C, D, and E alone produced by peanuts green gives the color green rather interesting old because we got from existing skin seed peanut colored green sol samples the own color green peanut green and no affected by the material other.

Fragrance Aspect

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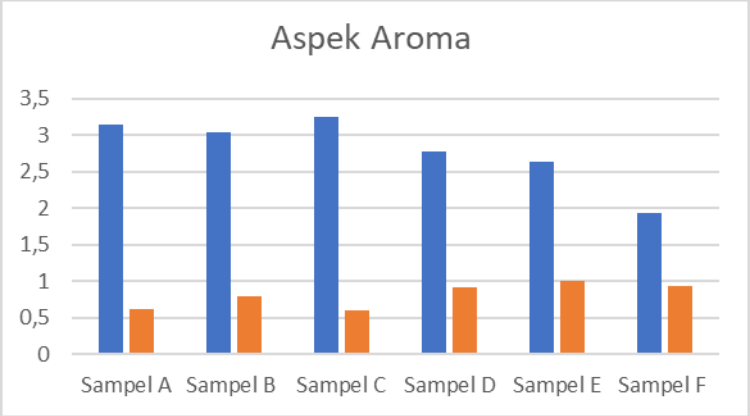

Table 2
Hedonic Test Mean Value Fragrance Aspect

	Hedonic Test Mean Value					
Aroma	Sample A	B sample	C sample	Sample D	Sample E	F sample
	3.15 ± 0.62	3.05 ± 0.80	3.25 ± 0.60	2.78 ± 0.92	2.63 ± 1.00	1.94 ± 0.93

The scent aspect shows that sample C has the best aroma, with a value of 3.25%, followed by samples A and B. For the aroma, the fifth sample uses relatively the same material with existing alteration weight on each composition. The obtainable scents from the fifth sample are also available from flour peanut green with characteristic typical seed peanut green, favored by consumers and society. Other ingredients in making cake sponge roast No use of material deodorizer food like vanilla because want to retain the nutty aroma of green as a natural fragrance from cake sponge roast.

Aspect Texture Aspect

Figure 3
Texture Aspect

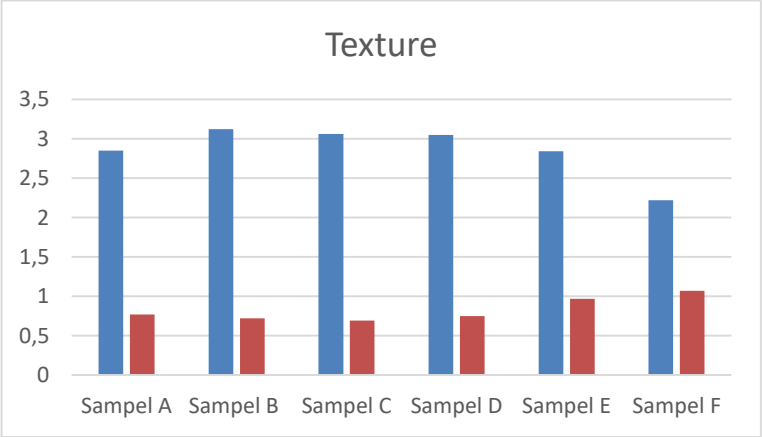

Table 3
Hedonic Test Mean Value Texture Aspect

	Hedonic Test Mean Value					
texture	Sample A	B sample	C sample	Sample D	Sample E	F sample
	2.85 ± 0.77	3.12 ± 0.72	3.06 ± 0.69	3.05 ± 0.75	2.84 ± 0.97	2.22 ± 1.07

On the aspect texture, it shows that sample B has a value of 3.12% which is where own category liked by the panelists, followed by sample C and sample D. For texture himself on the fifth sample own different texture, sample B has soft texture and crunchy, the same like sample C and sample D. This can happen Because exists addition a different egg on each one sample, and

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presence addition sp or material food used as softener on manufacture cake sponge roast with different weight so that results cake sponge roast own different texture.

Taste Aspect

Figure 4

Taste Aspect

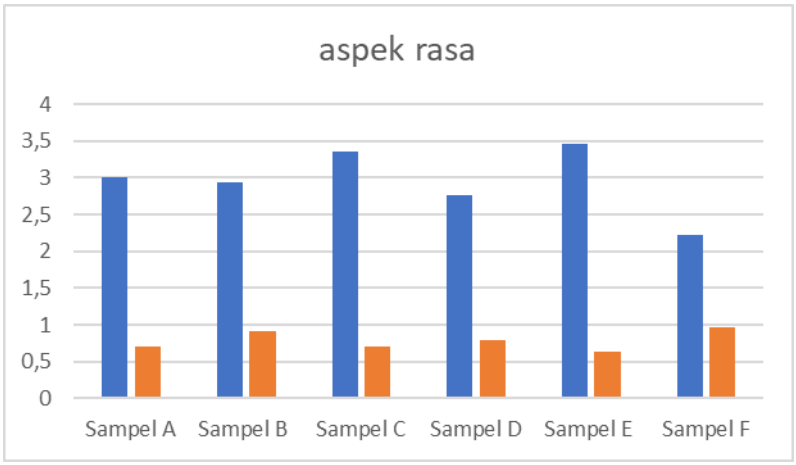

Table 4

Hedonic Test Mean Value Taste Aspect

	Hedonic Test Mean Value					
Flavor	Sample A	B sample	C sample	Sample D	Sample E	F sample
	3.01 ± 0.70	2.93 ± 0.92	3.35 ± 0.71	2.77 ± 0.80	3.46 ± 0.64	2.23 ± 0.96

The taste aspect shows that Sample E has a value of 3.46%, which the panelists liked, followed by Sample C and Sample A, which have the preferred taste. For the sample, the taste factor is based on adding sugar and milk, which gives a sweet taste to the cake sponge grill. Sample E uses condensed milk, sweet, and margarine to create a cake sponge roast with a sweet and savory flavor that the panelists and the public like.

Anova Test (Test F)

Anova test is a test to know the influence of the hypothesis that has been made before. Anova test results in research this will be based on SPSS calculations which will be shown below this:

H_0 : None influence of taste, texture, aroma, and color on the cake sponge roast with substitution flour peanut green 100% against Power accept consumer.

H_1 : Yes influence of taste, texture, aroma, and color on the cake sponge roast with substitution flour peanut green 100% against Power accept consumer.

Color Aspect

Table 5

Anova Test

ANOVA

Aspek Warna

	Sum of Squares	Df	Mean Square	F Hitung	F tabel	Sig.
Between Groups	30,500	5	6,100	11,183	2,229	0,000
Within Groups	324,000	594	0,545			
Total	354,500	599				

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The data that has calculated explained that $F_{count} > F_{table}$, 11.183 > 2.229, then testing in aspect color, with the Anova test method one way with α 5% (0.05) stated that there is a difference color between each sample. So that H_0 is rejected, and H_1 is accepted.

Fragrance Aspect

Table 6

Anova Test

ANOVA

Aspek Aroma

	Sum of Squares	Df	Mean Square	Fhitung	Ftabel	Sig.
Between Groups	115,640	5	23,128	33,478	2,229	0,000
Within Groups	410,360	594	0,691			
Total	526,000	599				

From the data that has been calculated, explained that $F_{count} > F_{table}$, 33.478 > 2.229 then testing in an aspect of aroma, with Anova test method one way with α 5% (0.05) stated that there are differences in aroma between each sample so that H_0 is rejected and H_1 is accepted.

Aspect Texture

Table 7

Anova Test

ANOVA

Aspek Tesktur

	Sum of Squares	Df	Mean Square	Fhitung	Ftabel	Sig.
Between Groups	55,373	5	11,075	15,504	2,229	0,000
Within Groups	424,300	594	0,714			
Total	479,673	599				

From the data that has been calculated, it explained that F_{count} > Ftable, 15.504 > 2.229 then testing in aspect texture, with Anova test method one way with α 5% (0.05) stated that there is a difference texture between each sample so that H_0 is rejected and H_1 is accepted.

Taste Aspect

Table 8

Anova Test

ANOVA

Aspek Rasa

	Sum of Squares	Df	Mean Square	Fhitung	Ftabel	Sig.
Between Groups	97,448	5	19,490	30,425	2,229	0,000
Within Groups	380,510	594	0,641			
Total	477,958	599				

From the data that has been calculated, explained that $F_{count} > F_{table}$, 30.425 > 2.229, then testing in aspect of taste, with Anova test method one way with α 5% (0.05) stated that there is difference texture between each sample so that H_0 is rejected and H_1 is accepted.

4. Conclusion

Flour Green Beans can make as material raw in making cake sponge baked, and earned society. This can be seen in samples A and C, which have marked high liking. However, samples B, D, and E can still be accepted by society because their own no results differ, far from the values of Sample A and Sample C.

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Based on hedonic test results, the Fifth sample shows numbers that do not differ away because it uses 100% peanut green flour, so from color, aroma, and texture, there is no difference far. However, for the taste aspect, sample E has a value of 3.46%, which the panelists liked sample E. To sample, others were still categorized as "preferred" because the five samples' hedonic test results were still in the mean ± 3.00%.

Some suggestions can be given to the reader who wants to do a study made from base flour peanut processed green on a food product. Besides helping reduce import operating system bat enough food tall in Indonesia, usage flour peanut green is also rich in good nutrition and content Health, so suitable for several people with diabetes and *gluten-free*. Another suggestion is where at the time make flour peanut green; the researcher recommends roasting seed peanut green until ripe to smell unpleasant no smell.

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