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The Use of Brown Rice Flour as A Substitute for Wheat Flour In The Production of Madeleine Cake

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A B S T R A C T

Madeleine cake or commonly referred to as petite madeleine is a small French version of the butter cake. This madeleine cake has a unique shape characteristic that is in the form of a clamshell and then has a 'bump' or part that expands on the back side of the cake. These little cakes have been loved by kings and peasants since the 17th century, and were ingrained in French hearts and culture by the French philosopher Proust in the early 1920s. Whole grain rice is rice that contains three edible components, namely the bran, germ, and endosperm. Meanwhile, refined rice is rice that is polished to remove parts of the bran and germ so that only starchy white endosperm remains, hence the name "white" rice. Researchers want to spread Madeleine Cake to the people of Indonesia with a unique and healthy variant, namely the replacement of flour raw materials with the use of local ingredients, namely brown rice flour. With the hope that the product can be healthier, has a more unique aroma, taste and texture to be enjoyed by various group of people.

A R T I C L E I N F O

1. INTRODUCTION

Madeleine cake or commonly referred to as petite madeleine is a small version of the French butter cake. This madeleine cake has a unique shape characteristic, which is in the shape of a clamshell and then has a 'bump' or a part that expands on the back side of the cake. (Sam, 2020). These little cakes have been favored by kings and peasants alike since the 17th century, and were instilled in French hearts and culture by the French philosopher Proust in the early 1920s (Ledsom, 2018). Traditionally this cake is made from a mixture of egg yolks creamed with sugar and lemon zest, then folded in with flour, butter and egg whites that have been beaten until stiff and then baked in a shell-shaped mold (Davidson, 2014:484). The reason researchers chose madeleine cakes was because researchers found several online shops selling madeleine cakes in various shapes and flavors. Researchers also found several madeleine cakes in bakeries or pastry shops with various interesting flavors, such as the earl gray flavor at the Tous Le Jours shop.

From this, the researchers saw that this madeleine cake is a cake that is flexible to develop recipes for various forms of creation. Because of this, researchers are interested in participating in developing this madeleine product into a new creation. One of the other reasons why researchers chose madeleine cakes in this study, because madeleine cakes have basic ingredients that are easy to obtain. Madeleine cakes are made from eggs, sugar, flour and butter. Furthermore regarding presentation, this beautiful cake is usually served traditionally in the morning with coffee or in the afternoon served with tea as the French version of the le gouter or afternoon tea time menu (Ledsom, 2018). From the madeleine custom presented, the researchers hope that this cake can become a new snack as a coffee and tea companion for the Indonesian people. In addition, the madeleine cake also has a beautiful shape and has a high taste so that this cake can be enjoyed by all ages, from children to adults. From the explanation above, the researcher explains several reasons for choosing madeleine cake as a product of this study. Researchers got inspiration to make madeleine cakes with new creations, namely by replacing the basic ingredients of wheat flour with local food ingredients, namely brown rice flour. With the replacement of the main ingredient, the researchers hope to add new and unique variants in terms of appearance, aroma, taste and texture to the madeleine cake to the public. Researchers used local food ingredients brown rice flour made from brown rice. First, the researcher will give a brief explanation about rice.

Rice is a versatile grain, which is consumed by many people around the world. He explained that rice is a staple food in several countries such as China, Japan, South Korea, India, and also Indonesia. In Indonesia, rice plants are plants that are commonly found. In addition, Indonesia is also the third largest rice producing country after China and India. Rice production in Indonesia, with an average production of 77.96 million tonnes or contributing 10.28% to total world rice production (Dihni, 2022).

From the statement above, it is explained that rice is a local food that is easy to find and is widely produced in Indonesia, which is a tropical country. Because of this, researchers hope that this research can support local food products and can also help the welfare of rice farming communities in Indonesia.

Furthermore, researchers will provide an explanation of brown rice in general. Brown rice is a whole-grain, meaning that brown rice contains three parts of the grain: a fiber-filled outer layer called the bran, a nutrient-rich core called the germ, and a starchy middle layer called the endosperm. (Harvard T. H. Chan School of Public Health, 2018). Basically, brown rice is rice that is not polished so that the nutrition of the rice is still very good and

maintained. It was explained that the bram, endosperm and germ parts of brown rice are rich in minerals, fiber and vitamins (Healthline, 2021). One of the reasons researchers chose brown rice is because brown rice is rich in nutrients. From the explanation above it is explained that, brown rice is whole-grain rice, in which brown rice still has three important parts of rice so that its nutrition is still well preserved.

Next, the researcher will provide a nutritional comparison table between white rice, brown rice, brown rice and black rice.

Table 1. Comparison Of Nutrition in White, Brown, Red and Black Rice (Serving Measure Per 100 g)

	Protein	Iron	Fiber
White Rice	6.8 g	1,2 g	0,6 g
Brown Rice	7,9 g	2,2 g	2,8 g
Red Rice	7,7 g	5,0 g	2,0 g
Black Rice	8,5 g	3,5 g	4,9 g

Source: Kabra 2021

Based on the table above, brown rice has the second highest protein content among the three other rices. Then, for iron in brown rice has the third highest level. And finally, the fiber content found in brown rice has the second highest content. It can be concluded that brown rice is rich in protein and fiber. Besides being rich in protein and fiber, brown rice also contains various B vitamins, vitamin E, and phytochemicals (Goodrx Health, 2021). Brown rice is also rich in magnesium, which helps control blood sugar levels in the body.

Brown rice also has a low glycemic index level, which is at 50, a lower number 6 compared to white rice which is at 89 and wheat flour at 85. (The Diabetes Council, 2016). Brown rice also contains phenol and flavonoid substances which are two types of antioxidants that help reduce cell damage and reduce the risk of premature aging. Consuming brown rice can also reduce the risk of heart disease, and help control weight. (Coleman, 2016).

It can be concluded from the previous statement, that brown rice has good nutrition for the body and is a food ingredient that is easy to obtain in Indonesia. Furthermore, brown rice can be used to make brown rice flour which can be used as a variation in the manufacture of a food product including pastry products. Next, the researcher will explain the general definition of brown rice flour. Brown rice flour is the result of grinding brown rice where the outer layer of the grain is ground all at once or whole. Brown rice flour is known to have a fairly high antioxidant content (Leoni Jesner, 2021).

According to Dr. Josh Ax, DC, DNM, CN (2018) brown rice flour has several advantages including: being rich in fiber, being a good choice of gluten-free products, and being able to help maintain a healthy liver. Researchers will use brown rice flour as a substitute for the main ingredient of wheat flour in making madeleines. The following is a nutritional comparison between brown rice flour and wheat flour.

Table 2. Comparison of The Nutritional Content of Brown Rice Flour and Wheat Flour (Serving Measure 100 g)

	Brown Rice	Flour
Carbohydrate	76,48 g	77,2 g
Protein	7,23 g	9,0 g
Fosfor Phosphor	337mg	150 mg
Potassium	289 mg	-
Magnesium	112 mg	-

	Brown Rice	Flour
Fiber	4,6 g	0,3 g
Seng Zinc	2,45 mg	2,8 mg
Iron	1,98 mg	6,3 mg
Copper	0,230 mg	0,02 mg
Thiamin (Vitamin B1)	0,443 g	0,35 g

Source: U.S Departement of Agriculture, 2019

The Table above shows that brown rice flour is superior in potassium, phosphorus, magnesium, fiber, copper, and vitamin B1 when compared to wheat flour. The researcher will briefly explain the functions of the superior substances and vitamins in the table above, as follows:

Potassium, this substance is good for the body because it is needed to normalize all cell functions in the body, such as regulating the heartbeat, ensuring the proper functioning of muscles and nerves, and is very important for synthesizing proteins and metabolizing carbohydrates in the body (Harvard Health Publication, 2019). Phosphorus and magnesium, these two substances have a major function in the formation of healthy bones and teeth (Bonvissuto, 2020). Fiber, this substance has the main function for the body is to maintain health in the body's digestive process system. In addition, fiber also delays the absorption of sugar from the intestine, which can help maintain lower blood sugar levels and prevent rapid increases in blood insulin levels, which have been linked to obesity and an increased risk of diabetes. (BetterHealth, 2021). Copper is a mineral found throughout the body. This substance helps the body to make red blood cells, maintain nerve cells, and keep the immune system healthy. Copper can also act as an antioxidant, reducing free radicals that can damage cells and DNA. (Mount Sinai, 2022).

Vitamin B1. Vitamin B1, or thiamin, helps prevent complications in the nervous system, brain, muscles, heart, stomach and intestines. It is also involved in the flow of electrolytes in and out of muscle and nerve cells, so it can help prevent diseases such as beriberi, which involves disorders of the heart, nervous, and digestive systems. (Brazie, 2017).

From the brief explanation above, it can be concluded that brown rice flour is superior in several substances and vitamins that are good for the human body. Brown rice flour is a local product that is quite easy to find in Indonesia. Brown rice flour can be found in large supermarkets, organic stores, cake ingredients shops and can also be found easily in e-commerce such as Tokopedia, Shopee, Lazada or online stores in the Instagram application.

According to Lim (2021) brown rice flour is very easy to make at home (homemade). The method of making brown rice flour consists of only two steps, namely: 1) milling using a high-speed blender and 2) sifting process until the texture of the flour becomes smooth. Brown rice flour that has been made can be stored in a tight-fitting jar and can last at room temperature for three months.

According to Leony (2021) unlike many commonly used flours which taste bland, brown rice flour can improve cooking by providing flavor. Because of this, brown rice flour is often used to bake bread, cakes, and even to thicken sauces. Based on the Know Your Pantry website in 2021, although brown rice flour contains bran and germ parts, the color of brown rice flour is bone white, so it doesn't affect product results. Brown rice flour also has a slightly coarse texture and gives the product a toasted taste. However, it can also increase the crispiness of pastry products. As researchers found on the Very Well Fit website in 2021, it was explained that apart from the common brown rice flour, there are many types of brown rice flour, including sprouted, stoneground, organic, and superfine. The researchers used an organic type of brown rice in the making of this 11 madeleine cake, in order to get brown rice that is free of pesticides and can improve the taste and aroma of the product.

Researchers have conducted three pre-experiments, namely by replacing 100% wheat flour with brown rice flour, with the results of the first, second and third pre-experimental products as follows.

 a) Pre-experiment 1

Figure 1. Madeleine Cake
Source: Research Documentation, 2022

In the first pre-experiment, the madeleines were baked at an oven temperature of 190'C until they were golden brown or cooked with the results in terms of volume for the comparison product slightly higher than the experimental product.

Then, in terms of texture, the experimental product has an outer texture that is crispier than the comparison product. However, both have a fairly dark color. Therefore, the researchers conducted a second pre-experiment to fix this.

 b) Pre-experiment 2

Figure 2. Madeleine Cake (Comparison products on the left and experimental products on the right)
Source: Research Documentation, 2022

In the pre-experimental results, the two researchers changed the temperature to 180'C for 16 minutes, the volume of the comparison product was much higher than the experimental product. The aroma, texture and taste are still the same as the first pre-experiment. However, the color is a little lighter than before but still quite dark, and it has not gotten a golden-brown color yet.

 c) Pre-experiment 3

Figure 3. Madeleine Cake (Comparison products on the left and experimental products on the right)
Source: Research Documentation, 2022

In the third pre-experiment, the comparison product and the experimental product had a bright color and golden brown, then at a fixed volume the comparator product was

higher but the volume of the experimental product increased quite a lot compared to the second pre-experiment.

The texture and taste are still the same, the experimental product has a crispier edge and a distinctive taste compared to the comparison product. There is no significant difference between the two products.

The purpose of this study was to determine the appearance of madeleine cakes using brown rice flour compared to those using wheat flour.

a) To find out the aroma of madeleine cake using brown rice flour compared to using wheat flour.

b) To find out the taste of madeleine cake using brown rice flour compared to using wheat flour.

c) To find out the texture of madeleine cake using brown rice flour compared to using wheat flour.

2. LITERATUR REVIEW

2.1. Introduction of Brown Rice Flour Commodity

Researchers used the main commodity in this study with brown rice flour derived from brown rice. Brown rice is rice that is included in the whole grain, namely rice grains that still contain the bran (the epidermis or bran), the endosperm (grain) and the germ (eyes of rice or embryo) (Shoemakers, 2021).

First, the researcher will explain the definition of rice. Rice (Oryza sativa L.) is a food crop that is produced the most and is widely distributed in various countries, especially in the tropics. Rice plants belong to the genus Oryzeae which belongs to the family Oryzeae in the family Gramineae (grasses), of which 20 species of these plants are spread in various regions, especially the wet tropical regions of Africa, South Asia, Southeast Asia, South China, South and Central America and Australia (Sumiati, 2003).

Next, the second, the researcher will explain the process of making rice. Researchers took from the Rice Knowledge Bank website which was launched in 2010 rice plants will go through several processes, namely: (a) Pre-cleaning of paddy before milling; (b) Remove the husk or outer layer of rice; (c) whitening or polishing (removes the bran and germ parts); (d) separate the crushed grains from the whole kernel; (e) rice weighing; and (f) packaging of rice based on its type.

In the process of making brown rice only up to the second stage, namely removing the husk or the outer layer of the rice. It does not go through the third stage, namely whitening or polishing, namely the process of removing the bran and germ of rice. Therefore, brown rice includes whole grain or whole grain rice. Rice is divided into two types, namely whole grain rice and refined rice.

Whole grain rice is rice that contains three edible components, namely the bran, germ, and endosperm. Meanwhile, refined rice is rice that has been polished to remove the bran and germ parts so that only white starchy endosperm remains, hence the name "white" rice. (Harvard T.H. Chan, 2022).
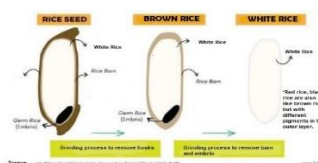

Figure 4. Parts of Brown Rice
Source: Limone, 2022

Health-wise, brown rice is rich in magnesium and fiber, both of which help control blood sugar levels in the body and have the second lowest glycemic index level compared to three other types of rice.

Table 3. Rice Type

Rice Type	White	Brown	Black	Red
Glycemic index	89	50	42	55

Source: The Diabetes Council, 2016 & Saini, 2017

Brown rice flour is flour that comes from the grinding process of brown rice seeds that are not peeled or milled as a whole (McMahon, 2022).

Making brown rice flour goes through several additional stages from ready-made brown rice, namely (a) Grinding process with a high-speed blender; (b) Flour sifting; (c) Second grinding process; (d) Second flour sifting; (e) Repetition of the process until the desired result is obtained; and (f) Storage of products in jars.

The process of making this flour can be done at home as long as the materials and equipment are available. Brown rice flour is now a popular choice for a number of people, because it can be used as a substitute ingredient in various food-making processes, one of which is in dessert dishes. Plus, brown rice flour is a gluten-free product, so it is widely used by people with gluten intolerance as a dish.

2.2. Madeleine Product Introduction

Madeleines or petite madeleines are traditional small cakes originating from the Town of Commerce in the Lorraine Region, France. Some history of this beautiful madeleine cake states that the madeleine cake was first made by a chef named Jean Avice in the 19th century. However, in the City of Commerce in the Lorraine Region which is the city with the most madeleine production, there is another version regarding the origin of the madeleine cake, namely this cake is believed to have first appeared in the 1700s by a maidservant named Madeleine Palmier who was a cook for aristocrats in Lorraine, namely Stanislas Leszczyński. It is explained that Madeleine served this cake, which was a recipe that came from her grandmother, to Stanislas Leszczyński, and he loved it. However, this cake does not have a name, so this cake is named madeleiene according to the name of the maker. This cake is very popular with many people, so that this cake can be spread throughout France (Ledsom, 2018).

Madeleine cake with an original Lorraine recipe, which is made from creamed egg yolks with sugar, grated lemon zest, flour, butter, and stiff egg whites, then mixed using the fold-in technique and then baked in a shell-shaped mold (Davidson, 1999).

The characteristics of a madeleine cake are that it is a small cake that is baked in a shell-shaped mold, then has a protruding and expanding back of the cake while the top is flat (Sam, 2020).

Madeleine is also mentioned as a mixture of cookies and cake, has a small shape like cookies, but has a texture that resembles cake. Madeleine has a buttery, sweet taste and has distinct notes of vanilla, lemon and butter (Allies, 2021)

Chenal (2021) reveals that madeleine cakes are usually eaten in the morning combined with coffee or in the afternoon at 4 (four) as a tea cake for "goûter", which is the French version of having tea in the afternoon (afternoon tea time).

The characteristics of madeleines and the custom of madeleines served with tea have made these madeleines acceptable and become a new snack in Indonesia.

3. METHODS

3.1. Comparative Madeleine Taste Test and Experimental Madeleine

Organoleptic testing includes assessments that can be captured by the senses, such as smell, appearance, taste and touch (Maximum Yield, 2021).

3.2. Hedonic Test

Researchers use the hedonic test to collect product data analysis. According to Sofiah and Achsyar (2008) the hedonic test is a test for panelists to provide personal responses about likes or dislikes and their levels. The research design conducted by the author is research with experiments

Taste test is a test conducted on the taste of food. Nizar, (2011) states that "the taste of food can be assessed by means of the human senses, namely the eyes as a sight, the nose as an organ of smell, the tongue as a means of taste/tasting, the skin as a means of touch and the ear as a hearing device."

In this study the authors used the five human senses to be able to assess the taste of the experimental results that were made. The assessment includes smell in the nose, taste in the tongue, and vision in the eyes.

3.3. Rating Formula

Table 4. Scoring Scale

No.	Category	Score
1	Dislike/bad taste	1
2	Less like/less taste	2
3	Like Enough/taste enough	3
4	Like/delicious	4

Source: Kusherdyana, 2019

After getting the data, the tester will calculate the data results to get the hedonic test results that have been given to the researcher. Then, the average of the assessment results will be calculated.

In calculating the average, the researcher will use the following formula:

$$\bar{x} = \frac{\sum x_i}{n}$$

Source: Kusherdyana, 2019

X = Average
$\sum X$ = Total score
n = Total panelist

To get the final result from the data that has been obtained, an interval table will be needed. The formula to get the class interval length.

Interval class length = $\frac{bigest\ data - lowest\ data}{total\ class}$

Source: Kusherdyana, 2019

From the existing data, the following results will be obtained:

Number of panelists = 25
Biggest data = 5
Smallest data = 1
Number of classes = 5
Interval class length = 5-1/5, ie 0.8.

So, the class length of the hedonic test assessment criteria is 0.8. The following is an

interval table:

Table 5. Interval Distance Panelist Assessment Criteria

Score	Assessment criteria
4.2 -5.0	Very like
3.4 – 4.1	Like
2.6 – 3.3	Like enough
1.8 – 2.5	Less like

Source: Research Data, 2019

4. RESULTS AND DISCUSSION

Table 6. Hedonic Test Results on The Appearance of Madeleine Cake (N=25)

APPEARANCE	1		2		3		4		5		Total	
	f	f(x)	f	f(x)	f	f(x)	f	f(x)	f	f(x)	f(x)	x̄
COMPARISON					3	9	9	32	3	15	56	3.8
EXPERIMENT			2	4	5	15	6	24	2	10	51	3.4

Source: Panelist Assessment Results and Research Processed Data, 2022

From the table above, it can be explained that the appearance aspect of the comparator madeleine product produced several results, namely, there were three panelists who gave a value of 3 which was quite like it, there were nine panelists who gave a value of 4 namely liked it, and there were 3 panelists who rated it with a score of 5 i.e. really like.

Furthermore, the experimental madeleine product gave results, namely, there were two panelists who gave a value of 2, namely they did not like it, then there were five panelists who gave a value that quite liked it, there were six panelists who gave a value of 4, namely they liked it, and there were two panelists who gave a value of 5, namely really like. It was concluded with the results of these data that the average value was obtained for the appearance aspect of the comparator madeleine product, which was 3.8 and for the experimental madeleine product, which was 3.4.

There is a difference in value of 0.4 between the comparison product and the experimental product. So, based on the results of the hedonic test that has been done, the experimental madeleine product is still well received by the public.

Table 7. Hedonic Test Results on Aroma of Madeleine Cake (N=25)

AROMA	1		2		3		4		5		Total	
	f	f(x)	f	f(x)	f	f(x)	f	f(x)	f	f(x)	f(x)	x̄
COMPARISON					7	21	11	44	7	35	100	6.67
EXPERIMENT					3	9	10	40	12	60	110	7.33

Source: Panelist Assessment Results and Research Processed Data, 2022

Based on the assessment given by the panelists on the aroma aspect of the madeleine cake product for the comparison product, the results obtained were that there were seven panelists who gave a value of 3 or quite liked it, there were 11 panelists who gave a value of 4 or liked it, and there were seven panelists who gave a value of 5 or really liked it.

Meanwhile, the experimental madeleine product obtained results, namely, there were 3 panelists who gave a value of 3 or quite liked it, there were 10 panelists who gave a value of 4 or liked it, and 12 panelists who gave a value of 5 or really liked it. It was concluded from the results of these data, the average value of the comparator madeleine product was 6.67 and the experimental madeleine product was 7.33.

With the results of the data above, the experimental product is superior with a difference in value of 0.66 with the comparison product. So, based on the results of the hedonic tests that have been carried out, the experimental madeleine product can be liked by the public.

Table 8. Hedonic Test Results on Taste of Madeleine Cake (N=25)

TASTE	1		2		3		4		5	
	f	f(x)	f	f(x)	f	f(x)	f	f(x)	f	
COMPARISON					8	24	10	40	7	
EXPERIMENT					5	15	7	28	13	

Source: Panelist Assessment Results and Research Processed Data, 2022

Based on the assessment given by the panelists on the texture aspect of the comparative madeleine cake product, the results obtained were that there were eight panelists who gave scores 3 or quite like it, there are 10 panelists who give a value of 4 or like it, and finally there are seven panelists who give a value of 5 or really like it.

Meanwhile, for the experimental madeleine product, the results were that there were five panelists who gave a value of 3 or quite liked it, there were seven panelists who gave a value of 4 or liked it, and there were 13 panelists who gave a value of 5 or really liked it. It was concluded from the table above that the average value of the comparator madeleine products was 3.96 and the experimental madeleine products were 4.32.

Based on the above data, the experimental madeleine product is superior with an average difference – average 0.36 compared to the average value of the comparator madeleine products. So, in conclusion, the experimental madeleine product can be accepted by the public.

Table 9. Hedonic Test Results on Texture of Madeleine Cake (N=25)

TEXTURE	1		2		3		4		5		Total	
	f	f(x)	f	f(x)	f	f(x)	f	f(x)	f	f(x)	f(x)	x̄
COMPARISON					8	24	11	44	6	30	98	3.92
EXPERIMENT					5	15	13	52	7	35	102	4.08

Source: Panelist Assessment Results and Research Processed Data, 2022

Based on the assessment given by the panelists on the texture aspect of the comparator madeleine cake product, there were eight panelists who gave a value of 3 or quite liked/tasty enough, there were 11 panelists who gave a value of 4 or liked/tasty, and finally there were six panelists who gave a value of 5 or really like/very good.

For the experimental madeleine product, there were five panelists who gave a value of 3 or quite liked/quite tasty, there were 11 panelists who gave a value of 4 or liked/tasty, and finally there were seven panelists who gave a value of 5 or really liked/very good.

Based on the above data, the average value of the comparator madeleine products was 3.92 and for the experimental madeleine products was 4.08.

There is an average difference of 0.16 where the experimental product is superior to the comparison product. So, from the data explained above, experimental products can be liked and accepted by the public.

5. CONCLUSION

In terms of appearance, the comparison product has a higher volume than the experimental product. The comparative madeleine product also has a slightly lighter color compared to the experimental madeleine product. Then, for the experimental madeleine product, it has a lower volume compared to the comparison product. In terms of color, the experimental madeleine product has a slightly darker color than the comparison product. However, visually from the front of the cake, there is no significant difference between the two products. Based on the organoleptic test, the experimental product in terms of appearance is suitable for consumption by the public and consumers.

In terms of aroma, the comparison product and the experimental product did not have

a significant difference, both had a sweet, buttery and slightly fresh aroma from lemon zest.

However, in the experimental product there is a slightly distinctive organic aroma that comes from brown rice flour. Based on the organoleptic test, the experimental product in terms of aroma is suitable for consumption by the public or consumers.

Based on the organoleptic test that has been carried out from the texture aspect, the comparator product has a dry texture on the outside and on the edges of the cake. However, the inside of the cake is soft and airy. Then, the experimental product has a drier and crispy texture on the outside and on the edges of the product. Then, on the inside of the product which is quite soft and gritty. Experimental products on the texture aspect are suitable for consumption by the public and consumers.

The taste produced from the comparative and experimental madeleine cake products is that both have a sweet, buttery, and slightly fresh taste from lemon zest. However, there is a slight difference, namely in the experimental product there is a 'nutty flavor' and a distinctive organic taste that comes from brown rice flour. This makes the taste of the experimental product madeleine cake increase. Based on the organoleptic test, the experimental product in terms of taste can be well received by the public or consumers.

From all the statements above, the conclusion that the writer can get is that the experimental madeleine cake made from brown rice flour is a product that is suitable for consumption and marketed to the public.

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