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The Designing Functional Food From Red Rice With Red Guava.

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Abstract: *This study aims to determine the ratio of brown rice flour with red guava in the manufacture of instant flour. This research was conducted at the Food Processing Laboratory, Faculty of Agriculture, Catholic University Santho Thomas, Medan. The research was conducted using a completely randomized design (CRD) in factorial form consisting of: Factor 1: The comparison of brown rice flour with red guava flour with K code with four levels, namely: K_0 = 100% brown rice flour, K_1 = 90% flour brown rice with 10% red guava flour, K_2 = 80% brown rice flour with 20% red guava flour and K_3 = 70% brown rice flour with 30% red guava flour, K_4 = 60% brown rice flour with 40% red guava flour, K_5 = 50% brown rice flour with 50% red guava flour. Factor 2: The storage time for 4 levels of treatment with S code, namely: S_0 = 0 days, S_1 = 7 days, S_2 = 14 days and S_3 = 21 days. The results showed that the comparison of brown rice flour with red guava flour had a very significant effect on moisture content, ash content, fat content, vitamin C content, fiber content, organoleptic value on protein content and carbohydrate content of the mixture of red guava flour and brown rice. . Storage time had a very significant effect on water content, protein content, fat content, vitamin C content, fiber content, carbohydrate content, organoleptic value but had no significant effect on ash content. The longer the storage, the water content, ash content and carbohydrate content increased, while the protein content, fat content, vitamin C content, vitamin C content, fiber content, and organoleptic value decreased. The best instant flour is obtained from the ratio of brown rice flour to red guava flour 70% to 30% (K3) seen from the organoleptic value, protein and vitamin C content.*

Key words: red guava, red rice, storage and instant flour

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I. Introduction

The functional food has physiological functions that are beneficial to health, and not only provides essential nutrients to the body, but also provides a protective effect against several diseases. Groups that have functional values are food fiber (deitary fiber), oligosaccharides, sugar alcohols (polyols), polyunsaturated fatty acids (PUFA), peptides and proteins, glycosides and isoprenoids, polyphenols and isoflavones, choline and lecithin. , choline and lecithin, phytosterols, vitamins and minerals [1]. (Song, et.al., 2010). Functional food is naturally present in foodstuffs, can be consumed as part of daily diet, and has a function when digested and helps metabolic processes in the body, including strengthening the body's defense mechanisms or increasing immunity against a disease, preventing certain diseases. for example heart disease, cancer, osteoporosis, and others [2]. The chemical components of functional food are vitamins, minerals, sugar alcohols, unsaturated fatty acids, certain peptides and proteins, amino acids, dietary fiber, prebiotics, probiotics, choline, lecithin and inositol, carnitine and squalen, isoflavones, phytosterols and phytostanol and polyphenols [3].

The red guava in 100 grams of fruit contains vitamin C 87 mg, vitamin A 25 SI, vitamin B1 0.02 mg, vitamin B2 0.04 mg, niacin 1.10 mg, calcium14 mg, hydrate charcoal 12.2 g, phosphorus 28 mg , iron 1.1 mg, protein 0.9 mg, fat 0.3 g, fiber 5.60 g, water 86 g, carotene 59, 5 mg, retinol 9.9 mg [4]. Guava contains active substances with concentrations included in functional foods. The active substances are antioxidants in ascorbic acid (a candidate for vitamin C), β-carotene (pro vitamin A) and anthocyanins, and dietary fiber in the form of pectin. Apart from tasting better, it is also rich in micronutrients.[5-6].

The brown rice contains high levels of B complex vitamins, essential fatty acids, fiber and anthocyanin compounds which are very beneficial for health. Polyphenols in brown rice are compounds from the flavonoid group, such as flavones, flavones-3-ol, flavonones, and anthocyanidins. Anthocyanin pigments (glycon forms of anthocyanidins) can act as antioxidants, antimicrobials, antiviral, anti-inflammatory, photoreceptors, as well as allergy. The meanwhile, the simple phenolic compounds detected include ferulic acid, ocresol, 3,5-xylenol, caffeine acid, p-coumaric acid, gallic acid, syrup acid, protokatecuric acid, p-hydroxybenzoic acid, vanillic acid, guaiacol, and p-cresol. In brown rice, there are a number of carotenoid, tocopherol and tocotrienols which can also act as antioxidants. The chemical content of brown rice consists of 7.5 g protein, 0.9 g fat, 77.6 g carbohydrates, 16 mg calcium, 162 mg phosphorus, 0.3 g iron, 77.6 carbohydrates, 0.3 g iron. and vitamin B1 0.21 mg. Brown rice is very good for consumption by diabetics, because it can lower cholesterol[7-8]. Based on this description, the writer considers conducting research with the topic " The designingfunctional food from red rice with red guava".

II. The Materials And Methods

2.1. Material

The materials used in this study were red guava from the Tj. Rejo Medan. The tools used in this research are vacuum oven, 60 mesh sieve, mixer, scale, milling machine, glassware, furnace, and cup. Reageants used in this study were H_2SO_4, NaOH 0.1N, K_2SO_4, Mengsel Indicators, HgO, and N-Hexane.

2.2. Methods

This research was conducted using a completely randomized design (CRD) in factorial form consisting of: Factor I: Comparison of brown rice flour with red guava flour with K code with four levels, namely: K_0 = 100% brown rice flour, K_1 = 90% flour brown rice with 10% red guava flour, K_2 = 80% brown rice flour with 20% red guava flour and K_3 = 70% brown rice flour with 30% red guava flour, K_4 = 60% brown rice flour with 40% red guava flour, K_5 = 50% brown rice flour with 50% red guava flour. Factor II: Storage time for 4 levels of treatment with S code, namely: S_0 = 0 days, S_1 = 7 days, S_2 = 14 days and S_3 = 21 days. The research implementation can be seen in Figure 1.

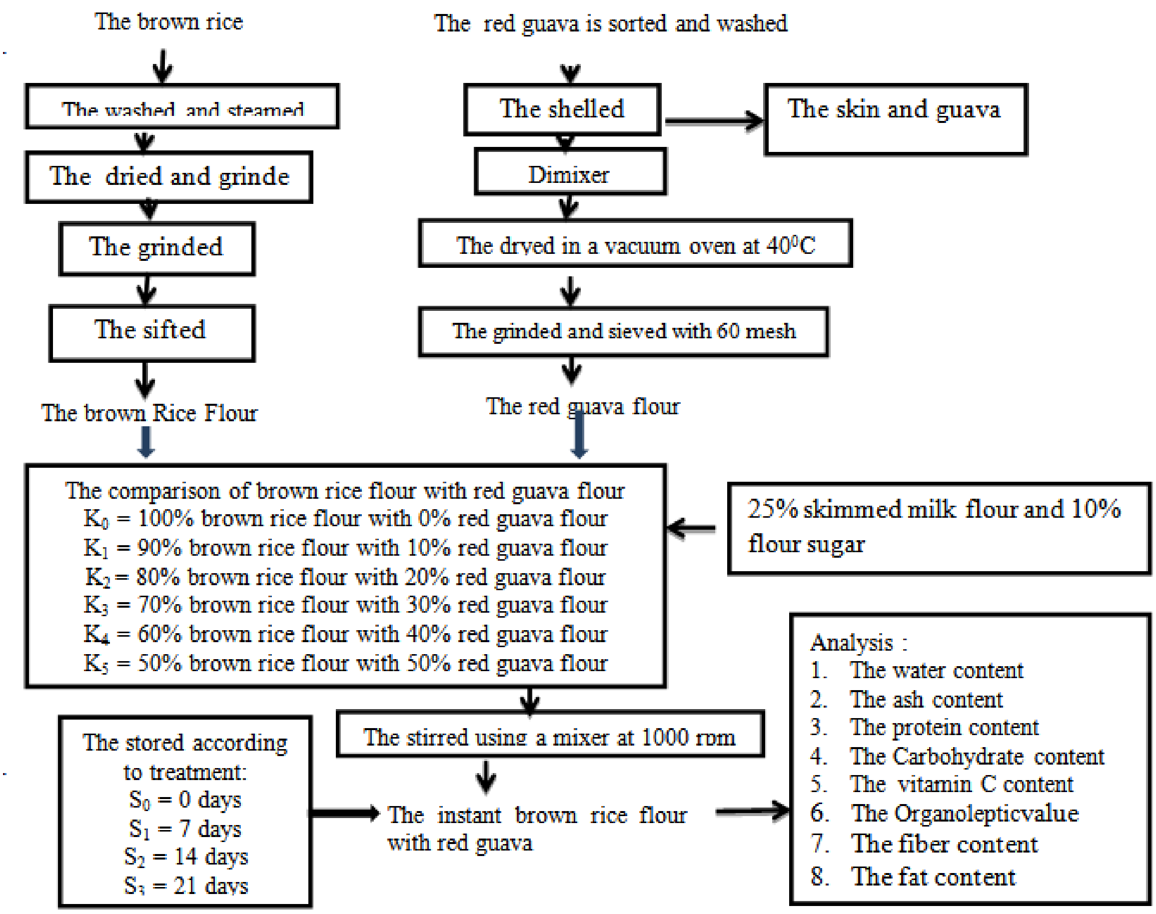

Figure 1 The flow diagram of research implementation

The observation and data collection

2.1. The determination of water content

The sample was weighed as much as 5 g of mash then put into a dish that had previously been dried in the oven and the weight was known. Then the plate containing the sample was closed, put in an oven for 4 hours at a temperature of 105 °C after which the plate was transferred into a desiccator, then weighed again (carried out until the weight was constant) [9].

2.2. The ashcontent[10]

A sample of 5 grams was taken from the determination of the water content burned in an ashes furnace at 525 oC for 3 hours until it reaches a constant weight. The ash content is calculated by the following formula:
The ash content (% bb) = (weight of ash) / (initial weight of sample) x 100%

2.3. The protein content (%) [11].

Determination of protein content was carried out by means of Kjeldahl macro. As much as 1 g of the sample was put into the Kjedahl flask, then added 5 g of selenium catalyst and 10 ml of concentrated H2SO4. Digestion for 1 hour until a clear green solution is obtained. The solution was cooled and added with 100 ml of distilled water, then 10 ml of the solution was put into a distillation tube. The distillate was collected with a 250 ml erlenmeyer containing 10 ml H2SO4 0.25 N and two drops of hinged indicator. Furthermore, the distillation tool was added 30 ml of 30% NaOH solution. The distillation process is carried out until 2/3 of the liquid is distilled. The distillate is titrated using 0.1 N NaOH solution until the color changes from green to blue. This procedure is also performed for blank solutions. The protein content can be calculated using a formula:

$$\% N = \frac{(\text{ml NaOH blank} - \text{ml NaOH sample}) x N NaOH x 14{,}008}{\text{g sample x } 10} \times 100\%$$

% Protein - % N x correction factor

2.4. The carbohydrate content (%) [12].

The determining carbohydrate levels by means of a rough calculation is also called Carbohydrate by difference, namely determining carbohydrates using calculations and not analysis.

The carbohydrates (%) = 100% -% (water + ash + fat + protein + crude fiber)

2.5The vitamin C content[13].

The determination of vitamin C levels is done by dissolving 10-20 grams of material then put in a 100 ml volumetric flask and adding aquadest up to 100 ml of the tera mark. Then filtered using filter paper. Take 10-25 ml of the filtrate and put it in 125 ml Erlenmeyer and add 2 ml of 1% starch solution. Then titrated with 0.01N iodine until a bluish color change **occurs.**

$$\text{The vitamin C content (mg/100 g)} = \frac{\text{ml Iodium } 0{,}01 \text{ N X } 0{,}88 \text{ X V } 100}{\text{sample weight (g)}}$$

The information :

P = dilution factor

1 ml of 0.01N iodim = 0.88 mg vitamin C.

2.6. The determination organoleptic value [14].

The organoleptic test that is applied is the preference test regarding a person's assessment of biscuits. In this preference test, panelists were asked to give an assessment of color, aroma, texture and taste. This test was carried out on 500 researchers then gave a score for each treatment in Table 1.

Table 1. The determination organoleptic value.

The hedonic Scale	The numeric scale
The really like	5
The liked	4
The somewhat Like	3
The dislikes	2
The very dislike	1

2.7. The fiber content (%)[15].

The sample that has been mashed weighing 5 grams, added 10 ml of 30% KOH in methanol and 20 ml of Chloroform, put in a waterbath for 30 minutes at 15 minutes the sample is vortexed after 30 minutes the extract is filtered and collected in a 25 ml measuring flask. The extract was diluted with Chloroform. 1 ml of the extract is put in a 10 ml measuring flask, diluted with Chloroform. The absorption on the spectrophotometer was read with a wavelength of 440 nm.

2.8. The determination fat content [16].

Samples were dried at 50 ℃ for 15 minutes then weighed 5 g and put into a sleeve made of filter paper, then extracted with petroleum ether solution for 4 hours using Soxhlet, then oven at 105 ℃ for 3 hours. The material that has been ovenized is then put into the excavator for 15 minutes and weighed until constant weight. The difference in weight before and after extraction is the weight of the sample before showing the percentage of fat extracted.

The fat content = $\frac{a-b}{a} \times 100\%$

The information :a is the weight of sample before extraction and b is the sample weight after extraction

III. Results And Discussion

The general, the results showed that the ratio of brown rice flour to red guava flour had an effect on instant flour. The effect of the comparison of brown rice flour with red guava flour on the observed parameters is presented in Table 2.

Table 2. The effect of comparison of brown rice flour and red guava flour on the observed parameters

The comparison of fluor. Brown rice and red guava (K)	Water content (%)	Ash content (%)	Protein content (%)	Fat content (%)	Vitamin Ccontent (mg/100 g)	Fiber content (%)	Carbohydrate content (%)	Organoleptic value (Score)
Ko= 100 % : 0 %	12,79	0,16	7,83	1,97	24,09	0,58	50,88	4,54
K_1 = 90 % : 10 %	15,20	0,16	7,85	1,93	23,30	0,47	50,53	4,65
K_2 = 80 % : 20 %	15,51	0,26	7,90	1,89	22,66	0,45	50,54	4,61
K_3 = 70 % : 30 %	15,32	0,37	7,89	1,64	22,14	0,44	51,15	4,25
K_4 = 60 % : 40 %	16,01	0,41	7,85	1,51	21,86	0,42	50,90	3,98
K_5 = 50 % : 50 %	16,49	0,41	7,75	1,43	21,77	0,41	50,21	3,43

The results of the study on the effect of storage time have an effect on functional food from brown rice with red guava on the parameters observed in Table 3.

Table 3. The effect of storage time on the parameters observed

The storage time (S)	Water content (%)	Ash content (%)	Protein content (%)	Fat content (%)	Vitamin C content (mg/100 g)	Fiber content (%)	Carbohydrate content (%)	Organoleptic value (Score)
S_0 = 0 days	11,43	0,28	8,12	2,51	26,96	0,75	49,76	4,40
S_1 = 7 days	14,28	0,29	7,72	1,62	22,07	0,52	52,39	4,31
S_2 = 14 days	15,80	0,27	7,63	1,41	21,18	0,49	51,77	4,16
S_3 = 21 days	16,32	0,31	7,52	1,31	20,33	0,47	52,88	3,96

3.1. The water content

The effect of comparison of the mixture of brown rice flour with red guava flour on the moisture content of instant flour.

Table 2 showsthe treatments K_0 and K_1, K_2, K_3, K_4 and K_5, were very significantly different, while between treatments K_1, K_2, K_3, K_4 and K_5 were not significantly different. The highest water content of instant flour was found in K_5 treatment of 16.49% and the lowest was in K_0 treatment of 12.79%. The relationship between the percentage of brown rice flour and red guava flour and the moisture content of instant flour is presented in Figure 2.

The Figure 2 shows the highest water content of instant flour is found in the percentage of brown rice flour with red guava flour 50%: 50% (K_5). This shows that the higher the percentage of red guava flour, the water content of the instant flour will increase. This is because the red guava flour contains higher carbohydrates, so that with an increase in the percentage of red guava flour, the water will increase, so that the instant flour produced also increases. The high carbohydrate content in instant flour will affect the amount of water content in the flour produced, because carbohydrates have a high water binding ability. The ability of carbohydrates to bind water is related to water activity in the material, the more water is bound [17-18].

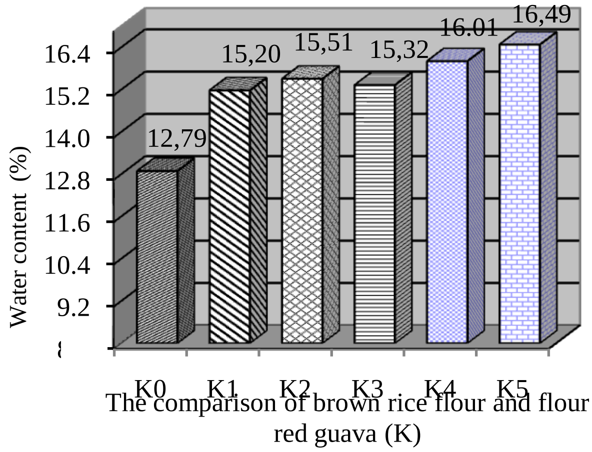

Figure 2. The comparison histogram of brown rice flour and red guava flour and moisture content of instant flour.

The effect of storage time on produced water content.

Table 3shows the treatment S_0 with S_1, S_2 and S_3, as well as between S_1 and S_2 and S_3 are very significantly different, while S_2 and $S_3$are not significantly different. The highest water content was found in S_3 treatment of 16.32% and the lowest was in treatment S_0 of 11.43%. The relationship between storage time and moisture content of instant flour follows the linear regression equation as shown in Figure 3.

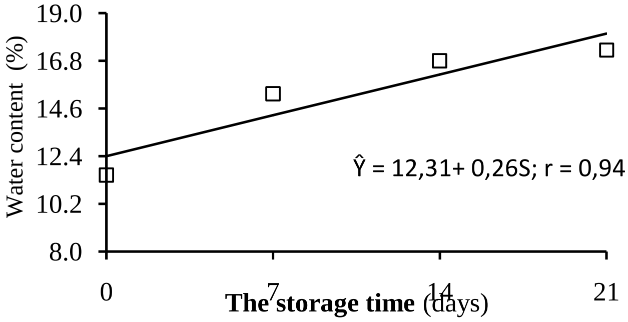

Figure 3. The storage relationship with instant flour moisture content

The Figure 3 shows the longer it is stored, the water content of the instant flour increases. This is because changes in water content can occur due to the absorption of water vapor from the air into the product during the storage period[19].Besides, the existence of microbial activity can also cause changes in water content in food products. Microbes produce H_2O or water vapor as a metabolic product[20-21]

3.2. Ash content

The effect of Comparison of Brown Rice Flour with Red Guava Flour on Ash Content of Instant Flour. Table 2 shows the K_0 and K_3, K_4 and K_5 treatments, between K_1 and K_3, K_4 and K_5, and between K_2 and K_4 and K_5, they differed significantly, while between K_1 and K_2 and between K_2 and K_3 were significantly different, while between K_0 and K_1, between K_3, K_4 and K_5 were not significantly different.

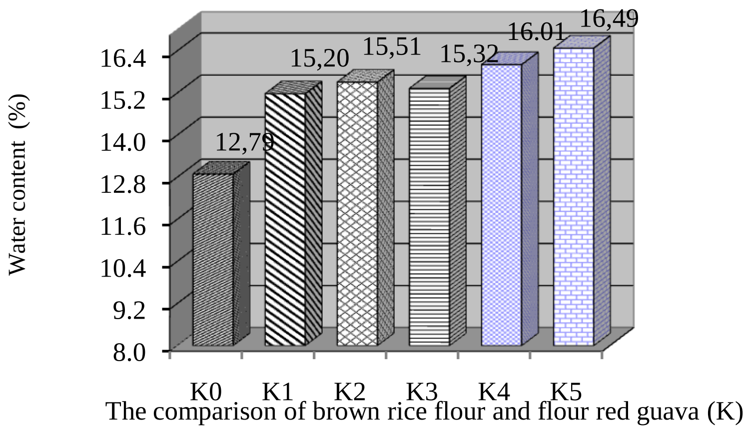

Figure 4.Histrogram of relationship comparison of brown rice flour and red guava flour with ash content of instant flour.

The highest ash content of instant flour was found in treatment K_4 and K5 of 0.41% and the lowest in treatment K_0 and K_1 of 0.16%. The relationship between the ratio of brown rice flour and red guava flour to the ash content of instant flour is presented in Figure 4.

The Figure 4 shows that the highest ash content of the mixture of red guava and brown rice is in the ratio of brown rice flour to red guava flour 50%: 50% (K_5) and 60%: 40% (K_4). This shows that the higher the percentage of red guava flour, the higher the ash content of the instant porridge. This is due to the high mineral content of red guava flour, so adding this flour in a larger portion will increase the ash content of the instant flour produced. The ash content of a material is closely related to the mineral content of the material. The ash content can show the total minerals in a food ingredient. The organic materials in the combustion process will burn but the inorganic components will not burn, because that is what is referred to as ash content[22].

3.3. The protein Content.

The effect of storage time on protein content of instant flour.

Table 3 show the treatment S_0 and S_1, S_2 and S_3 treatments, as well as between S_1 and S_3 are very significantly different, while S_1 and S_2 and between S_2 and S_3 are significantly different. The highest protein content was found in S0 treatment of 8.12% and the lowest in S_3 treatment was 7.52%. The relationship between storage time and protein content of a mixture of red guava and brown rice follows a linear regression equation as shown in Figure 5.

The Figure 5 shows that the longer it is stored, the instant flour protein content decreases. The decrease in protein levels is due to the Maillard reaction, which is the reaction between reducing sugars and amino acids that causes browning. [23]. The breakdown of some amino acids due to the Maillard reaction will further reduce the instant slurry protein content, where the Maillard reaction will be accelerated by increasing the water content of the material [24].

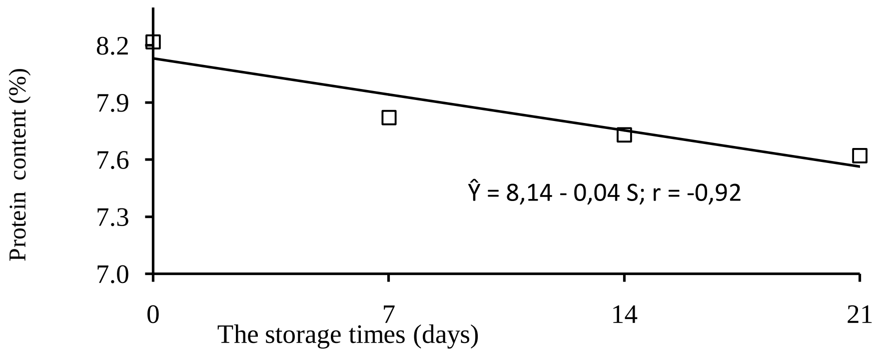

Figure 5.The relationship of the storage time with instant starch protein.

3.4. The fat content

Effect of comparison of brown rice flour and red guava flour on fat content of instant flour.

Table 2shows that between K_0 and K_3, K_4 and K_5 treatments, between K_1 and K_3, K_4 and K_5, between K_2 and K_3, K_4 and K_5, and between K_3 and K_5 were very significantly different, meanwhile, between treatments K_0, K_1, K_2, and between K_5 and K_4 and between K_4 and K_5 were not significantly different. The highest fat content of instant porridge flour was found in the K_0 treatment of 1.97% and the lowest was in the K_5 treatment of 1.43%. The relationship between the percentage of brown rice flour and red guava flour and the fat content of instant flour is presented in Figure 6.

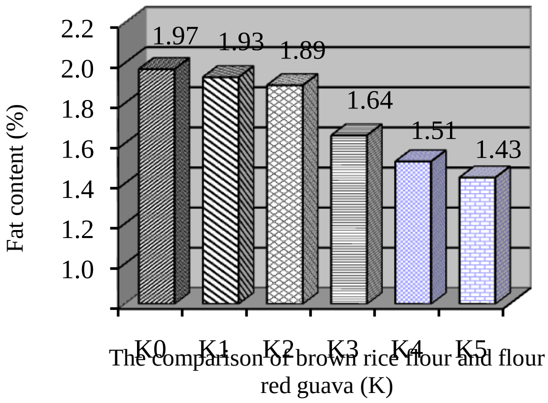

Figure 6.Histrogram of relationship comparison of brown rice flour and red guava flour and fat content of instant flour.

The Figure 6 shows that the highest fat content of red guava flour with brown rice is found in the percentage of brown rice flour with 100%: 0% (K_0) red guava flour. This is because brown rice flour has a higher fat content compared to red guava flour. The use of brown rice flour with a higher percentage will result in instant pureed flour with a higher fat content as well as [25-26].

The effect of the storage time on fat content of instant flour

Table 3 shows that between S_0 treatment with S_1, S_2 and S_3, as well as between S_1 and S_2 and S_3, and between treatments S_2 and S_3 are very significantly different. The highest fat content was found in the S_0 treatment of 2.51% and the lowest was in the S_3 treatment of 1.31%. The relationship between storage time and fat content of instant slurry follows the linear regression equation as shown in Figure 7.

The Figure 7 shows that the longer it is stored, the fat content of instant flour decreases. This is because during storage the fat is oxidized to free fatty acids. The oxidizing the fat, the fat content is reduced during storage. The fat oxidation reaction takes place in three stages, namely the initial stage, the development stage and the stopping stage where the formation of compounds that are no longer free radicals occurs [27].

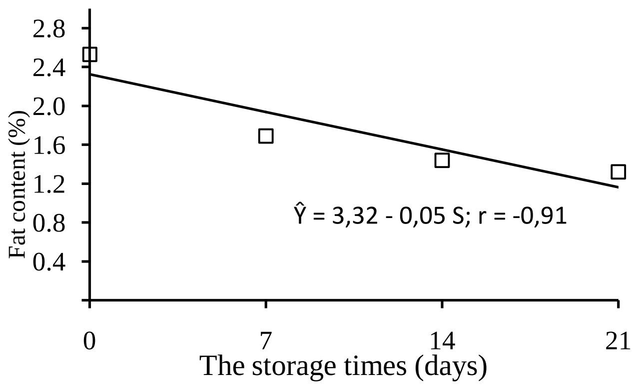

Figure 7. The relationship of the storage with fat content of instant starch.

3.5. The vitamin C content

The effect of comparison of brown rice flour and red guava flour on vitamin C of instant flour.

Table 2 shows that between K_0 and K_4 and K_5 treatments, between K_1 and K_4 and K_5 and between K_2 and K_4 and K_5, they were very significantly different, while between K_4 and K_5 treatments were significantly different, while between K_0 and K_1, K_1 and K_2 and between K_2 and K_3 is not significantly different. The highest levels of vitamin C in the mixture of red guava flour and brown rice were found in the K_0 treatment of 24.09 mg / 100 g of ingredients and the lowest was in the K_5 treatment of 21.77 mg / 100 g of ingredients. The relationship between the percentage of brown rice flour and red guava flour and the vitamin C content of instant flour is presented in Figure 8.

The Figure 8 shows that the highest levels of vitamin C in the mixture of red guava and brown rice are found in the ratio of brown rice flour to red guava flour 50%: 50% (K_5). This is because guava flour contains high levels of vitamin C, so the addition of this flour in an increasing portion will increase the vitamin C content of instant porridge flour [28].

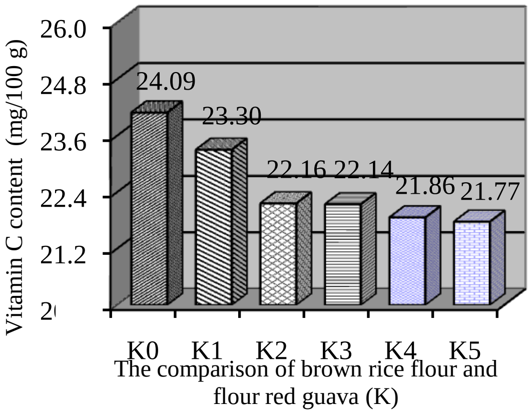

Figure 8. The relationship histrogram of the comparison of brown rice flour and red guava flour and vitamin C of instant flour.

The effect of the storage time on content of vitamin C instant flour.

Table 3 shows that between S0 treatment with S_1, S_2 and S_3, as well as between S_1 and S_2 and S_3, and between S_2 and S_3 treatments are very significantly different. The highest level of vitamin C was found in the S_0 treatment of 26.96% and the lowest was in the S_3 treatment of 20.33%. The relationship between storage time and levels of vitamin C mixed red guava flour with brown rice follows a linear regression equation as shown in Figure 9.

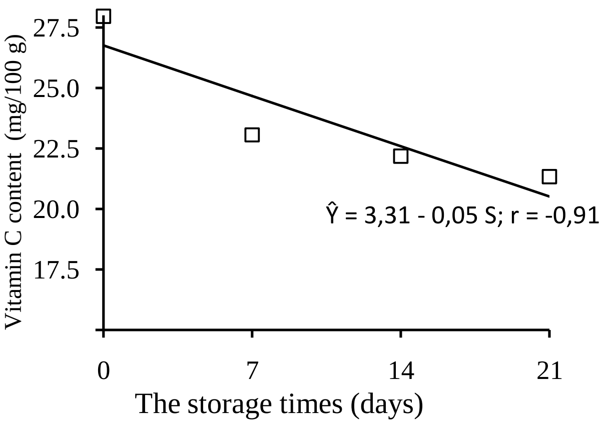

Figure 9. Relationship the storage with vitamin C instant flour

The Figure 9 shows that the longer it is stored, the lower the levels of vitamin C in the mixture of red guava and brown rice. This is because vitamin C is easily degraded, both by temperature, light and surrounding air so that vitamin C levels are reduced. The process of damage or decrease in vitamin C is caused by oxidation during storage, either directly or indirectly[29]..

3.6. The fiber content

The effect of comparison of brown rice flour and red guava flour on fiber content of instant flour.

Table 2shows the treatment K_0 and K_4 and K_5 treatments, between K_1 and K_5 and between K_2 and K_5 were very significantly different, while between K_2 and K_5 treatments and between K3 and K5 were significantly different, while between K_0 and K_1, K_1 and K_2 , between K_2 and K_3, between K_3 and K_4 and between K_4 and K_5 were not significantly different. The highest fiber content of the mixture of red guava flour and brown rice was in the K_0 treatment of 0.58% and the lowest was the K_5 treatment of 0.41%. The relationship between the percentage of brown rice flour and red guava flour and the fiber content of the mixture of red guava and brown rice is presented in Figure 10.

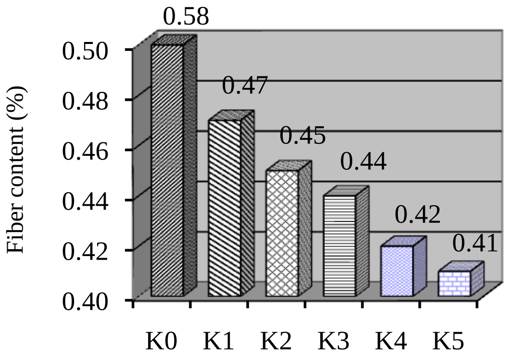

Figure 10. The relationship histrogram of the comparison of brown rice flour and red guava flour with fiber content of instant flour.

The Figure 10 shows that the highest fiber content of instant flour is found in the ratio of brown rice flour to 100%: 0% (K_0) red guava flour. This is because brown rice flour contains a high enough fiber content. The fiber contained in brown rice consists of soluble and insoluble food fiber, so the more brown rice flour that is substituted, the higher the level of food fiber found in instant flour products, the highest is in the ratio of brown rice flour to guava flour. red 100%: 0% (K0). This is because brown rice flour containshigh enough fiber content. [30].

The effect of the storage time on insstant flour fiber content.

Table 3 shows that between S0 treatment with S_1, S_2 and S_3, as well as between S_1 and S_3 are very significantly different. Meanwhile, treatment between S_1 and S_2 and between treatment S_2 and S_3 is significantly different. The highest fiber content was found in the S_0 treatment of 0.75% and the lowest was in the S_3 treatment of 0.47%. The relationship between storage time and instant starch fiber content follows the linear regression equation as shown in Figure 11.

The Figure 11 shows that the longer storage time, the instant flour fiber content decreases. This is because some of the fibers will break down into smaller molecules. The cellulose and hemicellulose can be broken down into molecules such as glucose units by certain enzymes and microbes [31].

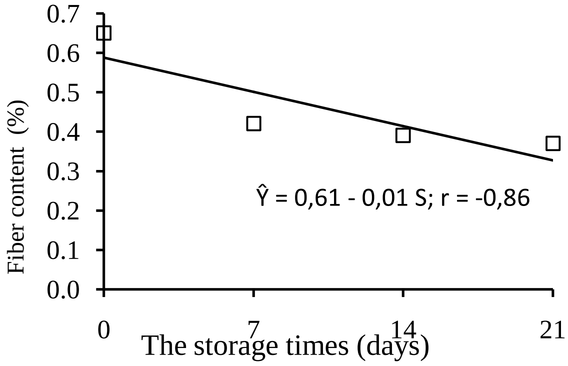

Figure 11. The relationship of the storage with instant starch fiber content.

3.7. The carbohydrate content.

The effect of the storage time on carbohydrate in mixed red guava flour and brown rice.

Table 3 shows that between S_0 treatment with S_1, S_2 and S_3, there is a very significant difference, while between treatments S_1, S_2 and S_3 are not significantly different. The highest carbohydrate content was found in S_3 treatment of 52.88% and the lowest in treatment S_0 of 49.76%. The relationship between storage time and carbohydrate content of instant flour follows the linear regression equation as shown in Figure 12.

The Figure 12 shows that the longer it is stored, the carbohydrate content of the instant flour decreases. The longer the storage, there will be an increase in the breakdown of fibers such as cellulose and lignin. The more cellulose and lignin are broken down, the higher the carbohydrate content. Carbohydrate content has an important role in determining the characteristics of a food ingredient, both taste, color, texture, and so on[32].

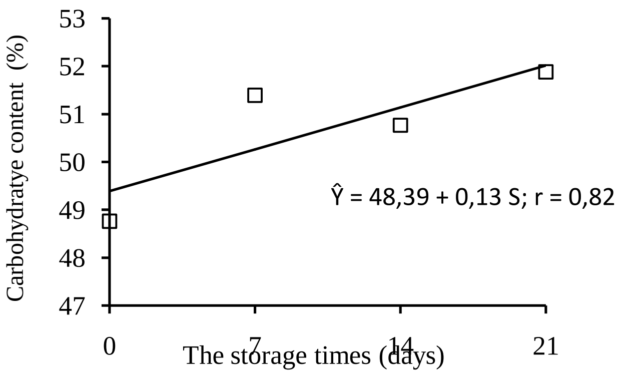

Figure 12.The relationship of the storage with instant starch carbohydrate.

3.8. The organoleptic value.

The effect of comparison of brown rice flour and red guava flour on the organoleptic value of instant flour.

Table 2 shows that between K_0 and K_3, K_4 and K_5 treatments, between K_1 and K_3, K_4 and K_5, between K_2 and K3, K_4 and K_5, between K_3 and K_4, K_5 and between K_4 and K_5 were very significantly different, while between K_0, K_1 and K_2 are not significantly different. The highest organoleptic value of instant flour flavor was found in treatment K_1 of 4.65 and the lowest in treatment K^5 of 3.43. The relationship between the percentage of brown rice flour and red guava flour and the organoleptic value of instant flour is presented in Figure 13.

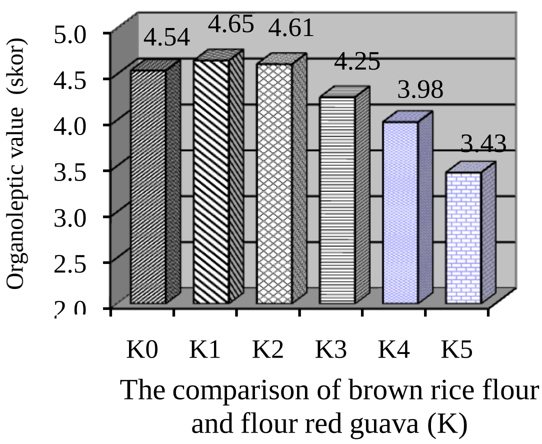

Figure 13.The relationship histrogram of the comparison of brown rice flour and red guava flour with the organoleptic value of instant flour.

The effect of the storage time on organoleptic value of instant flour

Table 3 shows that between S_0 and S_2 and S_3 treatments, as well as between S_1 and S_3 and between S_2 and S_3 are very significantly different, between S_1 and S_2 treatments are significantly different, while between S_0 and S_1 are not significantly different. The highest taste organoleptic value was found in the S_0 treatment of 4.40

and the lowest in the S_3 treatment of 3.96. The relationship between storage time and the organoleptic value of instant flour follows the linear regression equation as shown in Figure 14.

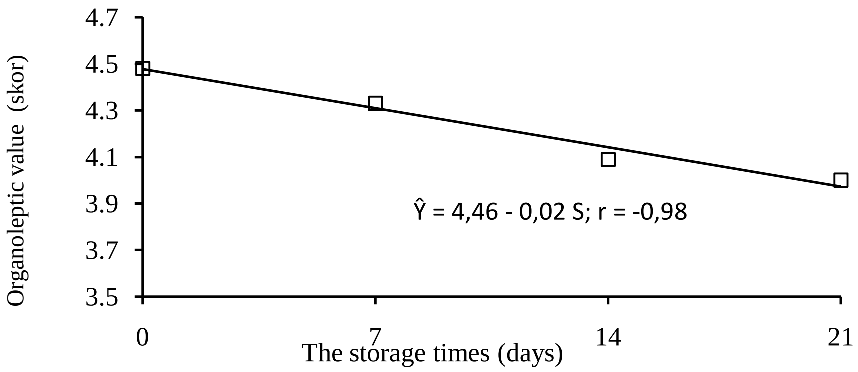

Figure 14.The relationship of the storage with the organoleptic value of instant flour

The Figure 14 shows that the longer it is stored, the organoleptic value of the instant flour decreases. This is due to the loss of organic acid components present in instant flour due to storage time so that the panelists' preference for organoleptic values decreased [33-35].

IV. The conclusion.

The comparison of brown rice flour with red guava flour has a very significant effect on moisture content, ash content, fat content, vitamin C content, fiber content, organoleptic value on protein content and carbohydrate content of the mixture of red guava flour with brown rice. The storage time had a very significant effect on water content, protein content, fat content, vitamin C content, fiber content, carbohydrate content, organoleptic value but had no significant effect on ash content. The longer the storage, the water content, ash content and carbohydrate content increased, while the protein content, fat content, vitamin C content, vitamin C content, fiber content and organoleptic value decreased. The combination treatment of the comparison of brown rice flour with red guava flour and storage time had a very significant effect on moisture content, protein content, fat content, vitamin C content and fiber content, but had no significant effect on ash content, carbohydrate content, and organoleptic value of instant flour. . The best instant flour is obtained from the ratio of brown rice flour to red guava flour 80% to 20% (K2) seen from the organoleptic value, protein and vitamin C content.

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